

Repeated Reading with and without Vocabulary Instruction: Outcomes for
English Language Learners

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Dedication

This dissertation is dedicated to my grandmother, Marion Haupt, for her encouragement.

Abstract

This study compares a repeated reading intervention with and without vocabulary instruction on the reading fluency, comprehension, and vocabulary knowledge of English Language Learners (ELLs). Third-grade ELLs ($N=31$) who were performing below grade level in reading completed one session of repeated reading (RR) and one session of repeated reading with vocabulary instruction (RRV). Using a within-subjects design, condition and passage order were counterbalanced across participants. Dependent measures included Curriculum-based Measures of Oral Reading (CBM-R), researcher-developed literal and inferential comprehension questions, and the Two-Questions Vocabulary Measure (TQVM; Kearns & Biemiller, 2011). Repeated Measures Analysis of Variance (ANOVA) revealed statistically significant main effects of instruction for RRV with large effect sizes for comprehension ($p < .001$, $g = .73$) and vocabulary knowledge ($p < .001$, $g = .98$) but no statistically-significant differences for reading fluency or vocabulary word-reading accuracy. Results suggest RRV may be an effective intervention worth examining for longer durations and with larger samples of ELLs.

Table of Contents

| | |
|--|------|
| Acknowledgements..... | i |
| Dedication..... | ii |
| Abstract..... | iii |
| List of tables..... | vii |
| List of figures..... | viii |
| Chapters. | |
| 1. INTRODUCTION..... | 1 |
| Academic Outcomes of ELLs..... | 2 |
| Reading Development of ELLs..... | 3 |
| Importance of Reading Fluency..... | 4 |
| Importance of Vocabulary..... | 6 |
| Reading Fluency Instruction with ELLs..... | 8 |
| Study Purpose | 9 |
| 2. REVIEW OF THE LITERATURE..... | 11 |
| Group One: Individual Fluency Strategies..... | 13 |
| Group Two: Combined Fluency Strategies..... | 19 |
| Group Three: Comparisons Between Fluency Strategies..... | 24 |
| Outcomes of Fluency Strategies..... | 30 |
| Characteristics of ELLs..... | 34 |
| Measurement Considerations..... | 35 |

| | |
|--|-----|
| | v |
| Review Limitations..... | 37 |
| Implications for Research..... | 38 |
| 3. METHOD..... | 51 |
| Research Design..... | 51 |
| Setting and Participants..... | 53 |
| Measures and Materials..... | 55 |
| Independent Variable..... | 64 |
| Procedures..... | 69 |
| Inter-observer Agreement and Fidelity of Implementation..... | 80 |
| Data Analyses..... | 81 |
| 4. RESULTS..... | 83 |
| Assumption Testing..... | 83 |
| Free Response Vocabulary Assessment Results..... | 86 |
| Primary Analyses..... | 86 |
| Vocabulary knowledge..... | 87 |
| Oral reading fluency..... | 89 |
| Reading comprehension..... | 91 |
| Vocabulary word-reading..... | 94 |
| 5. DISCUSSION..... | 98 |
| Vocabulary Knowledge Outcomes..... | 99 |
| Oral Reading Fluency Outcomes..... | 100 |
| Comprehension Outcomes..... | 102 |

| | |
|---|-----|
| | vi |
| Vocabulary Word-Reading Outcomes..... | 104 |
| Oral Reading Fluency and Comprehension Relation for ELLs..... | 106 |
| Limitations..... | 108 |
| Implications for Research..... | 109 |
| Implications for Practice..... | 111 |
| Conclusion..... | 112 |
| REFERENCES..... | 113 |
| APPENDICES..... | 127 |
| Appendix A: Measures..... | 127 |
| Appendix B: Materials..... | 141 |
| Appendix C: Scoring Rubrics..... | 150 |
| Appendix D: Results Figures..... | 172 |

List of Tables

| Table | Page |
|--|------|
| Table 1. Literature Review Participant Characteristics..... | 41 |
| Table 2. Literature Review Study Design Variables..... | 46 |
| Table 3. Descriptive Statistics for Dependent Measures Across Instructional Conditions..... | 84 |
| Table 4. Results of RM-ANOVA on Vocabulary Knowledge..... | 88 |
| Table 5. Results of RM-ANOVA on Oral Reading Fluency..... | 90 |
| Table 6. Results of RM-ANOVA on Comprehension..... | 92 |
| Table 7. Results of RM-ANOVA on Literal and Inferential Comprehension..... | 93 |
| Table 8. Results of RM-ANOVA on Vocabulary Word Reading Accuracy..... | 96 |

List of Figures

| Figure | Page |
|--|------|
| Figure 1. Study Design and Procedures..... | 52 |
| Figure 2. Mean Vocabulary Change Scores Across Instructional Conditions..... | 89 |
| Figure 3. Mean Comprehension Posttest Scores Across Instructional Conditions..... | 92 |
| Figure 4. Mean Literal and Inferential Comprehension Posttest Scores Across Instructional Conditions..... | 93 |
| Figure 5. Mean Number of Vocabulary Words Read Correctly Across Pre and Posttests..... | 97 |
| Figure D1. Q-Q Plot of RR Oral Reading Fluency Pretest..... | 172 |
| Figure D2. Q-Q Plot of RR Oral Reading Fluency Posttest..... | 172 |
| Figure D3. Q-Q Plot of RRV Oral Reading Fluency Pretest..... | 173 |
| Figure D4. Q-Q Plot of RRV Oral Reading Fluency Posttest..... | 173 |
| Figure D5. Q-Q Plot of RR Comprehension Posttest..... | 173 |
| Figure D6. Q-Q Plot of RRV Comprehension Posttest..... | 174 |
| Figure D7. Q-Q Plot of RR Vocabulary Word Reading Accuracy Pretest..... | 174 |
| Figure D8. Q-Q Plot of RR Vocabulary Word Reading Accuracy Posttest..... | 174 |
| Figure D9. Q-Q Plot of RRV Vocabulary Word Reading Accuracy Pretest..... | 175 |
| Figure D10. Q-Q Plot of RRV Vocabulary Word Reading Accuracy Posttest..... | 175 |
| Figure D11. Oral Reading Fluency Three-way Interaction: Instruction*Condition*Passage Order: Passage A first, Passage B second..... | 176 |
| Figure D12. Oral Reading Fluency Three-way Interaction: Instruction*Condition Order*Passage Order: Passage B first, Passage A second..... | 176 |

| | |
|--|-----|
| Figure D13. Comprehension Three-way Interaction: Instruction*Condition Order*Passage Order: Passage A first, Passage B second..... | 177 |
| Figure D14. Comprehension Three-way Interaction: Instruction*Condition Order*Passage Order: Passage B first, Passage A second..... | 177 |
| Figure D15. Literal and Inferential Comprehension Three-way Interaction: Instruction*Condition Order*Passage Order: Passage A first, Passage B second..... | 178 |
| Figure D16. Literal and Inferential Comprehension Three-way Interaction: Instruction*Condition Order*Passage Order: Passage B first, Passage A second..... | 178 |
| Figure D17. Vocabulary Word Reading Accuracy Three-way Interaction: Instruction*Condition Order*Passage Order: Passage A first, Passage B second..... | 179 |
| Figure D18. Vocabulary Word Reading Accuracy Three-way Interaction: Instruction*Condition Order*Passage Order: Passage B first, Passage A second..... | 179 |
| Figure D19. Vocabulary Word Reading Accuracy Three-way Interaction: Time*Condition Order*Passage Order: Passage A first, Passage B second..... | 180 |
| Figure D20. Vocabulary Word Reading Accuracy Three-way Interaction: Time*Condition Order* Passage Order: Passage B first, Passage A second..... | 180 |
| Figure D21. Vocabulary Word Reading Accuracy Two-way Interaction: Instruction*Passage Order..... | 181 |
| Figure D22. Vocabulary Word Reading Accuracy Two-way Interaction: Instruction*Time..... | 181 |

Chapter 1

INTRODUCTION

Improving the academic outcomes of linguistically diverse students is a critical issue within the U.S. educational system. Presently, language minority students are the fastest growing student subgroup, yet schools struggle to provide effective instruction for this growing population (Slavin & Cheung, 2011). In 2007, 21% of school-aged students spoke a language other than English at home and approximately 5% experienced difficulty speaking English, according to parent report (Aud, 2010).

Individuals identified as “Limited English Proficient” have a primary language other than English with limited abilities to understand, speak, read, or write in English (Federal Interagency Working Group on Limited English Proficiency, 2014). Of these individuals, those who are school-aged and participate in school-based language assistance programs are commonly referred to as English Language Learners (ELLs) or English learners (ELs). Language assistance for these students can include programs such as English as a Second Language, High Intensity Language Training, or bilingual education (National Center for Education Statistics [NCES], 2014). These services are required by federal law to meet the unique language needs of ELLs until sufficient proficiency in English enables meaningful participation in regular education programs (Office for Civil Rights [OCR], 2013). The English language proficiency of ELLs thus ranges from brand new to English to significant oral English proficiency but underdeveloped complex English language skills (Gersten & Baker, 2000). In the 2011-

2012 school year, 9% of all U.S. students received ELL services (NCES, 2014) and this percentage is expected to grow to 25% by the year 2030 (Cheung & Slavin, 2011).

In this chapter, an overview of the academic outcomes and reading development of ELLs in the United States is provided. The importance of reading fluency and vocabulary in developing proficient reading is then discussed, and reading fluency instruction with ELLs is described in relation to the study purpose.

Academic Outcomes of ELLs

As the ELL population increases, evidence of academic difficulty for these students persists. Compared to non-ELL peers, ELLs are at greater academic risk in early literacy and do not reach the same levels of reading performance despite improvement in oral English over time (August & Shanahan, 2006; Slavin & Cheung, 2011, Snow & Biancarosa, 2003). According to the 2013 National Assessment of Educational Progress (NAEP, 2013) only 7% of fourth grade ELLs and 3% of eighth grade ELLs read at or above a proficient level. In comparison, 38% of non-ELL fourth graders and 37% of non-ELL eighth graders read at or above proficiency. Reflecting these academic difficulties, ELLs also face higher rates of grade retention and dropout than do native-speaking peers (Rueda & Windmueller, 2006). In the 2011-12 school year, 59% of students identified as Limited English Proficient graduated from high school compared to 80% of the general population (Stetser & Stillwell, 2014). Furthermore, across grades, ELLs are overrepresented in special education referrals, particularly in the category of learning disabilities (Sullivan, 2011). In general, a large and persistent achievement gap

between ELL and non-ELL students has been indicated across numerous national assessments (August, Carlo, Dressler, & Snow, 2005).

Reading Development of ELLs

This academic achievement gap mirrors a corresponding lack of research on reading instruction for ELLs compared to that for native English speakers. Research syntheses such as the National Reading Panel Report (NRP, 2000) have identified key components of reading instruction for native English speakers; yet, it is unclear whether these results hold for ELLs. Not only have ELLs been frequently removed from normative samples used to establish reading benchmarks and assessments (Linan-Thompson, Cirino, & Vaughn, 2007); it is generally unknown whether English reading development is the same for ELLs as for native English speakers (August & Shanahan, 2006).

Several factors suggest that reading development for ELLs might differ from native English speakers. An obvious difference is that ELLs must simultaneously learn oral and written English in order to read; as a result, most ELLs learn to read with generally underdeveloped English proficiency (Crosson & Lesaux, 2010). In addition, ELLs present varied combinations of psychological, linguistic, sociocultural, and educational background factors that impact reading development (Helman, 2009). Given the inherent diversity of ELLs, significant individual differences related to language, home, and school experiences can further combine to produce an array of strengths and needs among identified students (Artiles, Rueda, Salazar, & Higuera, 2005).

While the impact of these factors on ELLs' reading development remains largely unexplored, preliminary research on the instruction of beginning reading skills suggests similar outcomes to native English speakers. In general, research indicates that ELLs who begin school with reading difficulties are able to improve with early intervention and research-based instruction (Quiroga, Lemos-Britton, Mostafapour, Abbott, & Berninger, 2002). For example, in a study by Chiappe, Sieggel, and Wade-Wooley (2002), Kindergarten ELLs who were initially behind on measures of phonemic awareness made enough growth to catch up to native English-speaking peers by first grade. Similarly, in a study by Kamps et al. (2007), ELL and non-ELLs in first and second grades completed direct instruction interventions in phonics and almost all students demonstrated gains on decoding measures. Developmental studies have also indicated that word recognition progresses similarly for ELLs as for native English speakers (e.g., Chiappe & Siegel, 2006).

Despite converging evidence on beginning reading instruction with ELLs, few studies have examined instruction on advanced reading skills. One essential skill in critical need of research with ELLs is reading fluency. Fluency studies with native English speakers have indicated that oral reading fluency is a strong predictor of students' overall reading proficiency (Fuchs, Fuchs, Hosp & Jenkins, 2001) as well as performance on high-stakes tests (McGlinchey & Hixson, 2004). Reading fluency is primarily important, however, in facilitating reading comprehension—a key area in need of development with ELLs and an ultimate goal of reading in general.

Importance of Reading Fluency

Multiple definitions of reading fluency and its role in supporting reading comprehension are suggested in research with native English speakers. In general, all reading fluency definitions rely on the assumption that a reader's attentional capacity is limited, and that good readers are able to decode text automatically and direct more attention towards comprehending what is read (e.g., LaBerge & Samuels, 1974). To this end, some researchers have defined fluency as the ability to read connected text with speed and accuracy (Daane, Cambell, Grigg, Goodman, & Oranje, 2005). Other researchers have further defined reading fluency as the ability to read passages with speed, accuracy, and expression/prosody (Hudson, Lane, & Pullen, 2005; Rasinski, 2007; Snow, Burns, & Griffin, 1998). These definitions suggest that readers must be able to accurately and automatically identify words and use appropriate expressive elements such as pitch and stress while reading aloud (Kuhn, 2011). When these elements occur automatically, cognitive resources are spared and reading comprehension is facilitated.

A third definition of reading fluency includes characteristics of speed, accuracy, and expression, but notes that reading fluency is the *simultaneous* decoding and comprehension of text (Alt & Samuels, 2011; Samuels, 2006). Whereas the above definitions vary in their emphases on reading comprehension, Samuels (2006) suggests that efficient decoding and reading comprehension occur together given automaticity in respective sub-skills. This definition suggests that rate, accuracy, and prosody are indicators of this simultaneous occurrence; however, it is necessary to check whether comprehension actually occurs.

The variety of reading fluency definitions indicates the construct is a complex, multifaceted process involving every sub-skill in reading (Wolf & Katzir-Cohen, 2011). Whether reading fluency facilitates reading comprehension in a sequential manner or is better defined by the co-occurrence of comprehension with automatic decoding, a relevant concern is whether comprehension occurs in connection with elements commonly associated with reading fluency (i.e., rate, accuracy, and prosody). For the purposes of this dissertation, reading fluency is defined as the ability to read connected text with sufficient rate and accuracy. Whether and to what extent comprehension occurs in connection with reading fluency is examined.

Reading fluency has been well researched with native English speakers (Fuchs et al., 2001; Kuhn & Stahl, 2003; NRP, 2000; Wolf & Katzir-Cohen, 2001). In addition to identifying developmental trends and empirically-based interventions, this line of research indicates a generally robust relationship between reading fluency and reading comprehension (Fuchs, Fuchs, & Maxwell, 1988; Wiley & Deno, 2005). That is, when reading fluency is sufficiently established, reading comprehension is generally achieved by native English speakers. Reading fluency has even been described as a “proxy” for overall reading proficiency by some researchers (Fuchs et al., 2001).

It should be noted, however, that few reading fluency studies have appropriately examined this skill with ELLs. In a comprehensive review of literature conducted by the National Literacy Panel on Language-minority Children and Youth, only three studies explicitly addressed the development of reading fluency with ELLs as of 2001 (Lesaux & Geva, 2006; Shanahan & Beck, 2006). ELLs have also been excluded from empirical

studies of reading fluency (e.g., Katzir et al., 2006; Schwanenflugel, Meisinger, Wisenbaker, Kuhn, Strauss, & Morris, 2006) or have not had results disaggregated from large-scale datasets (Daane, Campbell, Grigg, Goodman, & Oranje, 2005).

Importance of Vocabulary

It is possible that oral language components related to reading fluency and that characterize ELLs may influence the relationship between reading fluency and comprehension for these students. First, for all students, some evidence suggests that oral language proficiency may affect development of reading fluency and its connection to comprehension. Jenkins, Fuchs, van den Broek, Espin, & Deno (2003) examined sources of individual differences in reading fluency among fourth grade native English speakers and observed that comprehension skill uniquely predicted reading fluency when controlling for word reading ability. This finding suggests that aspects of oral language proficiency contribute to both reading comprehension and reading fluency. Similarly, in a study by Torgeson, Rashotte, and Alexander (2001), vocabulary knowledge predicted reading fluency of connected text for monolingual students in fifth grade. Perfetti (1985, 2007) also suggests that the ability to access rich, meaningful representations of individual words is a vital component in lower-level processing that leads to reading fluency.

These observations are consistent with the frequently observed correlation between vocabulary knowledge and comprehension skill (Baumann & Kameenui, 1991; Beck & McKeown, 1991; Espin & Deno, 1995; Raynor, Foorman, Perfetti, Pesetsky, Seidenberg, 2001). In general, research indicates that vocabulary is intimately linked

with the ability (or inability) to comprehend text (Graves, 2006). Particularly for students who are sufficient decoders and read with appropriate rate and accuracy, limited vocabularies have been found to be a primary interference in reading comprehension (Chall, Jacobs, & Baldwin, 1990). Yovanoff, Duesberry, Alonzo, and Tindal (2005) also observed that vocabulary knowledge became increasingly important compared to reading fluency when predicting reading comprehension after grade four.

The influence of oral language proficiency on higher-order reading skills is highlighted by the Lexical Quality Hypothesis proposed by Perfetti (2007). Perfetti (1985) suggests that transfer of cognitive resources from lower word-level reading processes (once automatic) to higher-level processes--such as comprehension--is a necessary yet insufficient model for reading proficiency. In addition to sufficient *processing*, proficient reading also requires sufficient *knowledge* of words including both form and meaning components (Perfetti 2007). The ability to quickly access accurate representations of a word's form and meaning relies on reader knowledge and underlies efficient processing. Given that lexical quality can vary across words, overall lexical quality encompasses not only vocabulary size, but also the stability of a reader's knowledge about words' forms and meanings (Perfetti 2007).

In light of Perfetti's Lexical Quality Hypothesis and corresponding empirical evidence, low vocabulary skills might hinder the development of reading fluency or diminish the reliability of features such as rate, accuracy, and prosody to predict the occurrence of reading comprehension. Provided that all definitions of reading fluency depend on sufficient automaticity in reading sub-skills, examining the contribution of

vocabulary knowledge to reading fluency and its relationship to comprehension is merited in general, but particularly important for ELLs who frequently possess underdeveloped English oral proficiency.

Reading Fluency Instruction with ELLs

Considerable research with native English speakers has resulted in successful reading fluency practices that improve students' rate, accuracy, and comprehension of connected text. These practices generally include three elements: (1) modeling of expressive reading, (2) extensive opportunities to practice reading connected text, and (3) the provision of assistance during reading (Rasinski, 2003). One of the most common and effective strategies is repeated reading (Samuels, 1979) in which students re-read either one or multiple texts with or without assistance.

While repeated reading has empirical support with native English speakers, the extent to which it functions similarly with ELLs is less known. Previous research on the use of reading fluency strategies with ELLs is sparse and varies in methodological quality. Results generally indicate, however, that repeated reading is more effective in improving the reading fluency of ELLs compared to fluency strategies such as listen passage preview or contingent reward (Berry, 2010; Dufrene & Warzak, 2007; Malloy, Gilberston, & Maxfield, 2007). Furthermore, when Rousseau and Tam (1993) compared listen passage preview with and without vocabulary support, vocabulary instruction enhanced fluency outcomes for all ELL participants. Few fluency studies with ELLs have assessed gains in comprehension; however, initial results indicate general improvement

albeit to a lesser and more variable extent (Berry, 2010; Malloy, Gilberston, and Maxfield, 2007; Rousseau & Tam, 1993).

Overall, the relation between fluency instruction with and without vocabulary support to improvement in reading fluency and comprehension for ELLs appears promising albeit unclear due to limited empirical research. Given the comparatively lower English oral language competencies of ELLs and empirical and theoretical support for the role of oral language in influencing both fluency and comprehension outcomes, incorporating vocabulary instruction within repeated reading appears a reasonable instructional adaptation for ELLs.

Study Purpose

This study will explore whether combining repeated reading with vocabulary instruction shows promise to improve the reading fluency and comprehension of ELLs. The brief, translational nature of the study is intended to examine whether this concept is worth extending in intervention studies of longer duration and with larger sample sizes. The following research question guided this study:

Does repeated reading with vocabulary support improve the reading fluency and comprehension of ELLs beyond repeated reading in isolation?

Based on a review of the literature, my hypothesis is that repeated reading with vocabulary instruction will be superior across all reading fluency and comprehension measures for ELLs.

Chapter 2

LITERATURE REVIEW

Given limited understanding of fluency outcomes with ELLs and research that suggests vocabulary knowledge may moderate reading comprehension, this literature review will focus on reading fluency instruction with ELLs and the contribution of vocabulary instruction to fluency and comprehension outcomes. The following primary and secondary questions guide this review:

1. What is the state of knowledge regarding reading fluency instruction with ELLs?
2. Does the addition of vocabulary instruction improve reading fluency and comprehension outcomes with ELLs?

Review Method

To locate articles for this review, several electronic databases were searched, including ERIC, Education Full Text, Academic Search Premier, Psych Info, Digital Dissertations, and Google Scholar. Participant descriptors (*English language learners, ELL, English as a second language, ESL, limited English proficiency, LEP, English learners, EL, non-native English speakers, linguistically diverse, bilingual and Hispanic*) were used in combination with the following key words: *reading fluency, fluency, reading, reading education, technology, computer-assisted instruction, and vocabulary*. Ancestral searches were also conducted based on relevant citations from studies on reading fluency instruction with ELLs.

Peer-reviewed studies that implemented English reading fluency strategies with ELLs were included. Due to the relatively small research base on reading fluency

instruction with ELLs, dissertations were also included. To meet inclusion criteria, studies needed to include an assessment of oral reading fluency of connected text and use experimental, quasi-experimental, or single subject designs. A control group was required for all studies with quasi-experimental designs and at least one effect replication was required for single subject designs. Results needed to be disaggregated for ELLs when non-ELL participants were also included.

Additional inclusion criteria pertained to participants' ELL status. Studies that included ELLs who either qualified for ELL services in schools or who had a home language other than English were included. For participants with a home language other than English or described as Limited English Proficient, an additional indication of English reading difficulty was required. To target the period in which students transitioned from non-reading to fluent reading, ELL participants needed to be in Kindergarten through fifth grade. One study (Rousseau & Tam, 1993) had sixth grade participants but was included because of close alignment with the purpose and grade ranges of this review.

Studies were excluded that either delivered interventions or used dependent measures in a language other than English. Studies from non-English speaking countries were excluded because of varying demands in learning to read English when it is not the primary language of communication. Studies with multi-component reading interventions that prohibited inferences about the effectiveness of fluency-specific instruction were also excluded.

Literature Review

A total of 13 studies were located for this review. Tables 1 and 2 highlight participant characteristics and study design variables, respectively. In the following section, studies are grouped together based on their examination of fluency strategies in one of three ways: (1) individual fluency strategies, (2) combined fluency strategies, and (3) comparisons between fluency strategies. Within each group, descriptions of the strategies used, study designs, results, and strengths and limitations are provided. When possible, studies of similar design are described together within groups.

Group One: Individual Fluency Strategies

Group One contains four studies that examined single fluency strategies. Of these studies, three also included a vocabulary component. Individual fluency strategies with and without vocabulary support were compared to instruction as usual or baseline conditions.

Study One. Almaguer (2005) examined the use of dyad reading—when a lower and higher reader read simultaneously from a text—on the fluency and comprehension of ELLs. Participants included 80 third-grade ELLs from two transitional-bilingual schools in Texas. Four classrooms were randomly assigned to treatment or control. Treatment participants completed 30 min of daily dyad reading across nine weeks. Reading fluency and comprehension were assessed at pre and post-test using the Comprehensive Reading Assessment Battery (CRAB; Fuchs, Fuchs, & Maxwell, 1988). Results indicated statistically significant gains ($p < .05$) in fluency and comprehension for the treatment group, with effect sizes of .74 and .60, respectively. Effect sizes for CRAB cloze

procedures were small, however, and between-group differences were not statistically significant. Findings suggest dyad reading can improve the fluency and comprehension of elementary ELLs.

Study strengths included a control group that completed otherwise similar literacy instruction to the treatment condition. Pre-test results indicated participants were comparable across groups on measures of ethnicity, dominant language, socioeconomic status, reading fluency, and reading comprehension. Treatment teachers also received training to properly implement dyad reading. Limitations of the study included minimal description of the dyad reading intervention and its implementation. Dyad pairs self-selected reading material; whether texts were of appropriate readability is unclear. Fidelity of dyad reading and core instruction was not described, and to what extent instruction occurred as intended is unknown. Study authors also did not report the comparability of teachers or participant absenteeism across conditions; it is unclear whether these factors differentially influenced outcomes across groups. For these reasons, it is difficult to infer that direct gains were related to dyad reading.

Study Two. Landa (2009) examined the use of repeated reading with vocabulary support on the fluency and comprehension of four ELLs with learning disabilities in grades three ($n=2$), four ($n=1$), and five ($n=1$). Participants reviewed pre-selected words, read a corresponding passage with error correction, and completed two independent readings during daily sessions for 12 weeks. A multiple probe baseline design across subjects was used with Curriculum-based Measures of Reading assessments of Words Correct Per Minute (WCPM), number and types of errors per minute (EPM), and literal

comprehension responses. Visual analysis and summary statistics across participants indicated improved reading fluency and comprehension compared to baseline and decreased errors. Generalization and maintenance means across dependent measures remained above baseline levels. Findings suggest repeated reading with vocabulary support can improve the reading skills of ELLs with learning disabilities.

Study strengths included a focus on fluency instruction for ELLs with learning disabilities, which is an area with little empirical research. Interventionists also identified whether pre-selected vocabulary words were unknown by participants before instruction. High-overlap generalization probes were used in 28.3% of sessions; maintenance was also assessed using previous passages at 2, 4, and 6 weeks post-intervention. Inter-observer agreement and fidelity of implementation were sufficiently high to enhance outcome interpretability (90.31-98.97% for observer agreement and 99.78% for fidelity).

Study limitations included the inability to infer combined effects of repeated reading with vocabulary support. Vocabulary support occurred during baseline and intervention phases; outcomes thus represent the unique contribution of repeated reading to vocabulary instruction. To what extent repeated reading would produce similar results without vocabulary instruction is unknown. Although visual inspection suggests improvement in dependent measures across participants, the magnitude of this effect was not calculated beyond mean scores.

Study Three. O'Donnell, Weber, and McLaughlin (2003) examined the combination of listen passage preview and key word discussion on the fluency and comprehension of one fifth-grade Chinese ELL student. The participant discussed

keywords, tracked as the passage was read aloud, and completed a timed reading. An ABAB reversal design was used to assess WCPM, EPM, and five literal comprehension responses. Maintenance and study replication occurred six months post-intervention. Visual analysis and averaged gains indicated an increase in level for WCPM and comprehension questions from baseline to intervention phases; dependent measures in maintenance remained within intervention ranges. Replication produced positive although less pronounced gains. Results suggest listen passage preview and key word discussion can improve the fluency and comprehension of Chinese ELL students.

Study strengths included replication that demonstrated consistency of effects with the same participant. The study was also the only study reviewed to include a Chinese-speaking ELL. In addition, interventionists checked whether pre-selected words were already known before instruction and inter-observer agreement averaged 93% and occurred for more than 40% of total sessions.

Significant study limitations warrant caution when interpreting outcomes. The participant demonstrated high levels of WCPM during baseline and the appropriate use of a fluency intervention is unclear. CBM-R scoring also deviated significantly from typical procedures and threatens interpretation of results. Atypical CBM-R scoring included ignoring small prepositions under four letters in either the number of words read or the number of words read correctly; in addition, failure to pause at period punctuation was considered an error. Furthermore, during maintenance and replication the participant transitioned from fifth to sixth grade. Despite this transition, three previously used fifth-grade passages were re-administered during maintenance and novel fifth-grade passages

were used during replication. Maintenance passages were thus possibly familiar to the participant and were likely easier than those used during initial intervention. An increasing baseline trend for WCPM of only three data points also confounds results of the replicated intervention. The use of one participant significantly limits the generalizability of results.

Study Four. Albers and Hoffman (2012) examined the combination of a vocabulary drill and practice method with self-graphing on sight word, fluency, and comprehension measures. Participants included three third-grade Latino ELLs. Participants completed a flashcard drill procedure known as the *folding-in technique*, which interspersed unknown target words with known words in a 3:7 ratio. Interventionists modeled definitions and example sentences with target words; participants then repeated components and rehearsed words using the folding-in technique. Participants completed identical CBM-R and MAZE assessments before and after individual sessions; target words were selected from pre-session readings, and post-session scores were graphed. A multiple baseline design across participants was used to assess WCPM, Correct Word Choices Per Minute (CWCPM), and percent acquisition of total unknown words. Results indicated acquisition of unknown words ranged from 88-95% across participants, and 100% Percentage of Non-Overlapping Data occurred for WCPM and CWCPM. Results suggest the folding-in technique and self-graphing procedures can improve the fluency and comprehension of ELLs.

Study strengths included graphed scores from CBM-R and MAZE assessments to emphasize automaticity and reading for understanding. Selected vocabulary words were

also confirmed as unknown prior to the folding-in technique. Participants had the same level of English proficiency according to Assessing Comprehension and Communication in English State-to-State for English Language Learners (ACCESS for ELLs®; Kenyon, 2006). The influence of English language proficiency on observed results was therefore better controlled across participants. Fidelity of implementation and inter-observer agreement were also sufficiently high (96.7% and 93.9-99.2%, respectively).

Study limitations restrict clear interpretation of findings, however. Description of baseline instruction and assessment is limited but suggests participants completed CBM-R and MAZE assessments once per session. CBM-R and MAZE scores during intervention were recorded after second readings, and comparisons between phases are potentially confounded by differences in opportunities to re-read passages. For this reason, PND and mean score differences are likely inflated and the unique contribution of the intervention beyond re-reading passages is unclear. It is also unclear whether unknown words were selected from CBM-R passages, MAZE passages, or a combination of both. Depending on the method of selection, unknown words might have represented either comprehension or decoding errors, and the appropriate use of the folding-in technique, which emphasized reading *and* defining words, is ambiguous. Additionally, while participants needed to provide definitions of unknown words to constitute mastery during intervention sessions, it is unclear whether participants defined or simply read unknown words in the final target word posttest. Whether outcomes represent gains related to vocabulary or sight-word recognition is unclear.

Group One studies provide some evidence of the effectiveness of single fluency strategies with ELLs. It should be noted, however, that three of the four studies in Group One (Albers & Hoffman, 2012; Almaguer, 2005; O'Donnell et al., 2003) presented significant threats to internal validity. These threats were related to limited baseline and intervention descriptions, atypical scoring, and minimal fidelity data. Group One studies also included minimal participant description and limited external validity. While results across Group One studies suggest improvement in fluency and comprehension skills for ELLs, poor methodological quality prohibits conclusive interpretations regarding the efficacy of single fluency strategies.

Group Two: Combined Fluency Strategies.

Group Two contains four studies that combined multiple fluency strategies in an intervention package for ELLs. While Group One studies used either a single fluency strategy or one combined with a vocabulary component, studies in Group Two combined at least two fluency strategies into one treatment package. Two studies also included a vocabulary component.

Study One. Kupzyk, McCurdy, Hostadter, and Berger (2011) examined a parent-delivered audio-recorded fluency intervention for two ELLs. Participants included siblings in grades 2 and 3 who completed audiotaped sessions facilitated by their mother 3-4 times weekly across 6-8 weeks. Sessions included listen passage preview, repeated reading, and self-graphing. A multiple baseline design across participants was used to assess fluency with CBM-R passages of high and low-overlap prior to, during, and several weeks post-intervention. Modified versions of the Intervention Rating Profile-15

were used to assess treatment acceptability. Results indicated immediate and generalized fluency gains that surpassed expected weekly growth rates; results were maintained for both participants and the program was rated as highly acceptable by parents. Results suggest a parent-led audiotaped fluency intervention can improve fluency outcomes for ELLs when implemented at home.

A notable strength of this study included a home-implemented English reading fluency intervention managed by a parent with limited English proficiency. Prior to implementation, researchers tested the intervention and facilitated parent training. Study authors assessed fluency in multiple ways including high-overlap passages for direct fluency gains and low-overlap passages for mean rate of growth per week, generalization, and maintenance throughout intervention and at 6 and 9 weeks post-intervention. High acceptability ratings combined with strong inter-observer agreement for scoring and treatment integrity (both 98.6%) demonstrate the intervention was completed effectively and perceived as family-friendly.

Several study limitations should be noted, however. The reported average overlap between weekly high-overlap and instructional passages was 82.4%. This description is unclear, however, because different instructional passages were used throughout the week and one high-overlap passage was used for weekly pre-post assessments. Also, although students received performance feedback at home, the parent tallied the number of words read in one minute versus the total words read *correctly*. While this scoring procedure likely enabled the parent to better facilitate the intervention, feedback regarding

participants' reading accuracy was not provided. To what extent participants sacrificed reading accuracy for speed during sessions is unknown.

Study Two. Tam, Heward, and Heng (2006) used a multiple baseline design across subjects to examine two conditions of an intervention package comprised of vocabulary instruction, error correction, four repeated readings, and self-graphing on the fluency and comprehension of ELLs. Participants were in grades three ($n=3$), four ($n=1$), and five ($n=1$); three participants had learning or developmental disabilities. Condition 1 required new repeated reading passages each session; Condition 2 required one passage until reaching a fluency criterion. Dependent measures included WCPM and five literal comprehension questions. Visual analysis and descriptive statistics indicated both conditions produced fluency and comprehension gains compared to baseline and control conditions; however, Condition 2 produced the highest gains across measures. Results suggest both packages can improve fluency and comprehension for ELLs with or without disabilities and a fluency criterion can further enhance fluency outcomes.

Study strengths included a control condition of storybook reading that was of equal duration to the intervention. The possibility of participant improvement due to additional instruction versus intervention effectiveness was thus reduced. Sessions also contained 25 min of vocabulary instruction comprised of visual word displays and the use of gestures, pictures, and discussions of context to define 5-6 key terms.

Study limitations included generalization probes of silent passage reading. While comprehension questions occurred in combination with probes, observable assessments of oral reading fluency were unavailable. Whether students' comprehension scores

reflect multiple re-readings is also unknown. Additionally, a maintenance phase occurred immediately after intervention and the extent to which results maintained several weeks post-intervention cannot be inferred. Procedures for establishing individual fluency criteria were not described and the appropriate fit between criterion and individual participants remains unknown. In addition, participants were encouraged to read “fast” during the new passage condition; these directions might have limited students’ abilities to comprehend instructional material and possibly diminished comprehension scores.

Study Three. Begeny, Ross, Greene, Mitchell, and Whitehouse (2012) examined the Helping Early Literacy with Practice Strategies (HELPS) program on the fluency and comprehension of ELLs. HELPS combined three repeated readings, modeling, phrase-drill error correction, verbal cueing, goal setting, performance feedback, and a motivational component. Participants included 21 Spanish-speaking ELLs in Grade 2. Thirteen participants were randomly assigned to HELPS plus core instruction; eight students completed core instruction only. Two groups of treatment participants completed HELPS 2-3 times weekly across either five or seven months. Pre-posttest scores from the fluency and comprehension assessments of the Gray Oral Reading Test (GORT) were analyzed using the Mann-Whitney *U*-test and Glass’s Δ . Results indicated HELPS participants significantly outperformed control participants on GORT-Fluency ($p < .01$, $\Delta=.97$) and GORT-Comprehension ($p = .01$, $\Delta=1.24$). Results suggest HELPS can improve the fluency and comprehension of young ELLs.

This is the only study reviewed to assess a combination of fluency strategies within a standard protocol, manualized intervention program. Standardized programs

such as HELPS can be easily disseminated, frequently used, and conducted with higher fidelity than alternative fluency approaches. The intervention spanned several months, and results were strengthened by a control group and chi-square analyses that demonstrated no between-group differences at pretest on measures of ethnicity, sex, and number of retained participants. Individual change scores of +1 or more were calculated for participants and demonstrated that 76.9% and 92.3% of HELPS participants improved on fluency and comprehension measures, respectively. In comparison, 25% and 62.5% of control participants improved on measures of fluency and comprehension.

Due to school policies, participant information about disability identification was unavailable and whether HELPS was effective for ELLs with disabilities remains unknown. Furthermore, while intervention passages were individually selected for participants based on Spache readability levels, the criteria for aligning leveled passages with participants were not described.

Study Four. Ross and Begeny (2011) used an alternating treatments design to compare a fluency package delivered across two conditions: one-to-one (1/1) and small-group (SG), to a no-treatment control. Participants included five second-grade Latino ELLs. The intervention comprised listen passage preview, repeated reading, retell, phrase-drill error correction, and vocabulary instruction. Fluency passages and the Test of Word Reading Efficiency (TOWRE) were completed at the beginning and end of the study; immediate and retention assessments using WCPM occurred every session. Results according to randomization, visual, and SEM analyses indicated the 1/1 condition produced significant mean gain scores for all participants on immediate assessments and

significant retention gains for three participants. For two participants, the 1/1 and SG conditions were equally effective. Results suggest that ELLs can benefit from a fluency package implemented with a small group or individually.

This is the only study found that compares small group and one-to-one delivery methods in addition to the general effectiveness of a fluency intervention with ELLs. Study strengths included a no-treatment control condition comprised of equal time spent on math fluency to account for extra instruction. In addition to several data analytic strategies used to enhance outcome interpretability, immediate assessments were completed before and after sessions, and retention assessments with a previous passage occurred in subsequent sessions as an additional fluency measure.

Study limitations should be noted, however. While immediate and retention gains were assessed, no measures of passage generalization or maintenance were included beyond standardized pre-post assessments. Also, fidelity data for scoring were not reported and it is unknown whether inter-observer agreement was consistent across implementation. A small number of participants from the same language background limits the generalizability of outcomes.

Overall, Group Two studies were of comparatively stronger methodological quality than Group One studies. Studies in Group Two offered more description of baseline and control conditions, demonstrated high fidelity and inter-observer agreement, and used several psychometrically sound measures and scoring procedures to assess fluency and comprehension outcomes for ELLs. Group Two results suggest combined

fluency strategies can promote fluency and comprehension gains for ELLs with and without learning disabilities.

Group Three: Comparisons Between Fluency Strategies

Group Three contains five studies that compared different fluency strategies or the same fluency strategy modified in different ways. Unlike studies in Groups One and Two, Group Three studies examined which individual fluency strategies were comparatively more effective with ELLs, as opposed to whether single fluency strategies (Group One) or combined fluency strategies (Group Two) improved outcomes compared to typical instruction. Three studies also included vocabulary instruction.

Studies One and Two. Malloy, Gilberston, and Maxfield (2007) and Dufrene and Warzak (2007) examined the utility of Brief Experimental Analysis (BEA) to identify effective fluency strategies for ELLs. Mini-withdrawal and alternating treatment designs were used to compare immediate and extended effects. Malloy and colleagues (2007) examined five fluency strategies of increasing language support: contingent reward, listen passage preview, repeated reading, key word identification, and key word incremental rehearsal. Similarly, Dufrene and Warzak (2007) examined listen passage preview, repeated reading, contingent reward, and a combined condition of listen passage preview and repeated reading. Dufrene and Warzak (2007) also implemented fluency strategies in both English and Spanish.

In the study by Malloy et al. (2007), participants earned small prizes during the contingent reward condition for improved scores on instructional, MAZE, and generalization passages compared to baseline. During listen passage preview, the

interventionist read the passage aloud before participants read with error correction. The repeated reading condition included three trials with error correction. During Key Words, participants selected five unknown words from a passage, read the passage with error correction, and the interventionist displayed and provided definitions for unknown words. The same process occurred during incremental rehearsal when participants reviewed five words on flashcards by pronouncing, defining, and using selected words in sentences. The listen passage preview, contingent reward, and repeated reading strategies were similarly implemented by Dufrene and Warzak (2007), although no error correction was described.

Participants in the study by Malloy et al. (2007) included Latino students from grade 1 ($n=2$) and across grades 3-5 ($n=3$). Sessions occurred four times weekly for 24 days. Dufrene and Warzak (2007) included one Spanish-speaking third-grade participant. English fluency sessions occurred approximately twice weekly for eight weeks, and study replication occurred two months post-intervention. Thereafter, Spanish fluency sessions occurred twice weekly across four weeks with study replication occurring one month post-intervention.

Both studies measured fluency with CBM-R instructional and high-overlap generalization passages. Malloy et al. (2007) also used MAZE passages to assess comprehension, and Dufrene and Warzak (2007) included a modified version of the Intervention Rating Profile. Results for Malloy et al. (2007) indicated all participants' fluency scores improved with at least one treatment and continued across time. Selected strategies included repeated reading ($n=2$), key word identification ($n=1$), incremental

rehearsal ($n=1$), and incremental rehearsal with contingent reward and repeated reading ($n=1$). Greater average gains and differentiation of results were observed on instructional probes versus generalization probes. Similarly, MAZE fluency in extended analyses produced variable performance and poor differentiation compared to baseline. Visual analysis of English reading results in the study by Dufrene and Warzak (2007) indicated improved performance across instructional and generalization probes during the combined condition of listen passage preview with repeated reading. Spanish results were variable across passages and replications. Interventions were rated as highly acceptable.

Both studies were strengthened by the inclusion of generalization passages and sufficient inter-observer agreement and fidelity of implementation. Studies demonstrated experimental effects either twice (Dufrene & Warzak, 2007) or three times (Malloy et al., 2007). Limitations in the study by Malloy et al. (2007) included a slightly upward trend throughout extended baselines that suggests practice effects or classroom instruction may have contributed to continued student improvement. The criterion for success in the contingent-reward condition was reportedly low although not described; this condition was ineffective for all students and the criterion was possibly too low. In the study by Dufrene and Warzak (2007), generalizability was limited by the inclusion of only one participant. In addition to a lack of error correction during fluency strategies, maintenance of effects was not assessed and the final replication of the English intervention was abbreviated to three sessions due to the end of the school year.

Studies Three, Four, and Five. Berry (2010), Rousseau and Tam (1991), and Rousseau and Tam (1993) used alternating treatment designs to compare listen passage preview, alone or combined, to other fluency strategies. Berry (2010) compared repeated readings with and without listen passage preview. Rousseau and Tam (1991) compared key word instruction combined with either a silent reading or read-aloud version of listen passage preview. Rousseau and Tam (1993) further compared whether key word instruction or listen passage preview were more effective when implemented individually or combined.

Berry (2010) examined repeated reading by having participants complete three reading trials with error correction. Prior to the trials, the interventionist read the passage aloud during the combined condition with listen passage preview. Rousseau and Tam (1991) implemented key word instruction by displaying 10 pre-selected passage words that participants pronounced and used corresponding pictures and gestures to discuss definitions. Key word instruction was combined with either a read-aloud preview where the teacher read a passage as students tracked, or a silent preview where students read the passage silently. Procedures were similarly implemented in the study by Rousseau and Tam (1993) although listen passage preview used only the read-aloud version.

Participants in the study by Berry (2010) included five third-grade ELLs, one of whom had a learning disability. The studies by Rousseau and Tam (1991, 1993) included eight Latino students between the ages of 7-10 who were identified with speech and language disabilities (Rousseau & Tam, 1991) and five Latino students in grade six who had speech and languages deficits and one who also had a learning disability (Rousseau

& Tam, 1993). Study duration ranged from three times weekly with 22-33 total sessions (Berry 2010) to five times weekly (Rousseau & Tam, 1993). Total study duration was not described by Rousseau and Tam (1991, 1993) nor was weekly implementation in the study by Rousseau and Tam (1991).

All studies assessed fluency using CBM-R and WCPM plus EPM. In two studies, comprehension was also assessed using MAZE (Berry, 2010) and eight literal passage comprehension questions (Rousseau & Tam, 1993). In the study by Berry (2010), results across participants and dependent measures indicated live model previewing did not produce benefits beyond repeated readings. According to visual analysis, repeated readings improved generalized fluency and comprehension outcomes for three participants but performances weakened for two participants. The dual criterion method indicated generalized fluency gains were only attributable to the intervention for one participant, however. Visual analysis for Rousseau and Tam (1991) indicated that listening to a passage read aloud produced higher WCPM compared to silent previewing; three participants either regressed or did not improve in the silent reading condition. In the study by Rousseau and Tam (1993), visual analysis of results across participants indicated the combination of key word instruction and listen passage preview produced the greatest gains in both fluency and comprehension whereas key word instruction was superior to listen passage preview when separated.

All studies were strengthened by high inter-observer agreement and implementation fidelity. In addition, Berry (2010) included measures of generalized gains to unpracticed fluency and comprehension passages that were assessed weekly by

the dual criterion method. Across studies, however, the use of grade-level passages during intervention and assessment was not assessed for suitability with participants. Also, in the studies by Berry (2010) and Rousseau and Tam (1991), counterintuitive results were observed for participants who regressed on fluency measures during intervention. It should also be noted that intervention selection criteria and atypical CBM-R scoring procedures likely affected outcome interpretability. In Berry (2010), repeated reading without live model previewing was visually superior for only one student; nevertheless, this condition was selected for all participants in extended phases due to indistinguishable effects between interventions and subsequent selection of the least intensive intervention. Rousseau and Tam (1991) also did not score CBM-R reading errors related to suffixes such as -ing, -ed, or -s. Rousseau and Tam (1993) also omitted all articles, personal pronouns, frequently used prepositions, and conjunctions from the tally of total words read during timed readings. Interpretations of intervention effectiveness for these studies must therefore be made cautiously, especially given the lack of generalization or maintenance probes.

Taken together, studies in Group Three were of stronger methodological quality than Group One studies but present several threats to internal validity that were less prominent in Group Two studies. Within Group Three, only one study (Malloy et al., 2007) assessed maintenance of effects, and three studies deviated from typical procedures for either error correction (Dufrene & Warzak, 2007) or CBM-R scoring (Rousseau & Tam, 1991, 1993). Three studies in Group Three also did not verify the appropriate use of grade-level instructional passages with participants (Berry, 2010; Rousseau & Tam,

1991, 1993). Group Three studies presented generally positive results across participants, but several limitations warrant cautious interpretation of intervention effectiveness.

Discussion

The purpose of this review was to identify the state of knowledge regarding the use and effectiveness of fluency interventions with ELLs. As a secondary consideration, whether vocabulary instruction augmented fluency outcomes was also examined. In this section, outcomes and methodological considerations of the literature are synthesized. Participant characteristics and measurement considerations are also addressed. Limitations of the review and future research directions are provided.

Outcomes of Fluency Strategies

The variability in methodological quality across studies prohibits firm conclusions regarding outcomes of fluency strategies with ELLs. Specifically, Group One studies examined single fluency strategies and were of lowest methodological quality. The effectiveness of individual fluency strategies with ELLs therefore remains inconclusive. Within this group, only one study (Landa, 2009) did not possess significant threats to internal validity. Other Group One studies included limited intervention and baseline descriptions, lack of fidelity data, and unusual scoring procedures that restricted interpretability. In contrast, Group Two examined multiple fluency strategies within intervention packages and were of comparatively stronger methodological quality to Groups One and Three. Group Two studies demonstrated sufficient implementation fidelity, condition descriptions, and standard scoring procedures. These studies examined combined strategies, however, and preclude inferences regarding specific strategies with

ELLs. Last, studies in Group Three compared either different fluency strategies or the same fluency strategy modified in different ways. Outcomes of Group Three studies allow interpretations of comparable strategy effectiveness, but persistent methodological issues warrant cautious interpretation. Specifically, atypical CBM-R scoring procedures noted in Group One similarly occurred in Group Three studies (Rousseau & Tam, 1991, 1993).

While methodological limitations must be recognized, studies in this review converge on similar positive effects for fluency strategies with ELLs across fluency measures. Single and combined fluency strategies (Groups One and Two) produced fluency gains for all participants. When individual fluency strategies were compared (Group Three), participant fluency improved with at least one strategy except for the study by Berry (2010), where two participants' fluency scores deteriorated. Across single subject design studies, generalization and maintenance fluency measures remained above baselines and within intervention levels. Pre-posttest fluency assessments in experimental and quasi-experimental studies produced statistically significant gains.

In addition to indications of general effectiveness, outcomes of Group Three studies also highlighted the comparative effectiveness of fluency strategies. Across Group Three studies, when participants completed contingent reward conditions (Dufrene & Warzak, 2007; Malloy et al., 2007), these conditions were never selected as effective strategies either alone or in combination. Similarly, the impact of modeling across studies (in the form of listen passage preview) appears limited. While listen passage preview, either alone or combined, occurred in all Group Three studies, modeling mostly

improved outcomes when combined with vocabulary instruction and when compared to vocabulary instruction in isolation (Rousseau & Tam, 1991, 1993) or listen passage preview in isolation (Rousseau & Tam, 1993). Modeling did not improve repeated reading outcomes in the study by Berry (2010) and was not selected as a strategy for any participant either alone or combined in the study by Malloy et al. (2007). While modeling improved repeated reading performance beyond each individual strategy in the study by Dufrene and Warzak (2007), this outcome represents only one participant. Overall, the impact of modeling appears to diminish when more intensive reading fluency strategies such as repeated reading are used with ELLs.

While models of fluent reading are likely beneficial for various reasons, the diminutive effects of both modeling and contingent reward conditions on the fluency of ELLs suggests more intensive instruction is required. To this end, outcomes from this review indicate that vocabulary instruction is an important instructional component for improving fluency results with ELLs. When fluency strategies with and without vocabulary support were compared in Group Three, vocabulary instruction enhanced fluency outcomes for all participants in the study by Rousseau and Tam (1993). Similarly, vocabulary instruction improved fluency outcomes for more than half of participants in the study by Malloy et al. (2007). Results from this study also indicated that equal numbers of participants benefitted from vocabulary instruction in isolation ($n = 2$) as benefitted from repeated reading in isolation ($n = 2$). Vocabulary instruction in isolation was not effective, however, in the study by Rousseau and Tam (1991) but was more effective than modeling in isolation in the study by Rousseau and Tam (1993).

Overall, vocabulary instruction in studies in this review improved fluency outcomes for ELLs although it was generally most effective when combined with a fluency-specific strategy.

While outcomes across studies indicate that fluency strategies improve the reading fluency of ELLs, it should be noted that interpretations of strategy effectiveness, particularly in the comparative designs of Group Three, were based on fluency measures that did not incorporate comprehension. Whether comprehension simultaneously occurred and improved when reading fluency gains were observed merits closer attention.

In this review, a total of nine studies assessed comprehension in addition to fluency. When assessed, fluency strategies improved comprehension as measured by literal comprehension questions and MAZE assessments. Comprehension gains across studies were comparatively smaller than fluency gains, however. Similarly, maintenance and generalization assessments of comprehension were more variable compared to fluency outcomes. While vocabulary instruction enhanced fluency and comprehension outcomes for all participants in the study by Rousseau and Tam (1993), comprehension outcomes remained variable with little differentiation from baseline in the study by Malloy et al. (2007).

The extent to which reading fluency and comprehension gains were observed in this review merits consideration of how comprehension was assessed across studies. Of the nine studies that assessed comprehension, six used literal comprehension questions and three used MAZE assessments. Given the alignment between literal comprehension questions and passage texts, these questions were possibly better suited than MAZE

assessments to reflect whether and to what extent participants understood what they read. Important to this assumption, however, is that comprehension questions only covered material that was actually read by the participant. For example, if a participant read half a passage but answered questions about the passage ending, his or her comprehension score could mask passage understanding. It is also important to examine whether MAZE scores reflected passage comprehension or sentence-level comprehension. While it is possible that literal comprehension questions might have underrepresented students' comprehension if passages were never fully read, it is also possible that MAZE scores overrepresented students' comprehension if they better reflected sentence-level comprehension. No studies in this review described administration of comprehension questions or MAZE assessments. Thus, the extent to which such discrepancies contributed to variable comprehension outcomes in this review remains unknown.

Characteristics of ELLs

Given the inherent diversity of ELLs and the relatively small research base on ELL reading instruction, it is important to identify characteristics of participants included in the literature thus far. In this review, it is notable that the majority of studies (11) had participants whose native language was Spanish. While many ELLs in the United States are native Spanish speakers, others represent a myriad of additional home languages. In addition, this observation is particularly important because Spanish and English use the Roman alphabet and share key language-based similarities not typical of other language combinations. It is therefore possible that differences between English and other non-Spanish home languages may differentially impact English reading development among

ELLs. For these reasons, inferences from this review are primarily relevant for Spanish-speaking students with limited generalization to students from other language backgrounds.

It should also be noted that less than half of studies in this review provided measures of participants' English proficiency. While assessments of English proficiency are frequently incomprehensive (Jitendra & Rohena-Diaz, 1996), identifying English proficiency remains important to research to better understand its role in reading skill development for ELLs. It is also notable that no studies included additional participant information potentially relevant to study outcomes. Factors such as the number of years in the United States, measures of native language proficiency, reading motivation, acculturation, or prior educational experiences were not identified but remain potentially relevant to fluency outcomes. For example, time in the United States might enhance knowledge of English vocabulary and improve background knowledge important to text interpretation. Similarly, whether reading fluency was attained in a native language (based on prior educational experiences) might support reading fluency in English. From this review, the impact of such participant characteristics on observed outcomes remains unknown.

Measurement Considerations

The types of passages used to assess reading fluency also merit consideration in this review. Six studies included fluency generalization measures; half of these studies used high-overlap passages (compared to instructional passages) and half were low-overlap. In addition, only one single-subject study measured direct effects of fluency

strategies using unrehearsed oral reading fluency passages (Kupzyk et al., 2011). All other single-subject studies used CBM-R scores from final readings of the session's instructional passage.

Given that fluency instruction often involves repeated reading or exposure to the same text, a challenge of fluency instruction is to ensure that improved reading also occurs on novel texts. When using a fluency strategy such as repeated reading, it is anticipated that students' reading performances improve given successive opportunities to re-read a passage. By using participants' scores from their third or fourth reading trials to determine fluency gains, inferences about the utility of repeated reading to improve reading fluency on novel passages is restricted. In this review, the majority of measures that assessed direct effects of fluency strategies did not extend beyond instructional passages. In addition, half of studies that assessed generalization used high-overlap passages that did not reflect the target behavior of increasing reading fluency on novel, unrelated texts. For this reason, the educational relevance of fluency outcomes in this review is less interpretable.

A related measurement consideration pertains to the use of leveled instructional texts during fluency instruction with ELLs. Four studies used instructional texts at participants' instructional levels (Begeny et al., 2012; Dufrene & Warzak, 2007; Landa, 2009; Tam et al., 2006); five studies used grade-level texts without specifying alignment with students' reading abilities (Albers & Hoffman, 2012; Berry, 2010; Kupzyk et al., 2011; Malloy et al., 2007; O'Donnell et al., 2003). One study included instructional

passages at or slightly above students' reading levels (Ross & Begeny, 2011), and three studies did not provide passage details (Almaguer, 2005; Rousseau & Tam, 1991, 1993).

The readability of instructional texts with ELLs merits consideration given students' comparatively limited English vocabularies and background knowledge. To the extent that readability formulas such as Flesch-Kincaid (Kincaid, Fishburne, Rogers, & Chissom, 1975) incorporate textual components such as total words, sentences, and syllables in calculating comprehension difficulty, it is possible that grade-level texts may be decodable but not necessarily comprehensible for ELLs. The preliminary examination of vocabulary instruction in this review further suggests that comprehension outcomes with ELLs are still variable despite additional vocabulary instruction. Thus, while no studies measured instructional passages for vocabulary difficulty, it remains possible that language-related text features such as syntax or orthographic elements such as punctuation are relevant considerations to fluency instruction with ELLs.

Review Limitations

Several limitations of this review should be noted. First, by attempting to identify easily implemented fluency strategies, no fluency interventions in languages other than English were included. Given that English reading proficiency is improved by taking advantage of native language proficiency (August & Shanahan, 2006) the absence of these studies is an important limitation. In addition, vocabulary instruction needed to co-occur with reading fluency instruction for inclusion in this review. Whether vocabulary-only instruction improves ELL reading fluency should be examined, particularly if reviewed vocabulary instruction was too brief to facilitate robust reading fluency and

comprehension gains. Last, multi-component studies that use a fluency strategy were also not included. While the effects of fluency instruction on dependent variables cannot be distinguished in such studies, they may provide insight about improving reading fluency outcomes with ELLs.

Implications for Research

Several implications for research emerge based on studies included in this review. In broad terms, the methodological weaknesses of several studies indicate that researchers should describe all intervention and control conditions in detail. The use of standardized CBM-R scoring procedures should be used across studies to compare results, and detailed participant description related to English proficiency levels and relevant background information should be provided. To further strengthen the research base, future research should include ELLs with home languages other than Spanish to understand whether results are similar for participants from different language backgrounds.

Specific suggestions for future research are also warranted based on the outcomes, characteristics, and concerns noted across studies. Results suggest that future research should focus on variations of intensive reading fluency strategies such as repeated reading and include vocabulary instruction in combination. Exploration of different types of vocabulary instruction is also warranted. In this review, vocabulary instruction was generally brief and focused on reviewing definitions in direct, explicit ways. Whether vocabulary instruction that builds background knowledge and integrates multiple

exposures to words and their meanings promotes greater fluency with ELLs should be examined (Barr, Eslami, & Joshi, 2011; Beck, McKeown, & Kucan, 2002).

Concerns related to the measurement of fluency in this review also highlight future research directions. In order to examine whether fluency strategies promote automatic and accurate reading of novel texts, generalization measures should not include high-overlap passages with instructional passages. Future studies should include high-overlap passages to infer direct effects of fluency strategies, but unrelated passages should be used to assess whether fluency gains generalize to relevant reading tasks for ELLs.

In order to accurately assess comprehension gains, comprehension assessments should directly align with text read by students. After completing CBM-R, students should read the rest of the passage and respond to comprehension questions that reflect key aspects of the text. To this end, multiple comprehension questions should be included to prevent ceiling effects that limit outcome interpretability. The difficulty of vocabulary in passages should be considered in addition to determining instructional reading levels. Any language features possibly unfamiliar to ELLs should be explicitly taught prior to fluency assessments. In addition, inclusion of comprehension outcomes in the decision-making criteria used to assess fluency outcomes with ELLs merits exploration. The extent to which CBM-R gains align with comprehension gains for ELLs should influence how fluency strategies are selected within study designs such as BEAs.

Different types of reading fluency instruction not included in this review also merit future consideration. For example, whether wide reading is more effective than

repeated reading of the same text should be explored with ELLs. The relationship between fluency and reading expression/prosody and whether pronunciation errors affect comprehension with ELLs merit examination as well. Possible moderators of reading fluency with ELLs such as English proficiency or reading sub-skills related to phonological awareness could also provide instructionally relevant information.

In conclusion, this review examined outcomes of reading fluency instruction with ELLs and the contribution of vocabulary instruction to fluency and comprehension outcomes. To date, the reading proficiency of ELLs typically lags behind native English-speaking peers and minimal research has examined instruction on higher-level reading skills with ELLs in general. Results of this review suggest that reading fluency instruction is similarly effective with ELLs as for native English speakers. In addition, vocabulary instruction may further improve fluency and comprehension outcomes for these students. Combined, these findings inform the following research question addressed in this study: Does repeated reading with vocabulary instruction improve the reading fluency and comprehension of ELLs beyond repeated reading in isolation?

Table 1
Summary of Participant Characteristics by Study Grouping

| Citation | Sample size, grade, location | Home languages | English proficiency | English reading ability | Disability | Additional participant information |
|--|--|-----------------------|---|--|---|--|
| Group one studies: single fluency strategies | | | | | | |
| Almaguer (2005) | <i>N</i> = 80 3 rd : 80 Texas, Colonia | Spanish: <i>N</i> =80 | -Language Assessment Scales (LAS) Majority = “Limited English Proficient” | Not Described “Struggling school” | Not Described | Transitional Bilingual Program, English-only services at grade 2 |
| 43 Landa (2009) | <i>N</i> = 4 3 rd : <i>n</i> =2 4 th : <i>n</i> =1 5 th : <i>n</i> =1 Florida, Miami-Dade | Spanish: <i>N</i> =4 | -Oral Language Proficiency Scale (1-5) Level 3: <i>n</i> =3 Level 4: <i>n</i> =1 | -Diagnostic Reading Assessments -Dynamic Indicators of Basic Early Literacy Skills -Woodcock- Johnson III Diagnostic Reading Battery At least one year below grade level: <i>N</i> =4 | Specific Learning Disability: <i>N</i> =4 | All participants received ELL services |
| O’Donnell, Weber, & McLaughlin (2003) | <i>N</i> = 1 5 th : <i>N</i> =1 Urban Washington State | Chinese: <i>N</i> =1 | -Teacher referral Difficulty “thinking, processing, & comprehending in English”: <i>N</i> =1 | -Statewide Reading Achievement Test -Teacher concerns 13 th percentile + English syntax & comprehension of text: <i>N</i> =1 | None | Little English spoken at homes |

Table 1 *continued*
Summary of Participant Characteristics by Study Grouping

| Citation | Sample size, grade, location | Home languages | English proficiency | English reading ability | Disability | Additional participant information |
|---|---|---|---|--|---|---|
| Group one studies: single fluency strategies | | | | | | |
| Albers & Hoffman (2012) | <i>N</i> = 3 3 rd : <i>n</i> =3 Midwestern metro | Spanish : <i>N</i> =3 | Assessing Comprehension & Communication in English state-to-state for ELLs (ACCESS): Level 3 (developing): <i>N</i> = 3 | Frustrational level on 3 rd grade reading material : < 70 WCPM: <i>N</i> =3 | None | Bilingual classroom |
| 44 | | | | | | |
| Group two studies: combined fluency strategies | | | | | | |
| Kupzyk, McCurdy, Hostadter, & Berger (2011) | <i>N</i> = 2 2 nd : <i>n</i> =1 3 rd : <i>n</i> =1 Midwest | Spanish : <i>N</i> =2 | Not Described | -Fall AIMSweb normative data: 32 nd percentile: 2 nd gr. participant 48 th percentile: 3 rd gr. participant | None | Parent: low English reading proficiency |
| Tam, Heward, and Heng (2006) | <i>N</i> = 5 3 rd : <i>n</i> =3 4 th : <i>n</i> =1 5 th : <i>n</i> =1 | Spanish: <i>n</i> =2 Amharic: <i>n</i> =2 Khmer : <i>n</i> =1 | District ELL Assessment Level 2: <i>N</i> =5 | Brigance Diagnostic Inventory of Basic Skills (Oral Reading): Primer level: <i>n</i> =4 1 st gr level: <i>n</i> =1 | Specific Learning Disability: <i>n</i> =2 Developmental Disability: <i>n</i> =1 None: <i>n</i> =2 | All participants received ELL services |

Table 1 *continued*
 Summary of Participant Characteristics by Study Grouping

| Citation | Sample size, grade, location | Home languages | English proficiency | English reading ability | Disability | Additional participant information |
|---|---|-----------------------|--|---|--------------------------------|--|
| Group two: combined fluency strategies | | | | | | |
| Begeny, Ross, Greene, Mitchell, & Whitehouse (2012) | <i>N</i> = 21 2 nd : <i>N</i> =21 Rural Southeast | Spanish: <i>N</i> =21 | Received ELL services: <i>N</i> =21 | Gray Oral Reading Test: Below Average Fluency and/or Comprehension: <i>N</i> =21 | Not Described (unavailable) | 4 participants in HELPS condition previously retained |
| 45 Ross & Begeny (2011) | <i>N</i> = 5 2 nd : <i>N</i> =5 Rural Southeast | Spanish: <i>N</i> =5 | Received ELL services: <i>N</i> =5 | Dynamic Indicators of Basic Early Literacy Skills: “At-risk” < 67 WCPM: <i>n</i> =4 Teacher concern: <i>n</i> =1 | None | - |
| Malloy, Gilberston, & Maxfield (2007) | <i>N</i> = 13 1 st : <i>n</i> =5 3 rd : <i>n</i> =2 4 th : <i>n</i> =3 5 th : <i>n</i> =3 Rural West | Spanish: <i>N</i> =13 | IDEA Oral Language Proficiency Test: Upper English fluency limited proficiency range: <i>N</i> =13 | -CBM-R -Reading grades “At-risk”(< 16% of respective class): <i>N</i> =13 + Reading grade of ‘D’ or lower: <i>N</i> =13 | None | Participants no longer qualified for ELL service |

Table 1 *continued*
 Summary of Participant Characteristics by Study Grouping

| Citation | Sample size, grade, location | Home languages | English proficiency | English reading ability | Disability | Additional participant information |
|--|--|----------------------|--|---|---|---|
| Group three studies: compared fluency strategies | | | | | | |
| Dufrene & Warzak (2007) | <i>N</i> = 1 3 rd : <i>N</i> =1 Midwest | Spanish: <i>N</i> =1 | Not Described | -Teacher referral -Reading Level Difficulty reading connected text & comprehension + 1 st gr. reading level: <i>N</i> =1 | None | Bilingual school |
| 46 | | | | | | |
| Berry (2010) | <i>N</i> = 5 3 rd : <i>N</i> =5 Urban Midwest | Spanish: <i>N</i> =5 | Teacher Recommendation: Sufficient English proficiency for intervention: <i>N</i> =5 | -CBM-R “At-risk” or “Some risk” but > 30 WCPM: <i>N</i> =5 | Specific Learning Disability: <i>n</i> =1 None: <i>n</i> =4 | Bilingual school |
| Rousseau & Tam (1991) | <i>N</i> = 8 7-10 yrs age: <i>N</i> =8 Urban | Spanish: <i>N</i> =8 | -Goldman-Fristoe test of Articulation - Clinical Clinical Evaluation of Language Fundamentals- Revised Speech & language impairments in English and Spanish: <i>N</i> =8 | Degrees of Reading Power Below 3 rd gr. Average: <i>N</i> =8 | Speech & Language Disabilities: <i>N</i> =8 | Individual Education Plan goals all language-based |

Table 1 *continued*
Summary of Participant Characteristics by Study Grouping

| Citation | Sample size, grade, location | Home languages | English proficiency | English reading ability | Disability | Additional participant information |
|--|--|----------------------|--|---|--|--|
| Group three studies: compared fluency strategies | | | | | | |
| Rousseau & Tam (1993) | <i>N</i> = 5 6 th : <i>N</i> =5 Urban | Spanish: <i>N</i> =5 | -Goldman-Fristoe test of Articulation - Clinical Clinical Evaluation of Language Fundamentals- Revised Speech & language impairments in English and Spanish: <i>N</i> =5 | -Degrees of Reading Power -Brigance Diagnostic Comprehensive Inventory -Kaufman Test of Educational Achievement -Woodcock-Johnson Psycho-Educational Battery-Revised 3 rd -4 th gr. reading levels: <i>N</i> =5 | Speech & Language Disabilities: <i>n</i> =4 Speech & Language Disability + Specific Learning Disability: <i>n</i> =1 | - |

Table 2
Summary of Study Design Variables

| Citation | Study design | Fluency strategies | Vocabulary component | Dependent variables | Generalization & maintenance | Intervention passages |
|--|---|----------------------------|--------------------------|--|--|--|
| Group one studies: single fluency strategies | | | | | | |
| Almaguer (2005) | Quasi-experimental, control group | Dyad Reading | None | <i>Fluency:</i> CRAB (CBM-R) <i>Comprehension:</i> CRAB (literal questions) | <i>Generalization:</i> None <i>Maintenance:</i> None | -No leveled information -Readable by higher reader within pair |
| Landa (2009) 48 | Multiple probe baseline across participants | Repeated Reading (3 times) | Key Words: -1-5 words | <i>Fluency:</i> CBM-R <i>Comprehension:</i> 5 literal questions | <i>Generalization:</i> -80% high-overlap passages -CBM-R, responses -Administered 28% of sessions <i>Maintenance:</i> -passages from beginning sessions -2, 4, & 6 weeks post-intervention | -Instructional-level -from, Houghton-Mifflin series -Fry Readability Graph |
| O'Donnell, Weber, & McLaughlin (2003) | ABAB reversal | Listen Passage Preview | Key Words | <i>Fluency:</i> CBM-R <i>Comprehension:</i> 5 literal questions | <i>Generalization:</i> None <i>Maintenance:</i> - 3 previously used passages -6 months post-intervention | -Grade-level -from, Instructional Fair Reading Comprehension Booklet |

Table 2 *continued*
 Summary of Study Design Variables

| Citation | Study design | Fluency strategies | Vocabulary component | Dependent variables | Generalization & maintenance | Intervention passages |
|--|---------------------------------------|---|-----------------------------------|--|--|--|
| Group one studies: single fluency strategies | | | | | | |
| Albers & Hoffman (2012) | Multiple baseline across participants | Self-Graphing | Folding-In Technique: -3 words | <i>Fluency:</i> CBM-R <i>Comprehension:</i> MAZE <i>Sight Words:</i> Percent acquisition of total unknown words | <i>Generalization:</i> None <i>Maintenance:</i> None | -Grade-level -from, AIMSweb |
| 49 | | | | | | |
| Group two studies: combined fluency strategies | | | | | | |
| Kupzyk, McCurdy, Hostadter, & Berger (2011) | Multiple baseline across participants | Listen Passage Preview + Repeated Reading (4 times) + Self-graphing | None | <i>Fluency:</i> CBM-R, weekly growth rate <i>Social Validity:</i> -Intervention Rating Profile -15 (+ child version) | <i>Generalization:</i> -AIMSweb low-overlap passages -Weekly -Median score from 3 passages <i>Maintenance:</i> -AIMSweb low-overlap passages -6 & 9 weeks post-interventio | -Grade-level -from, Pearson & St Louis University |

Table 2 *continued*
 Summary of Study Design Variables

| Citation | Study design | Fluency strategies | Vocabulary component | Dependent variables | Generalization & maintenance | Intervention passages |
|---|---|--|--------------------------|--|--|--|
| Group two studies: combined fluency strategies | | | | | | |
| Tam, Heward, and Heng (2006) | Multiple baseline across participants | Repeated Reading (4 times) + Self-graphing <i>Condition 1:</i> New passages per session <i>Condition 2:</i> One passage, fluency criterion | Key Words: -5-6 words | <i>Fluency:</i> CBM-R <i>Comprehension:</i> 5 literal questions | <i>Generalization:</i> -new passage -Read silently -CBM-R, responses <i>Maintenance:</i> -Random session passages -WCPM, responses -immediately post-intervention | -Instructional + Grade-level -Flesch-Kincaid readability |
| 50 | | | | | | |
| Begeny, Ross, Greene, Mitchell, & Whitehouse (2012) | Pretest-Posttest Control Group Comparison | Repeated Reading (3 times) + Modeling + Phrase Drill error correction + Self-graphing | None | <i>Fluency:</i> GORT (CBM-R) <i>Comprehension:</i> GORT (5 literal questions) | <i>Generalization:</i> None <i>Maintenance:</i> None | -Instructional-level -from, DIBELS -Spache readability |

Table 2 *continued*
 Summary of Study Design Variables

| Citation | Study design | Fluency strategies | Vocabulary component | Dependent variables | Generalization & maintenance | Intervention passages |
|--|-----------------------------|---|--|--|---|---|
| Group two studies: combined fluency strategies | | | | | | |
| Ross & Begeny (2011) | Alternating Treatments | Listen Passage Preview + Repeated Reading (4 times) + Phrase Drill error correction + Retell | Key Words: -3 words | <i>Fluency:</i> TOWRE (CBM-R), retention score | <i>Generalization:</i> None <i>Maintenance:</i> None | -Instructional-level at or slightly above reading level -from, DIBELS -Spache readability |
| 51 | | | | | | |
| Group three studies: compared fluency strategies | | | | | | |
| Malloy, Gilberston, & Maxfield (2007) | Brief Experimental Analysis | Contingent Reward Listen Passage Preview Repeated Reading (3 times) | Key Words: -5 words Incremental Rehearsal: -5 words | <i>Fluency:</i> CBM-R <i>Comprehension:</i> MAZE | <i>Generalization:</i> -80-91% high-overlap -every session <i>Maintenance:</i> None | -Grade-level -from, randomly drawn unused grade-level reading texts -Spache readability |
| Dufrene & Warzak (2007) | Brief Experimental Analysis | Listen Passage Preview Repeated Reading (3 times) Contingent Reward Listen Passage Preview + Repeated Reading | None | <i>Fluency:</i> CBM-R <i>Social Validity:</i> Intervention Rating Profile | <i>Generalization:</i> -High-overlap -Every session <i>Maintenance:</i> None | -Instructional-level -from, Pearson Basal Series |

Table 2 *continued*
 Summary of Study Design Variables

| Citation | Study design | Fluency strategies | Vocabulary component | Dependent variables | Generalization & maintenance | Intervention passages |
|--|------------------------|---|----------------------------|--|---|--|
| Group three studies: compared fluency strategies | | | | | | |
| Berry (2010) | Alternating Treatments | Repeated Reading (4 times) Repeated Reading + Listen Passage Preview | None | <i>Fluency:</i> CBM-R <i>Comprehension:</i> MAZE <i>Social Validity:</i> Survey | <i>Generalization:</i> -Low-overlap -Once weekly -CBM-R, MAZE <i>Maintenance:</i> None | -Grade-level -from, Reading Fluency by Jamestown Education |
| Rousseau & Tam (1991) | Alternating Treatments | Listen Passage Preview (silent) + Key Words Listen Passage Preview (oral) + Key Words | Key Words -10 words | <i>Fluency:</i> CBM-R | <i>Generalization:</i> None <i>Maintenance:</i> None | -No leveled information -from, school district's special education curriculum |
| Rousseau & Tam (1993) | Alternating Treatments | Listen Passage Preview Key Words Listen Passage Preview + Key Words | Key Words: -10-12 words | <i>Fluency:</i> CBM-R <i>Comprehension:</i> 8 literal questions | <i>Generalization:</i> None <i>Maintenance:</i> None | -No leveled information -from, school district's special education curriculum |

Chapter 3

METHOD

Research Design

In this study, a within-subjects group design was used to compare two instructional conditions: repeated reading (RR) and repeated reading with vocabulary instruction (RRV). One within-subjects factor was used: type of instruction (RR and RRV). To control for order effects, order of conditions were counterbalanced across participants: half of participants completed RR first and half completed RRV first. To control for instrument effects, instructional passages were counter-balanced within conditions: half of participants used Passage A with RR and Passage B with RRV; the other half used Passage B with RR, and Passage A with RRV. All participants completed one session of each instructional condition (See Figure 1 for a sequence of study procedures).

In a within-subjects design, each participant completes every instructional condition and serves as his/her own control (Gliner, Morgan, & Harmon, 2002). In this way, within-subjects designs control for between-subject variability and increase power. Brief instruction in reading fluency and vocabulary are compatible with this design because immediate instructional effects are typically observed, yet carryover effects are not anticipated. For example, improvement on the instructional passage used in repeated reading is usually observed (Therrien, 2004); however, it is not anticipated that repeated reading will, after one session, affect how participants read unrelated passages.

Similarly, one-time vocabulary instruction for several words will not likely affect how other words are learned, yet specific gains on instructional words are observable (Coyne, McCoach, Loftus, Zipoli Jr., & Kapp, 2009).

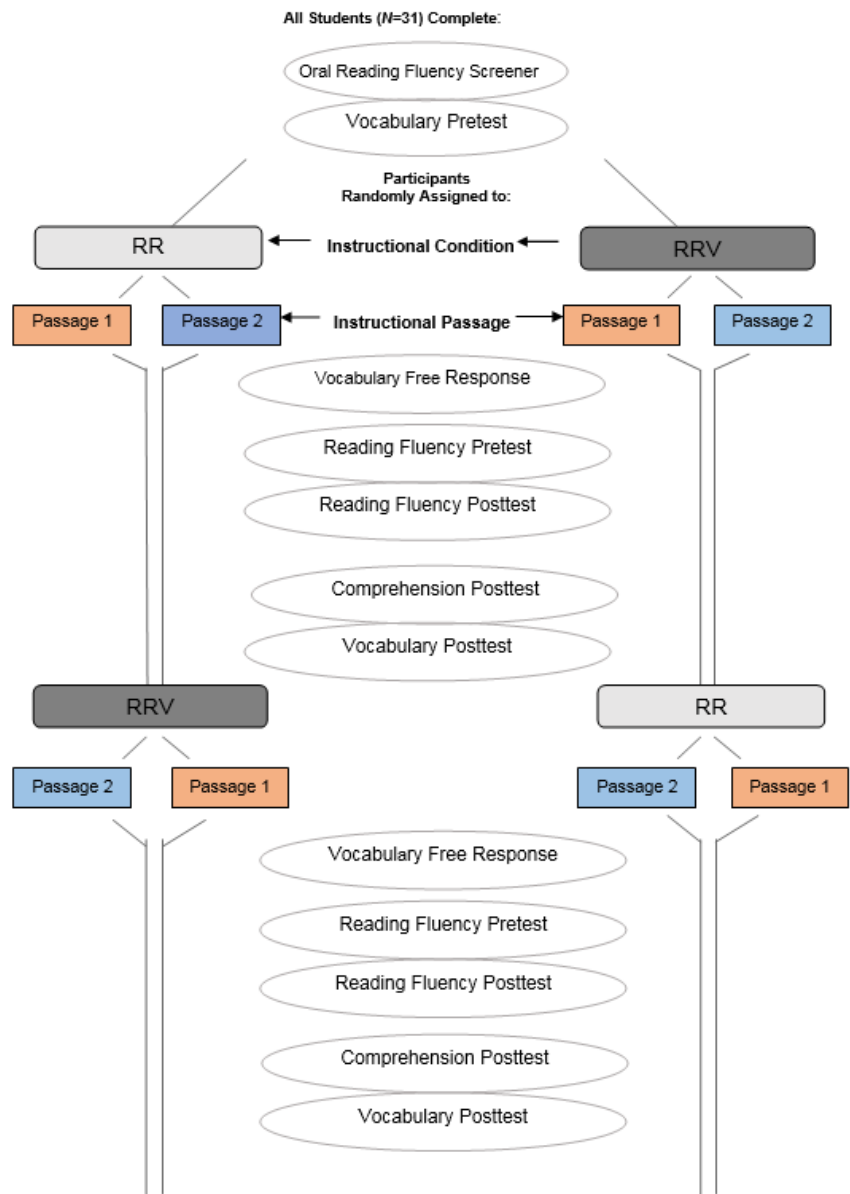


Figure 1. Study Design and Procedures

Setting and Participants

Two urban elementary schools in the Upper Midwest were included in this study. Each school had three third grade classrooms and participants were included from all classrooms. School 1 served 404 students in Kindergarten through fourth grade. Of these students, 31% were Caucasian, 51% were Latino/Hispanic, 14% were African American, and 4% were other ethnicities. A total of 35% of students received ELL services, and 22% received special education services. Approximately 68% of students received free or reduced price lunch. During the prior academic year (2012-2013), 47.6% of students at School 1 did not meet proficiency standards in reading (Minnesota Department of Education [MDE], 2013).

School 2 served 409 students in Kindergarten through fourth grade. Of these students, 41% were Caucasian, 43% were Latino/Hispanic, 12% were African American, and 4% were other ethnicities. A total of 36% of students received ELL services, and 10% received special education services. Approximately 59% of students in School 2 received free or reduced price lunch. During the prior academic year (2012-2013), 26.7% of students at School 2 did not meet proficiency standards in reading (MDE, 2013).

A power analysis was conducted using GPower (Erdfelder, Faul, & Buchner, 1996) to identify the number of study participants needed for sufficient power to obtain statistically significant results. Assuming a moderate effect size ($d = .25$), an alpha level of .05, and a moderate correlation among two repeated measures ($r = .50$), a sample size of 24 was required to achieve power of .80.

To meet inclusion criteria for this study, participants needed to be in third grade and have a native language other than English. Based on school district criteria, students needed to (a) receive ELL services, (b) qualify for ELL services, or (c) have previously received ELL services but no longer qualify. In addition, students needed to perform at or below the third-grade spring oral reading fluency benchmark provided by the *Formative Assessment System for Teachers* (FAST; Christ, et al., 2014). Students who read at or below 138 words correct per minute were eligible for study participation. Combined, these inclusion criteria were intended to identify students who would benefit from additional instruction or monitoring of English language development and oral reading fluency (Fuchs and Fuchs, 2007; Gersten & Baker, 2000).

A total of 31 participants completed the study. Thirty participants (97%) had a native language of Spanish and were Latino/Hispanic and one participant (3%) had a native language of Cambodian and identified as Cambodian. Twenty-six participants (84%) received ELL services, four participants (13%) qualified for ELL services but waived them, and one participant (3%) previously received ELL services but no longer qualified. Seven participants (23%) received special education services – four participants (13%) were identified with learning disabilities in reading, one (3%) with Autism, and two (6%) with speech and language impairments. Thirty participants (97%) received free or reduced priced lunch. Approximately 90% of Spanish-speaking participants ($n = 27$) read at or below the fifth percentile on a third-grade Spanish reading passage (range = zero percentile to 15th percentile). The average age of participants was 9 years and 1 month and ranged from 8 years and 9 months to 9 years and 8 months.

Measures and Materials

Dependent variables. Dependent variables in this study included: (1) oral reading fluency, (2) literal, inferential, and contextual reading comprehension, and (3) vocabulary knowledge. All variables were assessed using posttest assessments; oral reading fluency and vocabulary knowledge were also assessed using pretest or screening assessments. Dependent variables were assessed with the following measures:

Curriculum-based Measure of Oral Reading Fluency (CBM-R; Deno, 1985).

CBM-R was used to measure participants' oral reading fluency. It was used to screen participants for study eligibility, assess participants' Spanish reading skills, and measure growth from pretest to posttest within instructional conditions.

CBM-R is an individually administered assessment used to repeatedly measure student growth towards long-range instructional goals (Deno, 1985). Students read aloud for 1 min from grade-equivalent passages and the examiner tallies the number of errors and words read correctly. This score reflects the accuracy and rate of oral reading and is commonly used as a measure of oral reading fluency (Fuchs, Fuchs, Hosp, & Jenkins, 2001).

Substantial research has indicated CBM-R to have strong psychometric evidence with native English speakers. For these students, CBM-R validity coefficients have ranged from $r = .72$ to $.91$ (Deno et al., 1982a; Wayman et al., 2007). Inter-rater reliability coefficients have been above $r = .99$ with test-retest reliability above $r = .90$ (Marston, 1989; Wayman et al., 2007). When used with elementary ELL students, CBM-R has produced criterion validity coefficients ranging from $r = .51$ to $.80$ and reliability

coefficients above .80 (Baker & Good, 1995). CBM-R has also demonstrated predictive validity with standardized assessments of general reading competency for ELL and non-ELL students, with correlations ranging from $r = .61$ to $.69$ for ELL students and $r = .57$ to $.71$ for non-ELL students (Wiley & Deno, 2005).

All CBM-R assessments in this study were based on FAST (Christ et al., 2014) oral reading fluency passages. FAST passages include progress monitoring passages for Grades 1-12 and screening passages for Grades 1-6 in English and Spanish. This study included two third-grade English progress- monitoring passages entitled *Clara* and *Cory and Mark* (see Appendix A). Three third-grade English screening passages entitled *Bob, Zach, and Linda; Tom; and Jeff* were also used, as was a third grade Spanish screening passage entitled *Ines*. All passages were original copies; English progress- monitoring passages also included five inserted study-specific vocabulary words.

Preliminary research indicates that FAST oral reading fluency passages have sufficient technical adequacy (Christ et al., 2014). For third grade passages, alternate form reliability coefficients have ranged from $r = .65$ to $.72$ and internal consistency coefficients have ranged from $.89$ to $.91$. Coefficients for inter-rater reliability have ranged from $r = .93$ to $.97$ and measures of concurrent validity with other types of oral reading fluency passages have been above $.95$. Concurrent validity coefficients with additional screening and benchmark assessments have ranged from $r = .78$ to $.81$, and measures of predictive validity with the same assessments have been $.91$ for non-FAST passages and between $r = .69$ and $.73$ for other screening and benchmark assessments.

In this study, CBM-R assessments were used during screening to identify participants. During screening, participants completed three CBM-R assessments using third-grade FAST screening passages. The median score was considered the overall screening score and compared to eligibility criteria. Median scores are not influenced by the occurrence of extremely high or low scores across passage readings. Thus, median scores reflect student performance while minimizing variability due to passage differences, measurement error, and individual performance differences (Fletcher, Denton, & Francis, 2005). In addition, CBM-R was used to assess participants' reading abilities in Spanish. This was completed at the end of RR conditions. Participants whose native language was Spanish completed one CBM-R assessment with a third grade FAST Spanish screening passage.

CBM-R was also used as a pre- and posttest to compare growth in oral reading fluency within and across instructional conditions (see Figure 1 for a sequence of study procedures). Participants completed one CBM-R assessment in the first and last repeated reading trials of each instructional condition as a pre- and posttest assessment. The same FAST passage was used at pretest, during repeated reading instruction, and at posttest. Passages included two third grade FAST progress-monitoring passages entitled *Clara* and *Cory and Mark*.

Two-Question Vocabulary Measure (TQVM; Kearns & Biemiller, 2011). The TQVM was used to assess participants' vocabulary knowledge of pre-taught vocabulary words (Nagy & Herman, 1987). The TQVM uses a specific questioning framework to assess vocabulary knowledge but requires vocabulary content (words and corresponding

questions) to be created. Using this framework, the researcher developed questions about each pre-taught vocabulary word (see *Procedures* section for additional development information and assessment details).

One form of the TQVM assessment was developed for screening and contained 20 questions; two additional forms were developed as posttests and contained 10 different questions drawn from the screening assessment (see Appendix A). During screening, the assessment indicated whether pre-taught vocabulary words were unknown to participants, and at posttest, whether words had become known in response to instruction or learned incidentally. The assessment occurred after CBM-R assessments during screening, and after comprehension questions at posttest.

Each TQVM assessment contained two questions for every included pre-taught vocabulary word. One question prompted a correct “yes” response and the other question a correct “no” response. “Yes” questions included one appropriate example of the pre-taught word and ‘no’ questions included incorrect examples of pre-taught words. For example, for the pre-taught word *raucous*, the “yes” question was, “Is a fire drill raucous?” and the “no” question was, “Is a library raucous?” Questions were read aloud and both questions and responses were typed on participants’ answer forms. All pre-taught vocabulary words were underlined and placed as close to the ends of questions as possible. Across TQVM assessments, question order was randomly determined, and questions pertaining to the same word were separated by at least one question that corresponded to a different word.

A preliminary validation study of the TQVM (Kearns & Biemiller, 2011) indicated an overall correlation of $r = .78$ between TQVM full raw scores across grades 1-3 and the Peabody Picture Word Vocabulary Test (PPVT; Dunn & Dunn, 1997). Study authors selected words from the PPVT and drafted TQVM questions to assess criterion validity. When mean scores were calculated for words assessed by the TQVM and the PPVT, the correlation for combined word scores across grades was $r = .88$. Statistically significant increases across grades K-2 were also observed for both the TQVM and the PPVT. TQVM scores were lower than scores on the PPVT, especially for younger students with the lowest vocabulary levels. An analysis of variance for the difference between the two measures was statistically significant for both grades and vocabulary levels (at $p < .01$). Overall, results from the preliminary validation study used different words from the current study, but suggest that when PPVT words were assessed using the TQVM framework, the TQVM reflected age norms for vocabulary knowledge established by the PPVT and was sensitive to differences in student vocabulary size and age.

Free response vocabulary questions. The researcher also developed two forms of free response vocabulary questions in addition to the TQVM screener (see Appendix A). These questions offered additional confirmation whether pre-taught vocabulary words on the TQVM were unknown to participants prior to instructional conditions. Free response vocabulary questions occurred at the beginning of Sessions 1 and 2 (see Figure 1 for a sequence of study procedures) and only addressed the pre-taught vocabulary words used per session. To do this, one form of questions was developed for each

instructional passage and included five pre-taught passage vocabulary words. During the assessment, participants verbally responded to the following prompt for each pre-taught word, “Can you tell me what (BLANK) means?” The assessment was untimed and participants’ responses were audio-recorded and transcribed verbatim. No additional information was provided to participants other than re-stating questions upon request.

The researcher developed an answer key for responses to free response vocabulary questions (see Appendix C). Participant responses were reviewed and examples of full, partial, and no credit were described. To receive full credit, responses needed to capture all relevant aspects of the definition correctly. Partial credit responses demonstrated either several relevant aspects or did not correctly interpret all aspects. Incorrect responses did not demonstrate any relevant aspects or incorrectly interpreted all aspects. All responses were scored independently of each other by the researcher. A total score was calculated by adding the number of points across all questions per form.

Literal, inferential, and contextual comprehension questions. Comprehension questions were developed by the researcher and reviewed by a discourse expert to reflect proximal comprehension assessments of each instructional passage (see Appendix A). One set of comprehension questions was developed per instructional passage (see *Procedures* section for description of causal analyses and passage balancing). Within each set, five questions addressed literal comprehension, five questions addressed inferential comprehension, and two questions addressed whether participants could use pre-taught vocabulary words to clarify sentence context. Questions were administered at posttest after participants completed each instructional condition.

Literal comprehension requires readers to retrieve information that is explicitly stated in a text (Carnine, Silbert, & Kame'enui, 2004). To measure literal comprehension, participants answered *who*, *what*, and *where* questions related to each instructional passage. For example, “*Who* said Cory could have a robot?” In contrast, inferential comprehension requires readers to connect information that is implicit in a text and to integrate information across clauses with appropriate background knowledge. To make a causal inference, readers must connect two clauses in which the first clause is necessary for the second clause to occur in the story (Trabasso & van den Broek, 1985). To measure inferential comprehension, participants responded to *why* and *how* questions designed to elicit causal inferences. For example, “*Why* did Cory still need more money?”

Literal and inferential questions reflected different story elements from each passage. The numbers of questions that addressed each story element were balanced across question sets for Passages A and B. Literal comprehension questions reflected understanding of story elements related to characters, actions, settings, and story details. Within question sets, literal comprehension questions included two action questions, one character question, one setting question, and one detail question. Conversely, inferential questions reflected story elements related to character goals, main actions, outcomes, and themes. Within question sets, inferential comprehension questions contained two main action questions, one goal question, one outcome question, and one theme question.

Question sets for Passages A and B were also balanced according to their inclusion and opportunity to use pre-taught vocabulary words. A pre-taught vocabulary

word occurred in the wording of one question from each set of inferential questions. For example, one question included the pre-taught word *replete* in the following way, “Why was there a crowd *replete* with friends and families?” In addition, correct answers to two inferential questions provided reasonable opportunities to express two additional pre-taught vocabulary terms within responses. To answer the question, “Why did Clara ask her friends to join her?” a reasonable response could include that Clara was *jittery*. Similarly, answers to one literal comprehension question per set also provided a logical opportunity to express a previewed vocabulary word. For the question “Where did the dancers wait before the show?” a correct response could include that they waited behind a *curtain*. In sum, a total of three vocabulary words per passage could be reasonably expressed within participant comprehension responses; however, their inclusion was not required to merit a correct response.

In addition to literal and inferential comprehension questions, two contextual comprehension questions were included per set to assess whether participants could use pre-taught vocabulary words to clarify sentence context. For these questions, participants explained the meaning of a passage sentence that included a pre-taught vocabulary word. The following question stem was used for each question: “What does it mean that (blank)?” Pre-taught vocabulary words were placed at the ends of questions to emphasize their role in interpreting the sentence. For example, “What does it mean that Cory’s robot was *raucous*?”

Materials. Instructional materials for the RR condition included participant and examiner copies of instructional passages, a repeated reading graph, and one Spanish

CBM passage. Instructional passages comprised third-grade English FAST passages entitled *Clara* or *Cory and Mark* and each contained five inserted pre-taught vocabulary words; the Spanish CBM passage comprised one third-grade Spanish FAST passage entitled *Ines*. Examiner copies of instructional and Spanish passages had numeric columns to indicate the number of words per line of text. Participant copies did not contain numbered columns but were otherwise identical to examiner copies. All participant copies were placed in plastic sheet protectors (see Appendix B).

The researcher developed a repeated reading graph to record the number of words read correctly during each repeated reading trial (see Appendix B). The graph comprised a bar chart with numbers of reading trials on the X-axis and words read correctly on the Y-axis. The Y-axis ranged from a minimum of 30 words to a maximum of 200 words, and four separate reading trials occurred on the X-axis. Boxes below each reading trial were used to record participants' scores, and markers were used to graph the number of words read correctly per trial.

Instructional materials for the RRV condition included all RR materials plus pre-taught vocabulary word cards, previewed vocabulary picture cards, and corresponding information sheets. Word cards for pre-taught vocabulary terms contained one pre-taught word from each instructional passage (see Appendix B). A total of 10 cards were created and placed into two groups corresponding to each instructional passage. Vocabulary words appeared in 48-pt Times New Roman font on 9x4" laminated cards. The researcher created an examiner information sheet for pre-taught vocabulary cards that

included definitions of each term, example sentences, and two oral language questions per word (see Appendix B).

Picture cards for previewed vocabulary words contained one picture that depicted a previewed vocabulary word from each instructional passage (see Appendix B). A total of 10 cards were created and put into two groups corresponding to each instructional passage. Pictures for previewed words were selected from Microsoft Word ClipArt and printed in color on 9x4" laminated cards. The researcher also created an examiner information sheet that included definitions of all previewed words (see Appendix B).

Independent Variable

The independent variable in this study was the type of instructional condition. Two instructional conditions were included: (1) Repeated reading (RR), and (2) Repeated reading with vocabulary instruction (RRV).

Repeated reading (RR). Repeated reading is a “supplemental reading program that consists of re-reading a short and meaningful passage until a satisfactory level of fluency is reached” (Samuels, 1979, p. 404). In previous studies, repeated reading has improved the oral reading fluency and comprehension of native English speakers (NRP, 2000; Therrien, 2004). In this study, specific instructional components of repeated reading were selected based on their empirical support with native English speakers (Therrien, 2004). These components included: adult implementation, modeling of the instructional passage, corrective feedback, and graphing student progress.

All sessions occurred one-on-one and took place in a quiet study room, library, or hallway. RR sessions lasted approximately 30 min and were audio-recorded. Sessions

followed the sequence described in detail below: (1) session directions, (2) free response vocabulary assessment, (3) first repeated reading trial (fluency pretest), (4) student graphing, (5) corrective feedback, (6) modeling, (7) second, third, and fourth (fluency posttest) repeated reading trials with student graphing and corrective feedback after each trial, (8) comprehension questions, (9) 10-question TQVM (vocabulary posttest), and (10) Spanish CBM-R assessment. At the end of sessions participants selected a gel pen for their participation.

Session directions were standardized and provided to all participants. Directions emphasized reading for speed, accuracy, and understanding. After directions were provided, participants completed one free response vocabulary assessment and the researcher recorded participant responses verbatim. Next, participants read the entire instructional passage out loud. A one-minute timer was started after the participant read the first word of the passage. The researcher recorded participant errors on the administrator's copy and noted the number of words read in one minute. This number was used to calculate a CBM-R score for the first repeated reading trial and represented the reading fluency pretest score and initial number of graphed words.

Participants then graphed the number of words read correctly in one minute on a bar chart. After praising participants for their effort, the researcher encouraged them to read more words the next trial. Reading errors were then reviewed using a standardized error correction procedure: the researcher pointed to a missed word and stated, "This word is *blank*, what word? Good, *blank*." This procedure was repeated for every missed word until participants could read each word correctly from the one-minute trial.

After error correction, the researcher modeled how to read the instructional passage with appropriate speed, accuracy, and expression. Participants followed along as the researcher read the entire passage out loud before completing the second, third, and fourth repeated reading trials independently. After each trial, participants graphed their scores and completed error correction similar to the first trial. In the second and third trials, participants read the instructional passage for one minute; in the fourth trial, participants read the entire passage and the number of words read correctly in one minute was similarly calculated. At the end of the condition, participants completed the comprehension questions, 10-question TQVM (vocabulary posttest), and the Spanish CBM.

Repeated reading plus vocabulary instruction (RRV). The RRV condition included the same procedures as RR plus additional vocabulary instruction. In RRV, pre-selected passage vocabulary words were *previewed* and *pre-taught* before repeated reading trials. Different words were included in previewed and pre-taught vocabulary instruction and all words were drawn from the instructional passage used during RRV. During previewed instruction, pictures and brief definitions were provided for words that were likely known by third graders but might require review with ELL students (Beck, McKeown, & Kucan, 2002). After previewed instruction, additional unknown words were addressed during pre-taught vocabulary instruction. This instruction included explicit teaching and practice with unknown passage words inserted in passages. Pre-taught instruction included word visuals, pronunciation, definitions, example sentences, and brief oral language activities for each word. Components were drawn from a

vocabulary instructional framework proposed by Beck and colleagues (2002) that increased vocabulary knowledge and passage comprehension in previous studies.

All sessions were conducted one-on-one and took place in a quiet study room, library, or hallway. RRV sessions were audio-recorded and lasted approximately 40 min. Sessions followed the sequence described in detail below: (1) session directions, (2) free response vocabulary assessment, (3) first repeated reading trial (fluency pretest), (4) student graphing, (5) corrective feedback, (6) previewed vocabulary instruction + modeling, (7) pre-taught vocabulary instruction, (8) second, third, and fourth (fluency posttest) repeated reading trials with student graphing and corrective feedback after each trial, (9) comprehension questions, and (10) 10-question TQVM (vocabulary posttest). At the end of sessions participants selected a gel pen for their participation.

Procedures in RRV sessions were identical to RR except for additional previewed and pre-taught vocabulary instruction. Before the study, five words from each instructional passage were selected for previewed instruction, and five additional words were inserted per passage for pre-taught instruction. RRV conditions began with the same standardized directions as RR conditions. In addition, the researcher explained that they would first *preview* passage words the participant might know, and *practice* words the participant did not know to better understand the story.

As in RR, the participant completed the free response vocabulary assessment and read the entire passage out loud while the researcher noted errors during one minute. Participants then graphed the number of words read correctly and completed error correction with the researcher. The researcher next modeled the entire passage out loud

with appropriate speed, accuracy, and expression. During modeling, previewed vocabulary instruction also occurred: when the researcher came to a previewed vocabulary word, the word was read as it occurred in the sentence. At the end of the sentence, the researcher provided a brief definition, showed a corresponding picture card, repeated the sentence, and continued reading aloud. For example, “The tiny *butterfly* hid underneath the yellow flower.” “A *butterfly* is a type of bug; here is a *butterfly*” (shows picture card) “The tiny *butterfly* hid underneath the yellow flower. Its wings were...(continues reading)”. This process continued for remaining previewed vocabulary words in the passage.

After previewed vocabulary instruction, pre-taught vocabulary instruction occurred. Prior to the study, the researcher created word cards for each pre-taught vocabulary word inserted in the instructional passage. During pre-taught vocabulary instruction, the researcher displayed and pronounced the first word (“This word is *fatigued*”). The participant then repeated the word (“What word?”) and the researcher provided a compatible definition (“*Fatigued* means tired”). The participant was then asked to recite the definition (“What does *fatigued* mean?”) and read the word out loud four times to encourage phonological representation (“Can you please read this word out loud four times?”). Afterwards, the researcher provided two example sentences with contexts that illustrated the word’s meaning and the definition was restated (“After I ran around the house five times, I was very *fatigued*; I was very tired.”). Participants then completed oral language activities by responding to two prompts about the word (“Tell me about a time you were *fatigued*” and, “What makes you feel more *fatigued* –

swimming or biking?) (Beck et al., 2002). Pre-taught instruction occurred for all pre-taught vocabulary words and pronunciations and definitions of words were subsequently reviewed (e.g., “What is this word? What does it mean?”).

After pre-taught vocabulary instruction, the remainder of RRV conditions followed the same sequence as RR conditions. Participants completed the second, third, and fourth repeated reading trials with similar timing, graphing, and error correction to the RR condition. After the fourth trial, participants completed comprehension questions, the 10-question TQVM, and selected another gel pen for their participation.

Procedures

CBM-R passage selection. Prior to the study, the researcher selected two third-grade FAST CBM-R passages as instructional passages for the study. Passages A and B were entitled *Clara* and *Cory & Mark*, respectively. Passages were selected based on similar story goal structures and the ability to insert pre-taught vocabulary words. Passages were narrative texts that conveyed a specific goal, character actions towards the goal, and goal-related outcomes. Passage A contained 244 words and Passage B had 240 words. The Coh-Metrix Text Easability Assessor (Graesser, McNamara, & Kulikowich, 2011) indicated both passages scored high in syntactic simplicity and word concreteness. Passage B also scored high in narrativity and deep cohesion, whereas Passage A scored in mid ranges for each category. Flesch-Kincaid grade level ratings ranged from 3.6 for Passage A to 2.7 for Passage B. These differences were considered secondary concerns to the ability to incorporate pre-taught vocabulary words in passages. Both passages allowed for the selection and insertion of 10 unknown words balanced according to

syllable count, word type, and dispersion across paragraphs (see *Word Selection: Pre-taught vocabulary* for additional description). Prior to the study, the researcher confirmed with school interventionists that participants were not recently exposed to either passage.

CBM-R administration. Before all CBM-R assessments during screening and repeated reading trials, the researcher provided the following directions: “When I say begin, read aloud at the top of the page and read across the page this way. Try to read every word, but if you come to a word you don’t know I’ll tell it to you. Just keep reading until I say ‘stop’ and remember this is not a race. Please do your best reading. Do you have any questions?” When multiple CBM-R assessments occurred during instructional conditions, participants were instructed to follow the same directions as before.

CBM-R scoring. The researcher scored all CBM-R assessments according to standardized procedures proposed by Shinn (1989). As participants read aloud, omissions, mispronunciations, and substitutions were recorded as errors. If a participant perseverated on a word for more than 3 s, the researcher provided the word and recorded it as an error. If a participant skipped a word or line of text, these words were subtracted from the total number of words read and not considered errors. Self-corrections and errors due to speech-related problems were also not considered errors. After 1 min, the total number of words read was calculated and the number of errors subtracted. The resulting figure provided the number of words read correctly and comprised the final CBM-R score.

Pre-taught vocabulary word selection. The researcher next selected five pre-taught vocabulary words to insert in each instructional passage for a total of 10 words between passages. Pre-taught vocabulary words were chosen based on the following criteria: (1) words were unlikely to be known by third grade students, (2) words could be easily taught using a synonym or short phrase, (3) words were relevant to passage understanding, and (4) words fit the contexts of respective passages. When possible, more sophisticated vocabulary terms were chosen for words already in passages. A total of nine words (90%) were selected this way. For example, the word *abundance* replaced the term *many* in Passage B, and the word *cessation* replaced the word *end* in Passage A. For the remaining vocabulary word (10%), an alternate term with a different meaning yet compatible fit was chosen. In this case, the word *raucous* replaced the term *silver* in describing the robot featured in Passage B. Participants' teachers reviewed all words and recommended them as unlikely to be known by participants prior to the study.

Within passages, pre-taught vocabulary words were inserted within highly connected story units or units that further described highly connected story units. Knowledge of pre-taught vocabulary words thus related to understanding key story components either directly or more comprehensively. In each passage, two pre-taught vocabulary words occurred in highly connected story units and three were in units that enhanced description of highly connected units. Passage A contained the following pre-taught vocabulary words: *cessation*, *jittery*, *convene*, *distinct*, and *replete*. The word frequency list produced by the Corpus of Contemporary American English (COCA) indicates that pre-taught vocabulary words in Passage A ranged in frequency from 3,275

– 17,641 of the 60,000 most frequently used English words. Passage B contained the following pre-taught vocabulary words: raucous, socialize, adjunct, meager, and abundance. These words ranged from 5,485 – 13,327 of the most frequently used English words.

To control for instrument effects related to differences in pre-taught vocabulary words across passages, the type of word and number of syllables per vocabulary word were balanced across passages. Each 5-word passage vocabulary set included one noun, three adjectives, and one verb. Sets also contained two words with three syllables, and three words with two syllables. In addition, vocabulary words were placed in similar passage locations to balance exposure to words during timed instructional readings. Within passages, 1-2 vocabulary words occurred in the first paragraph, 2-3 words in the second to third paragraphs, and one word occurred in the last paragraph. Combined, these steps promoted balance across passage vocabulary words according to word type, readability, and exposure.

Previewed vocabulary word selection. Five additional words per passage were identified for previewed vocabulary instruction. While not the main focus of vocabulary instruction in this study, these words were addressed in case they were only partially or vaguely understood by ELL students (Calderón, August, Slavin, Duran, Madden, & Cheung, 2005). Previewed vocabulary words were selected based on the following criteria: (1) words were common nouns or verbs relevant to story understanding, and (2) words could be easily taught using a synonym or short phrase.

In Passage A, previewed vocabulary words included four nouns and one verb. These words were: flyer, ribbon, costumes, curtain, and bowed. The COCA word frequency list indicated previewed vocabulary words ranged in frequency from 3,649 – 11,004 of the most frequently used English words. Passage B also included four nouns and one verb. These words were: robot, rake, pinecones, lemonade, and coins. Passage B previewed vocabulary words ranged in frequency from 4,415 – 31,554 of the most frequently used English words. Words were interspersed among the beginning, middle, and end sections of each passage.

Pre-taught and previewed vocabulary definition selection. All definitions for pre-taught and previewed vocabulary words were compatible with the contexts of instructional passages. Only definitional aspects that aligned with how each term occurred in instructional passages were emphasized. For example, in some contexts the term *cessation* indicates a temporary pause, but in the context of Passage A the term indicated the conclusion of a show and was defined as “the end”. Similarly, the word *socialize* can describe the process of teaching someone to behave in a way that is socially acceptable; however, in Passage B the word indicated the manner in which characters spent time together and was defined as “to talk to (someone)”. All definitions comprised synonyms or short phrases that could be quickly conveyed to students. The Longman Dictionary of Contemporary English (Longman Dictionary of Contemporary English, 2014) was referenced to identify appropriate definitions for young ELL students.

TQVM administration. After developing the TQVM assessment (see Measures section for description) the researcher refined TQVM administration procedures. During

TQVM administration, the researcher read vocabulary questions aloud to individual participants. After every question, participants responded by circling either “yes” or “no” on an answer form with written transcriptions of each question. The following instructions were given during administration: “I’m going to ask you some questions and please circle ‘yes’ or ‘no’ to mark your answer. Many of these questions contain a tricky word. If you’re not sure of the answer just take your best guess. Do you have any questions?” The researcher then read each question aloud and continued as participants completed questions. The assessment was untimed, and no additional information was provided to participants other than re-stating questions upon request.

TQVM scoring. The researcher scored all TQVM responses according to the protocol suggested by Kearns and Biemiller (2012). A researcher-created answer key indicated correct “yes” and “no” responses for all questions (see Appendix C). To receive full credit for a word, correct responses to both questions about the same word were required. A score of 2 indicated full credit. If a participant correctly answered one of two questions, partial credit was indicated by a score of 1. If no questions were answered correctly, no credit was given. A total score was calculated by adding the number of points across questions per assessment. The number of points associated with specific words was also recorded, and words were considered known if they had a score of 2, partially known if they had a score of 1, and unknown if no credit was given.

Comprehension assessment development. Twelve comprehension questions (literal, inferential, and contextual) were created per passage by the researcher. Inferential comprehension questions were based on results of causal analyses of Passages

A and B conducted by the researcher and reviewed by a discourse expert. Causal analyses identify important relations between different story states and actions, content of different clauses, and overall connections within a story (Trabasso, van den Broek, & Suh, 1989). These relations indicate where causal inferences can be made and informed the content of inferential comprehension questions.

To conduct each causal analysis, the researcher began by identifying highly connected story units per instructional passage. Story units comprise individual clauses within a text, and highly connected story units indicate parts of text with significant causal relevance to preceding or subsequent story units. Overall, highly connected story units form the foundation of how a reader creates a mental representation of a text and inform how texts are understood and recalled by readers (Kendeou, van den Broek, White, & Lynch, 2009). To identify highly connected story units, the researcher parsed passages into story units according to the framework proposed by Trabasso and colleagues (1989). Story units with five or more causal connections in Passage A were considered highly connected, and story units with seven or more causal connections in Passage B were considered highly connected.

These highly connected story units indicated central goals, actions, and outcomes that were causally relevant story components of instructional passages and formed the basis for inferential comprehension questions. A total of four out of five inferential questions referred to highly connected story units per passage. In addition to the creation of inferential comprehension questions, story units also indicated which pre-taught vocabulary words occurred in meaningful story components per passage. Literal

comprehension questions did not pertain to highly connected story units but reflected key story grammar components including characters, actions, settings, and story details (Taylor & Samuels, 1983). After all comprehension questions were created, passage question sets were balanced according to the number and type of inferential comprehension question and the inclusion and opportunity to use pre-taught vocabulary words within comprehension responses.

Comprehension assessment administration. During administration of comprehension questions, literal and inferential questions were intermixed and administered in the order in which story units occurred in passages. Contextual comprehension questions always occurred after administration of literal and inferential questions. The researcher provided the following directions prior to all comprehension questions: “I’m going to ask you some questions about the story you read. Try your best to answer each question; if you’re not sure, give your best guess.” The researcher then read the questions aloud and transcribed participants’ responses verbatim. All questions were untimed and audio-recorded. No additional information was provided to participants other than re-stating questions upon request.

Comprehension assessment scoring. Comprehension questions were scored according to a researcher-developed answer key (see Appendix C). The key provided examples of participant responses that would receive full, partial, or no credit per question. Specific examples were drawn from participant samples and used to create generalized scoring indicators per question. To receive full credit, responses needed to correctly capture all pre-identified key components. Partial credit responses

demonstrated at least one key component but either did not capture all key components correctly or did not capture any key components but contained accurate, relevant information from the text. Incorrect responses did not demonstrate any key components, interpreted all key components incorrectly, or provided inaccurate information. Responses were scored independently of each other by the researcher using the answer key for scoring consistency. A total comprehension score was calculated by adding the number of points across questions per posttest.

Screening. Teachers identified potential study participants for an individual, 10-min screening session with the researcher. During screening, the researcher explained the consent process, provided consent forms in English and Spanish, and explained that students could receive a gel pen for returning signed consent forms. Students also completed additional reading and vocabulary assessments to determine study eligibility. These assessments included three CBM-R assessments using third grade FAST screening passages and the researcher-developed 20-question TQVM screener. All screening sessions were audio-recorded.

Counter-balancing and randomization. Once participants were identified, both session order and instructional passages were counter-balanced across participants. To determine random assignment, the researcher listed participant names in alphabetical order and used a random number generator. First, participants were randomly assigned to one of two instructional conditions for their first session: repeated reading (RR) or repeated reading with vocabulary instruction (RRV). A total of 15 participants completed RR first, and 16 participants completed RRV first. Within these groups,

participants were then randomly assigned to complete either Passage A or Passage B during their first session. For the group that completed RR first, a total of eight participants read Passage A and seven participants read Passage B. For the group that completed RRV first, eight participants read Passage A and eight participants read Passage B. During the second instructional sessions, participants completed the opposite instructional condition using the opposite passage. In this way, possible threats related to session order and passage type were equally distributed across participants.

Session 1. Students who met CBM-R eligibility criteria and whose parents consented to their participation completed the assent process during Session 1. The researcher met with individual students and explained the voluntary nature of the study; students who agreed to participate signed the assent form and completed Session 1 as a study participant.

During Session 1, participants first completed free response vocabulary questions to compare initial vocabulary screening results to an alternate assessment of vocabulary knowledge. Given that participants were required to circle either “yes” or “no” to indicate their vocabulary knowledge on the TQVM assessment, an additional vocabulary measure of the same words was desired in case word knowledge was overrepresented on the TQVM screener due to chance guessing. Participants completed free response vocabulary questions for the five pre-taught vocabulary words used in Session 1 and all assessments were audio-recorded.

After completing free response vocabulary questions, participants individually completed the randomly assigned instructional condition. The researcher provided

directions for the condition and participants completed either RR or RRV. For either instructional condition in Session 1, the first repeated reading trial produced participants' oral reading fluency pretest score, and the last repeated reading trial provided their posttest score. To conclude Session 1, participants completed comprehension questions and the 10-question TQVM posttest. If participants completed RR during Session 1, a CBM-R assessment in Spanish was also completed. All participants received a gel pen for their participation at the end of the session.

Session 2. All participants completed Session 2 after completing Session 1. The researcher finished Session 1 conditions within two weeks, and Session 2 conditions were completed in an additional two weeks. Depending on participant availability and school schedules, all participants completed both sessions within a 1-3 week span.

During Session 2, participants completed the alternate instructional condition and passage used in Session 1. All instruction and assessments were completed in the same order and for the same amount of time as Session 1. As such, Session 2 began with free response vocabulary questions for pre-taught vocabulary words used in Session 2. The researcher then provided directions for the alternate instructional condition used in Session 1 and the oral reading fluency pretest and posttest scores were similarly completed from first and last repeated reading trials. At the end of Session 2, participants similarly completed comprehension questions, and the TQVM posttest in the same manner as Session 1. If participants completed RR during Session 2, a CBM-R assessment in Spanish was also completed. All participants received a gel pen for their participation at the end of the session.

Inter-observer Agreement and Fidelity of Implementation

Fidelity of implementation was calculated for 27 % of sessions across instructional conditions, or 17 out of 62 total sessions. A licensed Masters student in the department of Curriculum and Instruction completed all fidelity observations using audio records and a researcher-developed 26-item checklist that described procedures for each instructional condition (see Appendix A). Procedures addressed critical intervention components related to timed student readings, graphing, error correction, and individual steps in vocabulary review. Additional procedures that described the purpose of the activity and anticipated student behaviors were also included. Prior to calculating fidelity of implementation, the Masters student completed an hour training on using the fidelity checklist and reached 90% agreement with the researcher on practice samples. To calculate fidelity of implementation, the observer checked whether specified procedures were present and calculated a percentage agreement between intended and observed instructional procedures. The number of positive ratings over total number of positive and negative ratings was multiplied by 100 to produce a fidelity score. Across all observations, mean implementation fidelity was 97% (range= 95% to 100%).

Inter-observer agreement (IOA) was also calculated for 21 % of administrations of each dependent measure across instructional conditions and sessions. A doctoral candidate and research fellow in the department of Educational Psychology conducted IOA. Audio-recorded instructional sessions were used to calculate IOA with the researcher. The research fellow completed IOA for CBM-R assessments, and the doctoral candidate calculated IOA for comprehension questions, free response vocabulary

assessments, and the TQVM. The researcher conducted separate training sessions to teach scoring procedures and to reach 90% agreement with observers on practice samples. Afterwards, the observers independently conducted IOA for designated assessments. Overall, IOA was 97% for CBM-R assessments (range = 94%-100%), 93% for comprehension assessments (range = 83%-100%), 100% for free response vocabulary assessments, and 100% for TQVM assessments.

Data Analyses

To answer the primary research question regarding whether the addition of vocabulary instruction to repeated reading improved the reading performance of ELLs beyond repeated reading in isolation, a series of one-way repeated measures of variance (ANOVAs) were conducted. The within-subjects factor was the instructional condition (RR or RRV) and the between-subjects factors included (1) the order of instructional conditions, and (2) the order of passages. Descriptive statistics for participant performance on free response vocabulary questions and Spanish CBM-R assessments were also completed.

For each dependent measure, the researcher conducted a repeated measures ANOVA to determine whether statistically significant differences occurred between mean scores across instructional conditions. The researcher used posttest scores to examine comprehension differences and calculated change scores to represent pre-post differences for vocabulary. Both pre and posttest scores were used to examine changes in oral reading fluency across conditions. Effect size calculations for main effects were

interpreted using Cohen's guidelines: (a) .02 as a small effect, (b) .13 to .25 as a medium effect, and (c) .26 and larger as a large effect size (Cohen, 1988).

Chapter 4

RESULTS

The purpose of this study was to examine whether vocabulary instruction contributed to outcomes of a repeated reading intervention with ELL students. The following research question guided the study: Does repeated reading with vocabulary instruction improve the reading fluency and comprehension of ELLs beyond repeated reading in isolation? Based on a review of the literature, my hypothesis was that repeated reading with vocabulary instruction would be superior across all dependent measures. Dependent measures included oral reading fluency, reading comprehension, and vocabulary word knowledge. In addition, the number of vocabulary words read correctly was examined. A within-subjects design was used to compare condition effects; a repeated measures ANOVA was conducted for each dependent variable.

Assumption Testing

Prior to the primary analyses, the following underlying assumptions of repeated measures ANOVA were tested: normality, homogeneity of variance, and sphericity. The normality assumption was tested by examining residual Q-Q plots (see Appendix D), means, SDs, skewness, and kurtosis for each dependent variable. These descriptive results are included in Table 3 for oral reading fluency, comprehension, vocabulary word knowledge, and vocabulary word reading accuracy.

For normally distributed data, skewness should be within a range of -2 to +2, and kurtosis should be between -3 to +3 (Field, 2005). Q-Q plots for all dependent variables indicated there were no significant deviations in the distribution of residuals. Descriptive

results across dependent variables indicated that skewness and kurtosis statistics were within ranges except the kurtosis statistic for the comprehension posttest in RRV was slightly outside the preferred range (3.410). Visual inspection of the corresponding boxplot indicated one outlier within a single standard deviation; for this reason, the underlying assumption of normality was not considered seriously violated.

Table 3. *Descriptive Statistics (Means and SDs) and Skewness and Kurtosis for Dependent Measures Across Instructional Conditions*

| Oral Reading Fluency Pretest | | | | | |
|---|----------|----------|-----------|----------|----------|
| Condition | <i>n</i> | <i>M</i> | <i>SD</i> | Skewness | Kurtosis |
| RR | 31 | 84.90 | 22.68 | 0.10 | -0.97 |
| RRV | 31 | 86.32 | 23.89 | 0.28 | -0.70 |
| Oral Reading Fluency Posttest | | | | | |
| RR | 31 | 110.16 | 23.40 | 0.47 | -0.68 |
| RRV | 31 | 115.45 | 22.31 | -0.13 | -1.24 |
| Comprehension Posttest | | | | | |
| RR | 31 | 13.23 | 3.65 | 0.08 | -0.48 |
| RRV | 31 | 15.84 | 3.46 | -1.33 | 3.41 |
| Vocabulary Word Knowledge Change Scores | | | | | |
| RR | 31 | 0.39 | 1.90 | -0.35 | 1.78 |
| RRV | 31 | 2.35 | 2.04 | -0.74 | 0.52 |
| Vocabulary Word Reading Accuracy Pretest | | | | | |
| RR | 31 | 1.80 | 1.64 | 0.33 | -1.04 |
| RRV | 31 | 1.77 | 1.38 | 0.60 | 0.25 |
| Vocabulary Word Reading Accuracy Posttest | | | | | |
| RR | 31 | 3.32 | 1.22 | 0.03 | -1.25 |
| RRV | 31 | 4.03 | 0.95 | -0.32 | -1.32 |

To test the assumption of homogeneity of variance, the Levene's Test of Homogeneity of Variance was conducted for each dependent variable. For data that do not violate this assumption, results of Levene's Test are not statistically significant. Results across dependent measures indicated there were no statistically significant violations except for the comprehension posttest in the RR condition ($p = .003$). This statistic was further examined by visually inspecting the scatterplot of the residuals and comparing the ratio of standard deviations between RR and RRV comprehension assessments. Visual inspection of the scatterplot indicated that residuals were evenly distributed; in addition, the ratio of standard deviations between independent variables was less than 4:1 (3.64 for RR and 3.45 for RRV). For these reasons, the assumption of homogeneity of variance was not considered seriously violated for the RR comprehension posttest.

The assumption of sphericity was not a concern for this analysis given the study design. Sphericity is a condition that occurs when the variances of the differences across all combinations of levels in a repeated measures design are equal. Violations of sphericity cannot occur, however, when there are only two levels of a factor as in this study (i.e., pretest and posttest; RR and RRV) (Howell, 2010). For this reason, the assumption of sphericity was considered met, and results from Mauchly's Test of Sphericity confirm that statistics were not significant and correction procedures were neither meaningful nor required.

Free Response Vocabulary Assessment Results

In addition to assumption testing, frequency statistics were calculated for scores on Free Response vocabulary assessments prior to the primary analyses. This assessment was completed to verify that instructional words were unknown at pretest in addition to results of the Two-Question Vocabulary Measure (TQVM; Kearns & Biemiller, 2011). Frequency statistics for Free Response assessments indicated how many words were unknown, partially known, or known across participants before sessions. Scores were calculated by totaling the number of points per assessment for each passage. Individual word scores could be 0, 1, or 2 points with a maximum of 10 points per assessment; all assessments were completed before Sessions 1 and 2. Results indicate that Passage A words were completely unknown by 90% of participants and Passage B words were completely unknown by 80% of participants. For Passage A, one participant partially knew one word, and two participants provided correct definitions for two words. For Passage B, four participants partially knew one word, and two participants provided correct definitions for three words.

Primary Analyses

To answer the primary research question, data were analyzed using a repeated measures ANOVA (RM-ANOVA) with type of instruction (RR or RRV) as the within-subjects factor and condition and passage order as between-subjects factors. A RM-ANOVA was conducted for each dependent variable and the Hedges *g* effect size estimate was calculated to account for small sample size. Effect size calculations were interpreted using Cohen's guidelines: (a) .20 as a small effect, (b) .50 as a medium effect,

and (c) .80 as a large effect (Cohen, 1988). Given the uni-directional hypothesis that RRV would be superior across all dependent measures, *p*-values were adjusted by dividing the observed value in half. Results are reported for vocabulary knowledge, oral reading fluency, comprehension with and without contextual questions, and vocabulary word-reading accuracy.

Vocabulary knowledge. A RM-ANOVA was conducted for vocabulary knowledge using vocabulary change scores. Vocabulary change scores were calculated by first comparing scores for individual words on the TQVM screener and TQVM posttests. Individual word scores could be 0, 1, or 2 on either assessment; the difference between individual word scores on the screener and posttests was then calculated and could range from -2 to +2 per word. For example, if a participant scored 1 point for the word *cessation* on the screener and 2 points for *cessation* at posttest, the overall difference for this word would be +1.

Once these differences were calculated for all individual words, they were aggregated for words on specific passages. Difference scores for words used in Passages A and B were aggregated separately to represent the overall change from pretest to posttest per passage. Next, the instructional condition associated with aggregated passage scores (change scores) was identified per participant. For example, if a participant used Passage A in RR, the aggregated change score represented the participant's growth in vocabulary knowledge from pre to posttest in the RR condition. Using RM-ANOVA, this score was compared to the other change score for Passage B in RRV, and overall pre-post differences across participants were calculated according to

type of instructional condition (RR or RRV). A maximum of 10 points was possible per vocabulary assessment.

The RM-ANOVA for vocabulary knowledge revealed a significant main effect of instruction and all possible interactions were non-significant (see Table 4 and Figure 2 for results of Vocabulary Word Knowledge). Participants' vocabulary knowledge was statistically significantly higher, on average, in the RRV condition than in the RR condition, $g = .98$.

Table 4. *Results of RM-ANOVA on Vocabulary Knowledge.*

| Vocabulary Knowledge | Type III Sum of Squares | df | Mean Square | F | Error | p | η^2 |
|--|-------------------------------|----|----------------|-------|-------|------|----------|
| Instruction | 57.4 | 1 | 57.4 | 18.48 | 3.1 | 0.00 | 0.41 |
| Instruction*Condition Order | 0.5 | 1 | 0.5 | 0.16 | | 0.35 | 0.01 |
| Instruction*Passage Order | 2.03 | 1 | 2.03 | 0.65 | | 0.21 | 0.02 |
| Instruction*Condition Order*Passage Order | 0.17 | 1 | 0.17 | 0.05 | | 0.41 | 0.00 |

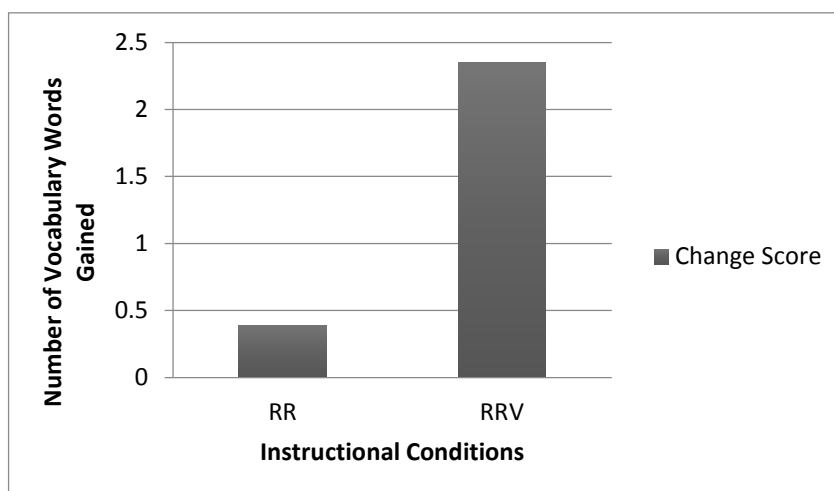


Figure 2. Mean Vocabulary Change Scores Across Instructional Conditions

Oral reading fluency. A RM-ANOVA was conducted for oral reading fluency using pre-and posttest CBM-R scores. Scores represent the number of words read correctly in one minute at pretest and posttest across instructional conditions. Pre-and posttest CBM-R assessments were completed during the first and last repeated reading trials of instructional conditions, respectively.

The RM-ANOVA revealed a statistically significant main effect of time that indicated participants' scores were, on average, statistically significantly higher at posttest than pretest, $g = 1.20$. The RM-ANOVA for instruction approached significance with limited power (.254) to detect a small effect, $g = 0.14$. A three-way interaction was also observed between instruction, condition order, and passage order that indicated higher performance on Passage A regardless of condition or passage order. Refer to Table 5 for a summary of repeated measures ANOVA results for oral reading fluency and Appendix D for line graphs of observed results.

Table 5. Results of RM-ANOVA on Oral Reading Fluency.

| Oral Reading Fluency | Type III Sum of Squares | df | Mean Square | F | Error | p | η^2 |
|--|-------------------------------|----|----------------|--------|--------|------|----------|
| Instruction | 316.15 | 1 | 316.15 | 1.81 | 175.14 | 0.09 | 0.06 |
| Instruction* Condition Order | 222.73 | 1 | 222.73 | 1.27 | | 0.13 | 0.04 |
| Instruction*Passage Order | 0.37 | 1 | 0.37 | 0.00 | | 0.48 | 0.00 |
| Instruction* Condition Order* Passage Order | 1717.08 | 1 | 1717.08 | 9.80 | | 0.00 | 0.27 |
| Time | 22484.32 | 1 | 22484.32 | 162.73 | 138.17 | 0.00 | 0.86 |
| Time*Condition Order | 79.56 | 1 | 79.56 | 0.57 | | 0.23 | 0.02 |
| Time*Passage Order | 0.02 | 1 | 0.02 | 0.00 | | 0.49 | 0.00 |
| Time*Condition Order*Passage Order | 123.10 | 1 | 123.10 | 0.89 | | 0.18 | 0.03 |
| Instruction*Time | 107.94 | 1 | 107.94 | 1.28 | | 0.13 | 0.05 |
| Instruction*Time* Condition Order | 0.65 | 1 | 0.65 | 0.01 | | 0.47 | 0.00 |
| Instruction*Time* Passage Order | 25.50 | 1 | 25.50 | 0.30 | | 0.29 | 0.01 |
| Instruction*Time* Condition Order*Passage Order | 17.40 | 1 | 17.40 | 0.21 | | 0.33 | 0.01 |

Reading comprehension. A RM-ANOVA was conducted for reading comprehension using posttest scores in response to literal, inferential, and contextual comprehension questions. Posttest comprehension assessments were completed at the end of each instructional condition and contained five literal questions, five inferential questions, and two contextual questions. A maximum of 24 points were possible on comprehension posttests; without contextual questions a maximum of 20 points were possible. Separate RM-ANOVAs were conducted for all comprehension questions and for literal and inferential questions only.

The RM-ANOVA for all comprehension questions revealed a statistically significant main effect of instruction that indicated participants' comprehension performance was, on average, higher in the RRV condition than the RR condition, $g = .73$. A three-way interaction between instruction, condition order, and passage order also occurred that indicated lower performance on Passage A regardless of passage or condition order. Refer to Table 6 and Figure 3 for a summary of the primary RM-ANOVA results and Appendix D for a line graph of the interaction.

Table 6. Results of RM-ANOVA on Comprehension

| Comprehension | Type III Sum of Squares | df | Mean Square | F | Error | p | η^2 |
|--|-------------------------------|----|----------------|-------|-------|------|----------|
| Instruction | 110.52 | 1 | 110.53 | 25.02 | 4.42 | 0.00 | 0.48 |
| Instruction*Condition Order | 0.72 | 1 | 0.72 | 0.16 | | 0.34 | 0.01 |
| Instruction*Passage Order | 0.19 | 1 | 0.2 | 0.05 | | 0.41 | 0.00 |
| Instruction*Condition Order*Passage Order | 85.36 | 1 | 85.36 | 19.32 | | 0.00 | 0.42 |

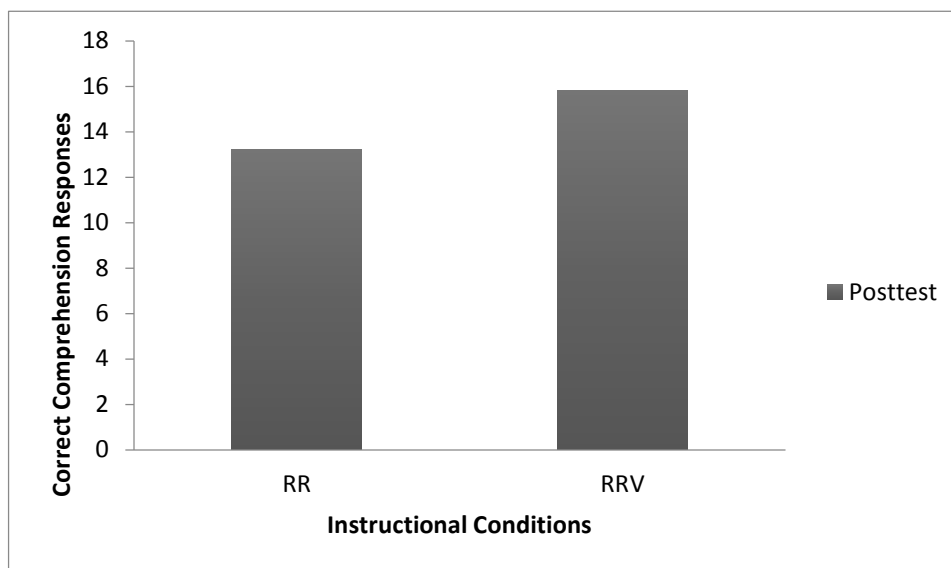


Figure 3. Mean Comprehension Posttest Scores Across Instructional Conditions

When a RM-ANOVA was conducted for literal and inferential questions only, the main effect of instruction was not statistically significant and a three-way interaction between instruction, condition order, and passage order still occurred that indicated lower performance on Passage A regardless of passage or condition order. Refer to Table 7 for a summary of the RM-ANOVA results and Figure 4 for a line graph of observed results.

Table 7. Results of RM-ANOVA on Literal and Inferential Comprehension

| Literal+Inferential Comprehension | Type III Sum of Squares | df | Mean Square | F | Error | p | η^2 |
|---|-------------------------|----|-------------|-------|-------|------|----------|
| Instruction | 8.36 | 1 | 8.36 | 1.97 | 4.26 | 0.08 | 0.07 |
| Instruction*Condition Order | 2.62 | 1 | 2.62 | 0.62 | | 0.22 | 0.02 |
| Instruction*Passage Order | 0.55 | 1 | 0.55 | 0.13 | | 0.36 | 0.01 |
| Instruction*Condition Order*Passage Order | 56.12 | 1 | 56.12 | 13.18 | | 0.00 | 0.33 |

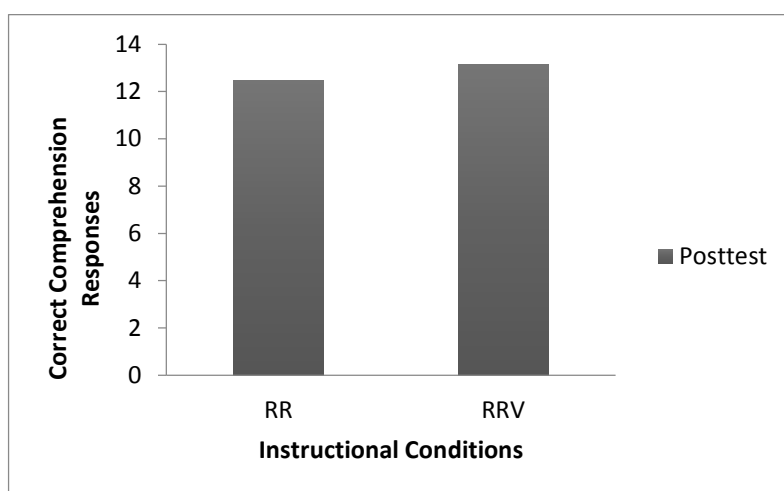


Figure 4. Mean Literal and Inferential Comprehension Posttest Scores Across Instructional Conditions

Vocabulary word-reading. A RM-ANOVA was conducted for vocabulary word-reading accuracy using pre-and posttest CBM-R scores. Vocabulary word reading accuracy scores represent the number of pre-taught vocabulary words that were read correctly during pre and posttest CBM-R assessments. A maximum score of five words read correctly was possible for each assessment. Pre-and posttest CBM-R assessments were completed during the first and last repeated reading trials of instructional conditions, respectively.

A RM-ANOVA for vocabulary word-reading accuracy revealed a statistically significant main effect for instruction that indicated participants' word reading accuracy was, on average, higher in the RRV condition than the RR condition, $g = 0.31$. A statistically significant main effect of time was also revealed that indicated participants' scores at posttest were, on average, higher than at pretest, $g = 1.59$. In addition, a pair of two-way interactions were also statistically significant and included (1) instruction and passage order, and (2) instruction and time. The interaction between instruction and passage order indicated that scores in the RRV condition were highest overall with the greatest differentiation between conditions occurring for Passage B. The interaction between instruction and time indicated that pretest scores were similar for both conditions but posttest scores were higher for RRV.

Statistically significant three-way interactions were observed and included the following combinations: (1) instruction, condition order, and passage order, and (2) time, condition order, and passage order. The interaction between instruction, condition order, and passage order indicated that when Passage A was delivered first, participants

performed better on Passage A regardless of condition order. When Passage A was delivered second, participants performed better in RRV overall and better on Passage A than Passage B. The interaction between time, condition order, and passage order indicated that when Passage A was delivered first, pre-post scores were higher on this passage when RR was the first instructional condition and lower when RRV was the first condition. When Passage B was delivered first, pretest scores were lower when RR was the first condition but higher at posttest. Refer to Table 8 and Figure 5 for a summary of the primary RM-ANOVA results and Appendix D for line graphs of interaction results.

Table 8. Results of RM-ANOVA on Vocabulary Word Reading Accuracy.

| Vocabulary Word Reading Accuracy | Type III Sum of Squares | df | Mean Square | F | Error | p | η^2 |
|--|-------------------------------|----|----------------|--------|-------|------|----------|
| Instruction | 4.19 | 1 | 4.19 | 4.41 | 0.95 | 0.02 | 0.14 |
| Instruction*Condition Order | 1.42 | 1 | 1.42 | 1.49 | | 0.12 | 0.05 |
| Instruction*Passage Order | 4.43 | 1 | 4.43 | 4.66 | | 0.02 | 0.15 |
| Instruction*Condition Order*Passage Order | 4.71 | 1 | 4.71 | 4.96 | | 0.02 | 0.16 |
| Time | 105.89 | 1 | 105.89 | 163.37 | 0.64 | 0.00 | 0.86 |
| Time*Condition Order | 0.01 | 1 | 0.01 | 0.02 | | 0.44 | 0.00 |
| Time*Passage Order | 0.99 | 1 | 0.99 | 1.53 | | 0.11 | 0.05 |
| Time*Condition Order*Passage Order | 4.24 | 1 | 4.24 | 6.54 | | 0.01 | 0.19 |
| Instruction*Time | 4.04 | 1 | 4.03 | 6.24 | | 0.01 | 0.19 |
| Instruction*Time*Condition Order | 0.02 | 1 | 0.02 | 0.03 | | 0.43 | 0.00 |
| Instruction*Time*Passage Order | 0.39 | 1 | 0.39 | 0.60 | | 0.22 | 0.02 |
| Instruction*Time*Condition Order*Passage Order | 0.12 | 1 | 0.12 | 0.18 | | 0.34 | 0.01 |

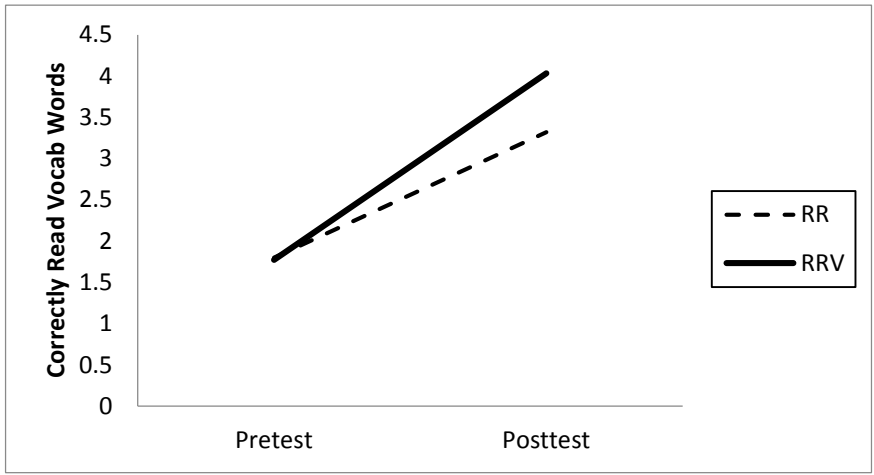


Figure 5. Mean Number of Vocabulary Words Read Correctly Across Pre and Posttests

Chapter 5

DISCUSSION

Repeated reading is one well-researched fluency intervention shown to improve the reading fluency and comprehension of native English speakers (Therrien, 2004). Research indicates that when sufficient reading fluency is achieved, reading comprehension is generally facilitated (Fuchs, Fuchs, Hosp, & Jenkins, 2001). This finding supports the Theory of Automaticity proposed by LaBerge and Samuels (1974) that suggests when automaticity in basic reading skills such as decoding is attained, cognitive resources may be allocated towards higher-level skills such as reading comprehension.

Additional research indicates that vocabulary knowledge is also correlated with reading comprehension (Baumann & Kameenui, 1991; Beck & McKeown, 1991; Espin & Deno, 1995; Raynor et al., 2001). In Perfetti's Lexical Quality Hypothesis (2007), the ability to access rich, meaningful representations of words is foundational to text comprehension. Consideration of word knowledge may be particularly relevant when addressing reading comprehension with ELLs, who typically present lower English oral language competencies. For this reason, the relation between reading fluency and comprehension is less clear for these students, and instructional adaptations that support oral language may be warranted.

The purpose of this study was to explore whether combining repeated reading with vocabulary instruction shows promise to improve the reading fluency and comprehension of ELLs. Specifically, does repeated reading with vocabulary instruction

improve the reading fluency and comprehension of ELLs beyond repeated reading in isolation? I hypothesized that repeated reading with vocabulary instruction will be superior across all reading fluency and comprehension measures for ELLs.

In this chapter, outcomes are interpreted for vocabulary knowledge, oral reading fluency, comprehension, and vocabulary word-reading accuracy. Study limitations and implications for research and practice are described.

Vocabulary Knowledge Outcomes

Results revealed a statistically significant main effect of instruction with a large effect size, $g = .98$. No statistically significant interactions were observed. These outcomes suggest that participants successfully learned targeted vocabulary words as delivered within the repeated reading intervention. Acquisition of vocabulary words in RRV is critical in determining whether vocabulary instruction improves reading fluency and comprehension beyond RR in isolation, and also provides insight about effectively pre-teaching key words.

In this study, brief, explicit instruction that addressed word pronunciations, definitions, examples of words in context, and the use of words in oral language activities was sufficient to facilitate word learning measured by change scores on the Two-Question Vocabulary Measure (TQVM; Kearns & Biemiller, 2011). Results of Free Response vocabulary assessments indicated that most pre-taught vocabulary words were unknown by the majority of participants prior to instruction; however, a few words were previously known by a small number of participants. In these cases, vocabulary change scores accounted for prior knowledge and did not reflect growth otherwise attributable to

the intervention. For example, if a word were already known, the participant would likely score +2 on both the pretest and posttest and receive an overall change score of 0. Thus, TQVM results indicate that word knowledge was improved in the RRV condition regardless of whether some words were known or partially known by a few participants.

Future studies should explore variations in vocabulary instruction to identify parameters related to the number of words conducive to word learning, the nature and duration of explicit vocabulary instruction, and whether reviewing additional words is beneficial. In this study, additional words were quickly reviewed with picture cards but not tested for understanding. Vocabulary instruction also added 10 minutes to the intervention and whether this time could be shortened or increased to further improve reading outcomes should be explored.

Oral Reading Fluency Outcomes

Results revealed a statistically significant main effect of time ($g = 1.02$) and no significant main effect of instruction. The statistically significant main effect of time suggests that participants improved from pretest to posttest during both instructional conditions, which is consistent with results from other repeated reading studies with native English speakers (Therrien, 2004) and suggests that additional vocabulary instruction neither impedes nor promotes oral reading fluency growth as provided in this study.

However, the above finding is qualified by a possible passage effect, indicated by the three-way interaction between instruction, condition order, and passage order. This interaction suggests that Passage A was easier to read and that participants read more

words on this passage regardless of condition or passage order. Despite this possible passage effect, RRV only improved oral reading fluency on Passage B (which appeared to be slightly more challenging to read fluently than Passage A). Thus, it does not appear that RRV improves the oral reading fluency of ELLs beyond repeated reading in isolation, although this outcome may be influenced by a passage effect. The non-significant effect of RRV contrasts with prior literature on combined fluency and vocabulary instruction with ELLs, however. Although previous studies examined other forms of reading fluency instruction with vocabulary support (Albers & Hoffman, 2012; Landa, 2009; Malloy et al., 2007; O'Donnell et al., 2003; Ross & Begeny, 2011; Rousseau & Tam, 1991, 1993; Tam et al., 2006), the combined condition generally produced higher oral reading fluency results than typical instruction. This difference is possibly related to prior studies consisting of single-subject designs that relied primarily on visual analyses where differences might have been observed, but were not large (Landa, 2009; Malloy et al., 2007; Tam et al., 2006). It is also possible that a significant main effect of instruction was not observed in this study because the duration was too short to have detected differentiation, or that initial participant oral reading fluency levels were too high to have revealed differentiation during the study.

Future studies should examine whether including vocabulary instruction improves the oral reading fluency of participants with varying levels of fluency. A larger sample size would permit observation of differentiation among multiple participants with higher and lower oral reading fluency ranges. In addition, extending the study duration would

provide greater insight into whether RRV improves oral reading fluency across multiple weeks of instruction.

Comprehension Outcomes

Comprehension analyses were conducted for (1) all comprehension questions, and (2) literal and inferential questions-only to examine responses that did not rely on direct knowledge of vocabulary words. Results revealed a statistically significant main effect of instruction and large effect size for all comprehension questions ($g = .73$). Results for literal and inferential questions-only were non-significant ($g = 0.22$). Three-way interactions between instruction, condition order, and passage order occurred for both comprehension analyses and further suggest a possible passage effect.

The statistically significant main effect of instruction and large effect size for all comprehension questions indicates that RRV improved passage comprehension to a greater extent than did RR. Literal, inferential, and contextual questions incorporated vocabulary knowledge in either the wording of the question, the opportunity to express a vocabulary word, or in the case of contextual questions, the use of vocabulary words to explain passage context. Pre-taught vocabulary words were also inserted within highly connected story units used to form inferential comprehension questions. For these reasons, knowledge of vocabulary words was important to passage understanding and teaching key vocabulary was sufficient additional instruction to improve overall comprehension.

While RRV improved participants' comprehension more than RR, three-way interactions also suggest that under certain orders of instructional conditions, a passage

effect might have occurred. In these cases, Passage A was more difficult to comprehend and participants answered fewer questions correctly for this passage. Overall, however, participants' comprehension performance per passage was better in RRV except under one passage and order combination for literal and inferential questions-only.

The non-significant main effect of instruction for literal and inferential questions might suggest that by removing contextual questions from the analysis, RRV was only effective in improving comprehension when questions related to direct word knowledge were included. It may be that effects on literal and inferential comprehension were less robust than otherwise indicated by the significant main effect of instruction for all questions and large effect size. It should be noted, however, that removing contextual questions reduced the total questions from 12 to 10 per passage, and it is unclear whether results reflect the specific focus of the contextual questions or a reduced opportunity to provide answers overall. To this end, results for literal and inferential questions approached statistical significance, and it is unclear whether eliminating other non-contextual questions from the analysis might also indicate non-significant results.

Comprehension results in this study appear more promising than results in similar studies with ELLs. In this study, results generally indicate higher comprehension performance in RRV, although this result possibly varies by type of comprehension question. In contrast, little differentiation between conditions was observed in other studies that combined vocabulary and reading fluency instruction with ELLs (Malloy et al., 2007; Rousseau & Tam, 1993). Similarly, in repeated reading studies with native English speakers, comprehension outcomes were generally less robust compared to oral

reading fluency results (Therrien, 2004). It is possible that comprehension outcomes in this study were higher given more robust explicit vocabulary teaching. Unlike other studies, the current study provided examples of words within sentences, repetition to encourage phonological representation, and brief oral language activities. By comparison, explicit instruction in similar studies emphasized word definitions and occasionally provided example sentences. It is also possible that alignment in the current study between vocabulary words, their importance within passages, and their utility in answering comprehension questions was stronger than in similar studies. For this reason, participants might have had better opportunities to incorporate vocabulary knowledge within comprehension responses.

To further explore comprehension effects with ELLs, future studies should replicate procedures with larger numbers of participants, for extended periods of time, and with multiple comprehension measures. For example, literal, inferential, and contextual comprehension questions could be used in combination with multiple choice or MAZE assessments to provide additional indications of comprehension effects. Another improvement would be to include pretest comprehension assessments to compare pre-post growth and whether comprehension improvement varies across ability levels in response to instruction.

Vocabulary Word-Reading Outcomes

Results revealed statistically significant main effects for both instruction ($g = 0.31$) and time ($g = 1.59$). Overall, RRV improved vocabulary word-reading accuracy to a greater extent than did RR, and both conditions improved vocabulary word reading

from pretest to posttest. A two-way interaction between instruction and passage order indicates that RRV produced higher vocabulary word reading scores overall, and there was greater differentiation between scores on Passage B across conditions than for Passage A. The two-way interaction between instruction and time also indicates that performance at pretest was similar for both instructional conditions, but posttest scores were higher for RRV than RR. A three-way interaction indicates a similar passage effect as previously described, but did not negate the effect of RRV on vocabulary word reading accuracy.

Results for vocabulary word reading accuracy suggest that in addition to learning word meanings in RRV, participants read vocabulary words more accurately in response to instruction. The multiple interactions for vocabulary word reading suggest that results were also influenced by passage and condition orders to a greater extent than other variables. Similar to oral reading fluency, participants generally read more vocabulary words correctly on Passage A than Passage B. These outcomes suggest that teaching vocabulary word meanings with ELLs can also improve the accuracy of vocabulary word reading, although this improvement may vary by passage.

Comparisons to vocabulary word reading accuracy outcomes in other studies were unavailable because other researchers have not measured word reading accuracy; whether observed results are typical of similar instructional approaches is therefore unknown. Future studies should provide additional replication and include measures of vocabulary word reading accuracy in isolation and in context for additional information.

Oral Reading Fluency and Comprehension Relation for ELLs

The relation between oral reading fluency and comprehension for ELLs was not explicitly addressed in this study; however, some insight is provided in relation to the Theory of Automaticity (LaBerge & Samuels, 1974) and the Lexical Quality Hypothesis (Perfetti, 2007). Although main effects of instruction suggest that RRV did not improve participants' oral reading fluency beyond RR, vocabulary words were acquired in RRV and this condition generally produced higher comprehension scores. A specific trend also emerged across interactions that indicated Passage A was easier to read according to oral reading fluency and vocabulary word reading accuracy measures; comprehension scores, however, were reversed for this passage and indicated Passage A was more difficult to understand.

Inferences about Passage A should be made cautiously because it was one of only two passages used in a brief study. Further examination is warranted to verify that outcomes reflect the intended reading constructs and do not indicate measurement error, such as whether reading comprehension questions were more difficult for Passage A as opposed to the passage being harder to understand. While these possible constraints should be acknowledged, main effects of instruction indicate that comprehension improved to a greater extent in RRV without comparable oral reading fluency improvement. This outcome provides potential evidence that improvement in comprehension for ELLs is less dependent on improvement in oral reading fluency alone, and that word knowledge is an important component to promoting passage understanding.

To this end, all proficient reading likely requires a reasonable level of oral reading fluency, although it is perhaps insufficient to assume that improved fluency will enable comprehension with ELLs. This notion is consistent with the Theory of Automaticity (LaBerge & Samuels, 1974) that suggests the distribution of cognitive resources transfers from lower to higher-level processes to permit reading comprehension, but further indicates that it is not a uni-directional relation. Samuels (2006) promoted a specific definition of reading fluency that includes characteristics of speed, accuracy, and expression, but noted that fluency must result in the *simultaneous* decoding and comprehension of text (Alt & Samuels, 2011; Samuels, 2006). Results from this study similarly suggest that, for ELLs who are experiencing some (but not severe) difficulty with reading fluency, improvement in oral reading fluency is only necessary to the extent that comprehension simultaneously occurs, and that comprehension can improve without significant, corresponding improvement in oral reading fluency for these ELLs. Nevertheless, reading fluency remains important in developing efficient reading, which is a critical component to reading proficiency in general, in addition to its possible role in improving comprehension.

Vocabulary word knowledge appears to be one factor that improves comprehension in ELLs beyond reasonable oral reading fluency rates. For this reason, study results are consistent with the Lexical Quality Hypothesis (Perfetti, 2007) that suggests when promoting comprehension, knowledge components such as vocabulary words are important to teach in addition to sufficient reading automaticity. This notion also parallels the recommendation by Samuels (2006) to explicitly check for

comprehension instead of using speed, accuracy, and expression of oral reading fluency as indicators of its occurrence. As specified by the Lexical Quality Hypothesis and by results of this study, knowledge of word meanings may be a key factor worth addressing in combination with process-oriented fluency instruction.

Limitations

Several study limitations should be noted. Given the translational nature of this study, interpretation of results are best understood as a ‘proof of concept’ rather than an empirical validation of instruction. This study was brief in duration and had a small sample size, and future studies must address these limitations to appropriately infer intervention effectiveness.

Several aspects of the study’s design also limit interpretation of results. First, differences in instructional time between conditions was not equated, and RRV provided 10 additional minutes of instruction (40 min total) compared to RR (30 min total). An additional 10 minutes of unrelated instruction was not included in RR due to practical constraints in completing study sessions before the end of the school year. While the additional 10 minutes of instruction in RRV focused on teaching vocabulary, which does not directly address participants’ oral reading fluency and comprehension skills, it should be considered a limitation given that RRV provided additional involvement with passage content.

Second, instructional passages were not identical despite attempts to control for narrative structure, readability, length, and the syllable count and word types of pre-taught vocabulary words. Between-passage differences might have produced interactions

between dependent measures and although this threat was evenly distributed across participants as a result of counterbalancing, it represents a limitation given the use of only two instructional passages within a brief study.

A third limitation includes the lack of a comprehension pretest. Comprehension results were limited to posttest comparisons; thus, it is unknown whether comprehension growth within instructional conditions varied as a function of instruction. The extent to which comprehension-specific reading deficits were prevalent among participants was also unknown and might have interacted with outcomes of instructional conditions.

Last, given that pre-taught vocabulary words were rare to ensure their unfamiliarity among participants, it is possible that pre-taught words were more memorable or salient than traditional vocabulary words taught in third grade. Whether vocabulary word learning was enhanced beyond the effects of explicit vocabulary instruction by the inclusion of striking words is unknown and might have interacted with instructional outcomes.

Implications for Research

Results of this translational study suggest there is value in exploring embedded vocabulary instruction within repeated reading during more extended intervention studies. Specifically, results suggest that RRV may be an effective intervention worth examining with larger samples of ELLs and for longer durations. Future intervention studies should examine the effects of RRV across multiple weeks to compare oral reading fluency and comprehension growth over time. This extension would permit inferences regarding general intervention effectiveness and possible differentiation across dependent

variables. The nature of vocabulary instruction could also be examined by contrasting in-depth vocabulary instruction with brief, explicit instruction across time.

Future research should also include larger sample sizes of ELLs from multiple native languages and reading ability levels to promote generalizability of results. For studies of extended duration, a measure of general vocabulary knowledge, oral language proficiency, or the use of background knowledge assessments prior to instruction might offer additional perspective on the utility of teaching key words to participants with varying English proficiency. Whether and to what extent the effectiveness of RRV varies according to type of native language or reading and language proficiency levels should be examined. Profiles of participants for whom the intervention is or is not effective should be identified to suggest additional ways of modifying the instruction.

Future research should also address specific study improvements and next steps identified in the current study. As previously noted, studies should identify participant comprehension skills during screening and include multiple or different comprehension measures to comprehensively interpret outcomes. The current study only included proximal assessments of oral reading fluency and comprehension; future studies of longer duration should also include generalization passages to assess oral reading fluency. Generalization passages could be of low, moderate, or high-word overlap with instructional passages and would further indicate whether reading skill improves outside of intervention context. To this end, maintenance and transfer assessments that use novel, unrelated passages would help indicate the educational impact of RRV.

Implications for Practice

Study results indicate that pre-teaching key vocabulary words in combination with repeated reading holds promise to improve the vocabulary knowledge and reading comprehension of ELLs. While this finding merits additional empirical investigation, practitioners might consider addressing knowledge-related components such as vocabulary while promoting reading fluency and comprehension with ELLs. This process would involve the following steps: (1) pre-reading student material and selecting words that are likely unknown by ELLs, (2) identifying short definitions compatible with passage context, and (3) creating example sentences and brief oral language activities. Preliminary evidence from this study indicates that 10 minutes is sufficient for explicit vocabulary instruction to improve comprehension outcomes for ELLs within a repeated reading intervention.

An additional implication for practice includes explicitly checking whether and to what extent ELLs comprehend what they read. While the current study did not directly address the relation between oral reading fluency and comprehension for ELLs, there is some indication that comprehension can improve without corresponding improvement in oral reading fluency for some ELLs. To this end, practitioners might consider including comprehension questions during universal screenings of oral reading fluency with ELLs to inform instructional decisions and determine reading risk and proficiency. In addition, establishing reasonable reading fluency rates that permit simultaneous comprehension should be emphasized.

Conclusion

The purpose of this study was to examine whether including vocabulary instruction within repeated reading improved the reading fluency and comprehension of ELLs beyond repeated reading in isolation. Results indicate that RRV appears more effective than RR in improving the vocabulary knowledge, comprehension, and vocabulary word-reading accuracy of ELLs. There were no statistically significant differences observed for oral reading fluency, however. Combined, results of this translational study suggest that RRV may be an effective intervention worth examining with larger samples of ELLs for extended durations. Future research should examine profiles of participants for whom the intervention is and is not effective and include generalization, transfer, and maintenance assessments to further evaluate the educational utility of RRV. Theoretical implications of the study suggest that oral reading fluency instruction with ELLs should address word knowledge to maximize the benefit of improved processing efficiency, and this implication merits continued and enhanced examination to improve reading outcomes with ELLs.

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Appendix A

Measures

CBM-R Instructional Passage A, examiner copy

STUDENT COPY

Clara

Clara wanted to dance in a talent show. Dancing was her favorite thing to do. At school one day, she saw a talent show flyer. It said that any student could sign up. The show would be in front of the whole school. At the cessation of the show, everyone would get a ribbon. She decided to sign up that very day.

Clara was jittery about dancing for a big crowd. She decided to ask her friends to join her. Her friends loved to dance, too, and they could dance together. She already felt less nervous and more excited. Clara and her friends would convene each afternoon to practice. They learned a new dance to a fast, fun song. They even learned the words to sing along.

Clara and her friends needed costumes for the show. They decided to wear matching pants and sneakers. Each dancer got a distinct colored shirt to wear. Her mom helped the dancers paint on the shirts. Each dancer wrote her name on her shirt in big letters. Clara's shirt was red because it was her favorite color. The other dancers wore blue, yellow, and green.

The day of the show came and everyone was excited! Clara and the other dancers waited behind a curtain. There was a big crowd replete with friends and families. The crowd cheered loudly for the girls. When the dancers bowed, Clara was so happy. She went home after school and danced some more.

CBM-R Instructional Passage B, examiner copy

Cory and Mark

Cory wanted to buy a toy robot. His friend Mark had one that he really liked. The robot was raucous and had red eyes. It also had long arms and legs that moved. They played with it whenever Cory went over to socialize. It would be great if Cory got a robot, too. Then the boys could play with both robots.

Cory's dad said he could have a robot if he wanted. But he would have to help pay for it. He said Cory could do some adjunct chores. Then his dad would pay him money for the completed work. First, he helped his dad rake up some extra pinecones. The pinecones had fallen in the yard. Next, he helped his mom clean some closets in their house.

Cory made a meager amount of money and still needed more. His mom suggested a lemonade stand. Cory told Mark about it, and Mark said he would help. The two boys put a table in front of the house. They made a sign to sell lemonade. Finally, they made the drink with the help of Cory's mom.

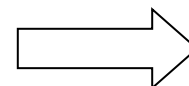
An abundance of people stopped by the lemonade stand. One woman bought two cups of lemonade. She said the drink tasted so nice and cool. Then the woman bought a third cup. The coins and dollar bills were piling up. Soon, Cory would have enough to buy his robot. He was thankful for everyone's help.

TQVM Screener

Name: _____

Circle 'yes' or 'no' for every question.

| | | |
|------------|-----------|--|
| 1. | Yes No | If you don't have any brothers, do you have an <u>abundance</u> of brothers? |
| 2. | Yes No | If it's time to go to sleep, is it the <u>cessation</u> of the day? |
| 3. | Yes No | Does the ocean have a <u>meager</u> amount of water? |
| 4. | Yes No | If you have the same shirt as your friend, is your shirt <u>distinct</u> ? |
| 5. | Yes No | Is a library <u>raucous</u> ? |
| 6. | Yes No | If you have many toys, do you have an <u>abundance</u> of toys? |
| 7. | Yes No | If you eat with your family, do you <u>convene</u> ? |
| 8. | Yes No | If there aren't enough copies for everyone, are there <u>adjunct</u> copies? |
| 9. | Yes No | If no one is on the bus, is the bus <u>replete</u> ? |
| 10. | Yes No | If you are happy and calm, are you <u>jittery</u> ? |
| 11. | Yes No | If you color by yourself, do you <u>convene</u> ? |



| | | | |
|------------|-----|----|---|
| 12. | Yes | No | If you get more recess than usual, is it <u>adjunct</u> recess? |
| 13. | Yes | No | Can a big test make you feel <u>jittery</u> ? |
| 14. | Yes | No | Do you read by yourself when you <u>socialize</u> ? |
| 15. | Yes | No | Are a cat and a dog <u>distinct</u> ? |
| 16. | Yes | No | If it's time to eat breakfast, is it the <u>cessation</u> of the day? |
| 17. | Yes | No | Is a sip of water a <u>meager</u> amount of water? |
| 18. | Yes | No | Is a fire drill <u>raucous</u> ? |
| 19. | Yes | No | If no more books fit in the bag, is the bag <u>replete</u> ? |
| 20. | Yes | No | Do friends <u>socialize</u> ? |

TQVM Posttest: Instructional Passage A

Name: _____

Story: Clara

| | | |
|------------|-----------|--|
| 1. | Yes No | If you eat with your family, do you <u>convene</u> ? |
| 2. | Yes No | If no one is on the bus, is the bus <u>replete</u> ? |
| 3. | Yes No | If it's time to eat breakfast, is it the <u>cessation</u> of the day? |
| 4. | Yes No | Are a cat and a dog <u>distinct</u> ? |
| 5. | Yes No | If you color by yourself, do you <u>convene</u> ? |
| 6. | Yes No | If it's time to go to sleep, is it the <u>cessation</u> of the day? |
| 7. | Yes No | Can a big test make you feel <u>jittery</u> ? |
| 8. | Yes No | If you have the same shirt as your friend, is your shirt <u>distinct</u> ? |
| 9. | Yes No | If no more books fit in the bag, is the bag <u>replete</u> ? |
| 10. | Yes No | If you are happy and calm, are you <u>jittery</u> ? |

TQVM Posttest: Instructional Passage B

Name: _____

Story: Cory & Mark

| | | |
|------------|-----------|--|
| 1. | Yes No | If there aren't enough copies for everyone, are there <u>adjunct</u> copies? |
| 2. | Yes No | Is a sip of water a <u>meager</u> amount of water? |
| 3. | Yes No | Is a library <u>raucous</u> ? |
| 4. | Yes No | If you have many toys, do you have an <u>abundance</u> of toys? |
| 5. | Yes No | If you get more recess than usual, is it <u>adjunct</u> recess? |
| 6. | Yes No | Does the ocean have a <u>meager</u> amount of water? |
| 7. | Yes No | Do friends <u>socialize</u> ? |
| 8. | Yes No | If you don't have any brothers, do you have an <u>abundance</u> of brothers? |
| 9. | Yes No | Is a fire drill <u>raucous</u> ? |
| 10. | Yes No | Do you read by yourself when you <u>socialize</u> ? |

Free Response Vocabulary Assessment: Passage A, examiner copy

Student: _____

Can you tell me what BLANK means?

Date: _____

Can you tell me any words that mean the same thing as BLANK?

| |
|---------------------|
| 1. Cessation |
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| 2. Jittery |
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| |
| 3. Convene |
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| |
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| |
| 4. Distinct |
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| |
| 5. Replete |
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| |
| |

Free Response Vocabulary Assessment: Passage B, examiner copy

Student: _____

Can you tell me what BLANK means?

Date: _____

Can you tell me any words that mean the same thing as BLANK?

| |
|---------------------|
| 1. Raucous |
| |
| |
| |
| |
| |
| |
| |
| 2. Socialize |
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| 3. Adjunct |
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| 4. Meager |
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| 5. Abundance |
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Comprehension Questions: Passage A, examiner copy**Clara, Comprehension Questions**

1. Why did Clara sign up for the talent show?
2. Why did Clara ask her friends to join her?
3. How did Clara and her friends learn a new dance?
4. What did Clara learn for the talent show besides a dance?
5. Who helped the dancers paint their shirts?
6. Where did the dancers wait before the show?
7. What kind of song did Clara dance to?
8. Why was there a crowd replete with friends and families?
9. What did Clara do when she got home?
10. What do you think was the most important idea in this story?
11. What does it mean that Clara would get a ribbon at the cessation of the show?
12. What does it mean that the dancers' shirts were distinct?

Comprehension Questions: Passage B, examiner copy**Cory & Mark, Comprehension Questions**

1. Why did Cory want to buy a robot?
2. Who said Cory could have a robot?
3. Why did Cory do some adjunct chores?
4. What chore did Cory do first?
5. What did Mark's robot look like?
6. What chore did Cory do with his Mom?
7. Why did Cory still need more money?
8. Where was the lemonade stand?
9. How did the coins and dollar bills pile up?
10. What do you think was the most important idea in this story?
11. What does it mean that Mark's robot was raucous?
12. What does it mean that Cory and Mark would socialize?

Fidelity of Implementation Checklist
Repeated Reading + Vocabulary Intervention

Student ID: _____

Fidelity Observer: : _____

| Intervention Sequence | Yes (1) | No (0) | NA |
|--|------------|-----------|----|
| Introduction | | | |
| Teacher explains the purpose of the session. <i>For example:</i> learning words to better understand the story; reading not too fast but not too slow | | | |
| Teacher explains anticipated student behaviors: <i>For example:</i> reading the story four times, trying to read more words than the last time, graphing the number of words read correctly. | | | |
| Intervention Sequence | Yes (1) | No (0) | NA |
| Delivery | | | |
| <u>Reading 1:</u> Student reads entire passage out loud. | | | |
| <ul style="list-style-type: none"> • If student struggles to a read word in 3 seconds, teacher tells student the word. | | | |
| Teacher provides number of words read correctly and shows student the number on the graph. | | | |
| Teacher provides error correction procedure for every incorrectly read word: <ul style="list-style-type: none"> • “This word is __. What word is this? Good, that word is__.” | | | |
| <u>Model Reading:</u> Teacher reads entire passage out loud with appropriate rate, accuracy, and expression. | | | |

Previewed Vocabulary

During modeling, teacher displays 5 picture vocab cards in the following way:

1. Reads word as it occurs in the sentence.
2. Quickly defines word:
For example: "BLANK is a BLANK. Here is a picture of BLANK." (shows picture card)
3. Re-reads word as it occurred in the sentence.

| Intervention Sequence | Yes (1) | No (0) | NA |
|------------------------|------------|-----------|----|
| Reviews Picture Card 1 | | | |
| Reviews Picture Card 2 | | | |
| Reviews Picture Card 3 | | | |
| Reviews Picture Card 4 | | | |
| Reviews Picture Card 5 | | | |

Pre-taught Vocabulary

1. Teacher pronounces word word while displaying card and provides definition:
*Example: "This word is *fatigued*. *Fatigued* means tired"*
2. Student reads the word out loud 4 times
3. Teacher uses word in example sentence & restates the definition:
*Example: "After I ran around the house five times, I was very *fatigued*. I was very tired."*
4. Teacher uses two oral language questions to engage student with word.
Example: "Tell me about a time you were fatigued"
5. Teacher asks what the word means and provides reinforcement or correction:
*Example: "Good, Fatigued means Tired" or,
"Fatigued means Tired, what does Fatigued mean?" "Good, Tired"*

| Intervention Sequence | Yes (1-5) | No 0 | NA |
|---|--------------|---------|----|
| <p>Teacher Pre-Teaches <u>Word 1</u> according to above procedure.</p> <p>Teacher includes step #s:</p> <p>Teacher misses step #s:</p> | | | |
| <p>Teacher Pre-Teaches <u>Word 2</u> according to above procedure.</p> <p>Teacher includes step #s:</p> <p>Teacher misses step #s:</p> | | | |
| <p>Teacher Pre-Teaches <u>Word 3</u> according to above procedure.</p> <p>Teacher includes step #s:</p> <p>Teacher misses step #s:</p> | | | |
| <p>Teacher Pre-Teaches <u>Word 4</u> according to above procedure.</p> <p>Teacher includes step #s:</p> <p>Teacher misses step #s:</p> | | | |
| <p>Teacher Pre-Teaches <u>Word 5</u> according to above procedure.</p> <p>Teacher includes step #s:</p> <p>Teacher misses step #s:</p> | | | |
| <p>Teacher reviews the pronunciation and definitions of the five pre-taught words.</p> | | | |

| Intervention Sequence | Yes (1) | No (0) | NA |
|---|--------------------|-------------------|-----------|
| Reading 2: Student reads entire passage out loud. | | | |
| <ul style="list-style-type: none"> If student struggles to a read word in 3 seconds, teacher tells student the word. | | | |
| Teacher provides number of words read correctly and shows student the number on the graph. | | | |
| Teacher provides error correction procedure for every incorrectly read word: <ul style="list-style-type: none"> “This word is __. What word is this? Good, that word is__.” | | | |
| Intervention Sequence | Yes (1) | No (0) | NA |
| Reading 3: Student reads entire passage out loud. | | | |
| <ul style="list-style-type: none"> If student struggles to a read word in 3 seconds, teacher tells student the word. | | | |
| Teacher provides number of words read correctly and shows student the number on the graph. | | | |
| Teacher provides error correction procedure for every incorrectly read word: <ul style="list-style-type: none"> “This word is __. What word is this? Good, that word is__.” | | | |
| Intervention Sequence | Yes (1) | No (0) | NA |
| Reading 4: Student reads entire passage out loud. | | | |
| <ul style="list-style-type: none"> If student struggles to a read word in 3 seconds, teacher tells student the word. | | | |
| Teacher provides number of words read correctly and shows student the number on the graph. | | | |
| Teacher provides error correction procedure for every incorrectly read word: <ul style="list-style-type: none"> “This word is __. What word is this? Good, that word is” | | | |

Appendix B

Materials

CBM-R Instructional Passage A, participant copy

STUDENT COPY

Clara

Clara wanted to dance in a talent show. Dancing was her favorite thing to do. At school one day, she saw a talent show flyer. It said that any student could sign up. The show would be in front of the whole school. At the cessation of the show, everyone would get a ribbon. She decided to sign up that very day.

Clara was jittery about dancing for a big crowd. She decided to ask her friends to join her. Her friends loved to dance, too, and they could dance together. She already felt less nervous and more excited. Clara and her friends would convene each afternoon to practice. They learned a new dance to a fast, fun song. They even learned the words to sing along.

Clara and her friends needed costumes for the show. They decided to wear matching pants and sneakers. Each dancer got a distinct colored shirt to wear. Her mom helped the dancers paint on the shirts. Each dancer wrote her name on her shirt in big letters. Clara's shirt was red because it was her favorite color. The other dancers wore blue, yellow, and green.

The day of the show came and everyone was excited! Clara and the other dancers waited behind a curtain. There was a big crowd replete with friends and families. The crowd cheered loudly for the girls. When the dancers bowed, Clara was so happy. She went home after school and danced some more.

CBM-R Instructional Passage B, participant copy

STUDY COPY

Cory and Mark

Cory wanted to buy a toy robot. His friend Mark had one that he really liked. The robot was raucous and had red eyes. It also had long arms and legs that moved. They played with it whenever Cory went over to socialize. It would be great if Cory got a robot, too. Then the boys could play with both robots.

Cory's dad said he could have a robot if he wanted. But he would have to help pay for it. He said Cory could do some adjunct chores. Then his dad would pay him money for the completed work. First, he helped his dad rake up some extra pinecones. The pinecones had fallen in the yard. Next, he helped his mom clean some closets in their house.

Cory made a meager amount of money and still needed more. His mom suggested a lemonade stand. Cory told Mark about it, and Mark said he would help. The two boys put a table in front of the house. They made a sign to sell lemonade. Finally, they made the drink with the help of Cory's mom.

An abundance of people stopped by the lemonade stand. One woman bought two cups of lemonade. She said the drink tasted so nice and cool. Then the woman bought a third cup. The coins and dollar bills were piling up. Soon, Cory would have enough to buy his robot. He was thankful for everyone's help.

Repeated Reading Graph

Name: _____
 Class: _____

**Reading
Graph**

| | | | | |
|-----|-------------|-------------|-------------|-------------|
| 200 | | | | |
| 195 | | | | |
| 190 | | | | |
| 185 | | | | |
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| 55 | | | | |
| 50 | | | | |
| 45 | | | | |
| 40 | | | | |
| 35 | | | | |
| 30 | | | | |
| | 1st Reading | 2nd Reading | 3rd Reading | 4th Reading |

Pre-taught Vocabulary Word Cards

| | |
|------------------|------------------|
| Cessation | Raucous |
| Jittery | Socialize |
| Convene | Adjunct |
| Distinct | Meager |
| Replete | Abundance |

Pre-taught Vocabulary Information Sheet: Passage A

Clara, Pretaught Vocab Examiner Info Sheet

Cessation

- "the end"
- Everyone clapped at the cessation of the concert -they clapped at the end of the concert.
- How do you feel at the cessation of the school year?
- What happens at the cessation of summer?

Jittery

- "nervous"
- Maria feels jittery about trying out for her soccer team -she feels very nervous.
- What is something that makes you feel jittery?
- What's something that if you lost it, you would feel jittery?

Convene

- "get together with others"
- During the holidays, I like to convene with my family -I like to get together with my family.
- What are some things you do when you convene?
- When might you NOT want to convene?

Distinct

- "different"
- Chocolate and vanilla are distinct ice cream flavors-they are different ice cream flavors.
- What are distinct types of weather?
- What kinds of distinct flavors do you like?

Replete

- "full"
- I checked inside the cookie jar and it was replete with cookies -it was full with cookies.
- If you had a replete piggy bank, what would you do?
- What would you do with a replete box of chocolates?

Pre-taught Vocabulary Information Sheet: Passage B**Cory & Mark, Pre-taught Vocab Examiner Info Sheet****Raucous:**

- “Loud”
- During a thunderstorm I saw lightning and heard a raucous boom – I heard a loud boom.
- What’s something that’s really raucous?
- If you’re trying to do your homework, do you want it to be raucous or not raucous?

Socialize:

- “talk to others”
- Sometimes Maria gets in trouble during class because she loves to socialize- she loves to talk to others.
- When is a good time to socialize?
- Who do you like to socialize with?

Adjunct:

- “Extra”
- I needed a pencil for my homework but didn’t have one. I asked my friend if she had an adjunct pencil – I asked if she had an extra pencil
- Would you rather have adjunct markers or adjunct pencils?
- If you could have adjunct food at lunch, what would you choose?



Meager:

- “Small amount”
- Yesterday I felt very sick and only ate a meager amount of food – I only ate a small amount of food.
- Would you be happy if you had a meager amount of fun?
- Do you like to use a meager amount of ketchup with French fries or not a meager amount?

Abundance:

- “A lot”
- I went to the Mall of America and there was a myriad of people there- there was a lot of people there.
- What other places might have a myriad of people there?
- Would you rather have a myriad of candy or a myriad of ice cream?

Previewed Vocabulary Picture Cards

| | |
|---|---|
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Previewed Vocabulary Information Sheet: Passage A**Clara, Previewed Examiner Info Sheet****Flyer**

-A paper note you put on a wall

Ribbon

-An award for a good job

Costumes

-Outfits you wear in a show

Curtain

-Long cloth hung on a stage

Bowed

-To bend forward when people clap

Previewed Vocabulary Information Sheet: Passage B

Cory & Mark, Previewed Examiner Info Sheet

Robot

-Metal toy with a head, arms, and legs

Rake

-Long tool used to collect leaves

Pinecones

-Big brown seeds that grow on trees

Lemonade

-A cold drink made with lemons

Coins

-Small, hard money

Appendix C

Scoring Rubric

Free Response Vocabulary Scoring Rubric

| Free Response Vocabulary Assessment KEY Cory and Mark | | |
|---|--|------------------|
| Raucous | | |
| Full Credit • Loud | Partial Credit | No Credit |
| Socialize | | |
| Full Credit • Talk to others | Partial Credit • You make relations • To be with other kids • Like meet new people | No Credit |
| Adjunct | | |
| Full Credit • Extra | Partial Credit | No Credit |
| Meager | | |
| Full Credit • Small amount | Partial Credit • Little | No Credit |
| Abundance | | |
| Full Credit • A lot • A whole bunch | Partial Credit | No Credit |
| Clara | | |
| Cessation | | |
| Full Credit • The end | Partial Credit | No Credit |
| Jittery | | |
| Full Credit • Nervous | Partial Credit • Trembling | No Credit |
| Convene | | |
| Full Credit • Get together with others | Partial Credit | No Credit |
| Distinct | | |
| Full Credit • Different • Means they're not the same | Partial Credit | No Credit |
| Replete | | |
| Full Credit • Full | Partial Credit | No Credit |

TQVM Scoring Rubric Passage A

Name: _____

Story: Clara

| | | |
|-----|---|--|
| 1. | <input checked="" type="radio"/> Yes <input type="radio"/> No | If you eat with your family, do you <u>convene</u> ? |
| 2. | <input type="radio"/> Yes <input checked="" type="radio"/> No | If no one is on the bus, is the bus <u>replete</u> ? |
| 3. | <input type="radio"/> Yes <input checked="" type="radio"/> No | If it's time to eat breakfast, is it the <u>cessation</u> of the day? |
| 4. | <input checked="" type="radio"/> Yes <input type="radio"/> No | Are a cat and a dog <u>distinct</u> ? |
| 5. | <input type="radio"/> Yes <input checked="" type="radio"/> No | If you color by yourself, do you <u>convene</u> ? |
| 6. | <input checked="" type="radio"/> Yes <input type="radio"/> No | If it's time to go to sleep, is it the <u>cessation</u> of the day? |
| 7. | <input checked="" type="radio"/> Yes <input type="radio"/> No | Can a big test make you feel <u>jittery</u> ? |
| 8. | <input type="radio"/> Yes <input checked="" type="radio"/> No | If you have the same shirt as your friend, is your shirt <u>distinct</u> ? |
| 9. | <input checked="" type="radio"/> Yes <input type="radio"/> No | If no more books fit in the bag, is the bag <u>replete</u> ? |
| 10. | <input type="radio"/> Yes <input checked="" type="radio"/> No | If you are happy and calm, are you <u>jittery</u> ? |

TQVM Scoring Rubric Passage B

Name: _____

Story: Cory & Mark

| | | |
|-----|---|--|
| 1. | Yes <input type="radio"/> No <input checked="" type="radio"/> | If there aren't enough copies for everyone, are there <u>adjunct</u> copies? |
| 2. | <input checked="" type="radio"/> Yes <input type="radio"/> No | Is a sip of water a <u>meager</u> amount of water? |
| 3. | Yes <input type="radio"/> No <input checked="" type="radio"/> | Is a library <u>raucous</u> ? |
| 4. | <input checked="" type="radio"/> Yes <input type="radio"/> No | If you have many toys, do you have an <u>abundance</u> of toys? |
| 5. | <input checked="" type="radio"/> Yes <input type="radio"/> No | If you get more recess than usual, is it <u>adjunct</u> recess? |
| 6. | Yes <input type="radio"/> No <input checked="" type="radio"/> | Does the ocean have a <u>meager</u> amount of water? |
| 7. | <input checked="" type="radio"/> Yes <input type="radio"/> No | Do friends <u>socialize</u> ? |
| 8. | Yes <input type="radio"/> No <input checked="" type="radio"/> | If you don't have any brothers, do you have an <u>abundance</u> of brothers? |
| 9. | <input checked="" type="radio"/> Yes <input type="radio"/> No | Is a fire drill <u>raucous</u> ? |
| 10. | Yes <input type="radio"/> No <input checked="" type="radio"/> | Do you read by yourself when you <u>socialize</u> ? |

Comprehension Scoring Rubric Guidelines

1. Identify correct information

- If at least one piece of information is accurate in a student's response, it can be granted either partial or full credit (depending on correct answer criteria).
- Tense does not matter in responses unless a different word-ending causes a switch from noun to verb, or verb to noun.
- If a student self-corrects himself/herself and provides different information at the end of his/her response, this information is taken as the final response (regardless of whether it is correct or not).

Then check...

2. Subject/Object references

- If the subject/object of students' responses is stated in the question (e.g., robot), it does NOT need to be explicitly referenced in responses to receive full or partial credit.

Q. Why did Cory want to buy a robot?

A. "Because his friend had one that he really liked." **FULL CREDIT**

- If the subject/object of students' responses is NOT stated in the question, it NEEDS explicit reference in responses to receive full credit. If unstated and the answer is otherwise correct, partial credit is granted.

Q. Why did Cory do some adjunct chores?

A. "Because he wanted to earn enough money to buy it." **PARTIAL CREDIT**

3. Extra information and Spoiler information

- Information in students' responses that is "extra", even if incorrect, does not discredit the student's response if otherwise correct.

Q. What did the robot look like?

A. "The robot was raucous, and had red eyes. It had teeth and claws too."

Extra info = "It had teeth and claws too". **FULL CREDIT**

(According to response criteria, fully correct responses must demonstrate at least TWO attributes of the robot. Because the student correctly identified 1) the

robot was raucous, and 2) had red eyes, full credit is given despite extra, inaccurate information.

- HOWEVER, if extra information incorrectly modifies the otherwise accurate information in a student's response, it would be considered a "spoiler" and discredit the student's response.

Q. What did the robot look like?

A. "The robot had green eyes and long arms"

Spoiler: "green eyes". **PARTIAL CREDIT**

(According to response criteria, fully correct responses must demonstrate at least TWO attributes of the robot. Because "green eyes" is a spoiler (the robot had red eyes), this response only has one correct attribute (long arms) and therefore receives partial credit.

Comprehension Scoring Rubric, Passage A

| CLARA | | |
|---|--|---|
| 1. WHY DID CLARA SIGN UP FOR THE TALENT SHOW? | | |
| Causal Analysis: | | |
| <ul style="list-style-type: none"> ▪ She wanted to dance in the talent show. ▪ She saw a flyer that said anyone could sign up. | | |
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1</p> <ul style="list-style-type: none"> ❖ She <u>wanted to dance</u> (in the show) • Bc she wanted to dance. • Bc she wanted to enter the talent show to dance. • Bc she really wanted to dance. And was good at it. • Bc she liked to dance and it was her favorite thing to do. Wanted to dance and show everyone. <p>Correct Answer #2</p> <ul style="list-style-type: none"> ❖ She <u>saw a flyer</u> that said <u>she could sign up</u>. | <p>Partial Answer #1</p> <ul style="list-style-type: none"> ❖ Dancing was her favorite thing to do. • Dancing was her favorite thing to do. <p>Partial Answer #2</p> <ul style="list-style-type: none"> ❖ She loved to dance. • She loved to dance. • She loved dancing – it was her favorite thing to do. • She liked to dance; her friends liked to dance. • She liked to dance. <p>Partial Answer #3</p> <p>Spoiler:</p> <ul style="list-style-type: none"> ❖ Bc she liked to dance, it was her fav thing. Saw a show flyer, wanted to be in it <u>because you get a ribbon</u> | <p>Incorrect Answer #1</p> <p>Incorrect idea</p> <ul style="list-style-type: none"> • To show off her dancing, to see if she could actually get the crown. • Bc she want to get a ribbon • Bc each of them would get ribbons and she wanted a ribbon and decided to sign up. <p>Incorrect Answer #2</p> <p>Not mentioned in text</p> <ul style="list-style-type: none"> • Bc she likes talent shows; wants to show her family that she wants to be a dancer |

| 2. WHY DID CLARA ASK HER FRIENDS TO JOIN HER? | | |
|--|---|--|
| Causal Analysis: | | |
| ▪ Because she was jittery about dancing for a big crowd. | | |
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1</p> <ul style="list-style-type: none"> ❖ She was <u>jittery/Nervous</u> (about dancing for a big crowd) • Bc she was nervous and when friends danced with her she wasn't nervous. • Not to be nervous; not to be jittery. • Bc they liked to dance too. Bc she was like nervous and got less nervous. • Bc she was so nervous she wanted her friends to be with her. • Bc she was jittery • Bc if she was alone she would be nervous but when she asked she felt less nervous and more excited. | <p>Partial Answer #1</p> <p>Responses demonstrate at least ONE accurate idea, although it does not meet the correct answer criteria:</p> <ul style="list-style-type: none"> ❖ Her friends loved dancing • Bc her friends loved dancing. • Bc her friends knew how to dance too • Bc they loved to dance too. <p>Partial Answer #2</p> <ul style="list-style-type: none"> ❖ She was by herself • Bc she was all alone. • She wanted to get a group together • Bc they can dance together. • Bc she didn't want to be alone. Be with others to make it <u>cooler</u>. • Bc she didn't want to dance alone in a big crowd. <p>Partial Answer #3</p> <p>Spoiler:</p> <ul style="list-style-type: none"> ❖ <u>Might</u> get nervous. <p>Partial Answer #4</p> <p>Near-misses</p> <ul style="list-style-type: none"> • Bc she felt more comfortable. | <p>Incorrect Answer #1</p> <p>Incorrect idea</p> <ul style="list-style-type: none"> • Bc she cannot be the only one; others are with her. <p>Incorrect Answer #2</p> <p>Not mentioned in text</p> <ul style="list-style-type: none"> • Bc it would be more exciting with her friends instead of just herself. • Bc she was shy and she didn't have nobody to dance with her. • Bc she thought it would be fun. |

3. HOW DID CLARA AND HER FRIENDS LEARN A NEW DANCE?

Causal Analysis:

- They would convene each afternoon to practice.

| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
|---|--|--|
| <p>Correct Answer #1 Must have:</p> <ul style="list-style-type: none"> ❖ <u>Convened</u> AND ❖ <u>Practiced</u> • By convening and trying/practicing. • They were practicing. They would convene and practice. <p>Correct Answer #2</p> <ul style="list-style-type: none"> ❖ <u>Practiced.</u> • They practiced every morning in her house. • Bc they practiced at home. • They learned a fun song. They practiced after school every day. • They rehearsed at Clara's house | <p>Partial Answer #1 Responses demonstrate only ONE aspect.</p> <ul style="list-style-type: none"> ❖ Convening • By convening they got together. • They went every time and got together. <p>Partial Answer #1 Responses demonstrate at least ONE accurate idea, although it does not meet the correct answer criteria:</p> <ul style="list-style-type: none"> • They found a new song and then they danced new activities that they just learned. • They were deciding and then they found a new dance that was fun and fast and learned how to sing it. | <p>Incorrect Answer #1 Not mentioned in text</p> <ul style="list-style-type: none"> • They kept dancing. Heard new songs, looked at videos. • By the song they made up. <p>Incorrect Answer #2 Incorrect Idea</p> <ul style="list-style-type: none"> • They learned a fast, fun song. • By signing up in a talent show. • By a short, fun song. • By helping each other. |

| 4. WHAT DID CLARA LEARN FOR THE TALENT SHOW BESIDES A DANCE? | | |
|---|---|--|
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1</p> <ul style="list-style-type: none"> ❖ <u>Words to sing</u> along. • She learned the lyrics to a fun song. • She learned to sing the song. | <p>Partial Answer #1</p> <p>Theme Near-Miss:</p> <ul style="list-style-type: none"> • Don't be nervous and if you're scared just do it. • You need to practice. Don't give up. • You can work together instead of working by yourself. • That she needs to be brave. She needs to know the songs and the dance. The song she was gonna pick and the dance she was gonna pick. • She learned to not be nervous • Even though you're scared to go on stage you can always try. • When you practice it turns out good. • To not always be jittery. Be happy that you do your best. • To be happy or to not be nervous. <p>Partial Answer #2</p> <p>Mentioned in text</p> <ul style="list-style-type: none"> • That she was less nervous. • A fast, fun song <p>Partial Answer #3</p> <p>Beg to End Sequence Near-Miss:</p> <ul style="list-style-type: none"> • She learned um a dance, and moves, and to sing things, and new t-shirts with her name on it. | <p>Incorrect Answer #1</p> <p>Theme misses</p> <ul style="list-style-type: none"> • She didn't have to do everything perfect. • Dance can be anyone's favorite. • Being in front of crowd isn't bad • It doesn't matter that you're afraid. <p>Incorrect Answer #2</p> <p>Not mentioned in text</p> <ul style="list-style-type: none"> • She learned that she can do every new dance that she can do and that she loved to dance. • She learned that she was dancing and had fun. • It would be more excited by having other people so she doesn't get alone. <p>Incorrect Answer #3</p> <p>Incorrect Idea</p> <ul style="list-style-type: none"> • Bc she really wanted to get a ribbon. • She learned how to dance. |

| 5. WHO HELPED THE DANCERS PAINT THEIR SHIRTS? | | |
|--|--|--|
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1</p> <ul style="list-style-type: none"> ❖ Clara's <u>Mom</u>. • Mom • The Mom. | <p>Partial Answer #1</p> <p>Spoiler</p> <ul style="list-style-type: none"> • Their Mom. • Her mom. | <p>Incorrect Answer #1</p> <ul style="list-style-type: none"> • Other kids |
| 6. WHERE DID THE DANCERS WAIT BEFORE THE SHOW? | | |
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1</p> <p>Must have:</p> <ul style="list-style-type: none"> ❖ <u>Behind</u> AND ❖ the <u>curtain</u>. • Behind the big curtains. | <p>Partial Answer #1</p> <p>One Aspect</p> <ul style="list-style-type: none"> ❖ Curtain • The curtains. • The curtain <p>Partial Answer #2</p> <p>Responses demonstrate at least ONE accurate idea, although it does not meet the correct answer criteria:</p> <ul style="list-style-type: none"> • They wait in the stage • They wait at the school <p>Partial Answer #3</p> <p>Spopiler</p> <ul style="list-style-type: none"> • In the curtain. | <p>Incorrect Answer #1</p> <p>Incorrect Idea</p> <ul style="list-style-type: none"> • Outside. • For everyone to come. |
| 7. WHAT KIND OF SONG DID CLARA DANCE TO? | | |
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1</p> <p>Must have:</p> <ul style="list-style-type: none"> ❖ <u>Fast</u> And ❖ <u>Fun</u> (song) • A fast and fun song | <p>Partial Answer #1</p> <p>Responses demonstrate only ONE aspect.</p> <ul style="list-style-type: none"> ❖ Fast Or ❖ Fun • A fast dance. • A fast song • A fun song. • A fun, short song. • A fast happy song. • A fast, funny song. | <p>Incorrect Answer #1</p> <p>Incorrect Idea</p> <ul style="list-style-type: none"> • With her friends • A funny song |

8. WHY WAS THERE A CROWD REplete WITH FRIENDS AND FAMILIES?

Causal Analysis:

- The day of the show came.
- The show was in front of the whole school.

| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
|---|---|--|
| <p>Correct Answer #1 Must have:</p> <ul style="list-style-type: none"> ❖ The <u>day of the show</u> came / there was a <u>talent show</u> OR ❖ The <u>show was in front of the whole school</u> • Bc it was a talent show. Time for parents to see how kids do. • Bc it was a talent show. • Bc they wanted to see the show too. • Bc families want to see the talent show, and friends too. • Bc many people were in the talent show, and watching. • Maybe it was the first time they did a talent show at their school • Bc there was a talent show and they saw her dance in it • To see the show. | <p>Partial Answer #1</p> <ul style="list-style-type: none"> ❖ Only specifies dancing or daughters • Because they wanted to see them/ girls/daughters dance • Bc they want to see the daughters or sons dance. • Bc they were so excited to see them dance. • Bc they wanted to see them dance. • Bc they came to see the people dance. • Bc they were gonna see everybody. Moms/dads came to see them dance. • To see their sons and daughters dance – be proud. • Bc all the ppl wanted to see because there’s probably daughters in it; they want to see them in the talent show. <p>Partial Answer #2</p> <ul style="list-style-type: none"> ❖ Doesn’t specify “talent show” • People like to see their friends perform. They want to cheer them up. • Because they wanted to see <u>it</u> • Everyone was there to see <u>it</u>. • Bc in that school, all the people will be there and families too from them. | <p>Incorrect Answer #1 Wrong Idea</p> <ul style="list-style-type: none"> • Bc it was a ‘convene’ • Bc maybe at school they called from home. • Ok, let me show what I can do for the crowd. • Cheering • Bc Clara’s mom could be there and wants to take photos/videos of her. • Because they were excited • Bc they wanted to dance • Bc the first dance was for the whole entire school. • They went to see how clara’s doing/singing. |

| 9. WHAT DID CLARA DO WHEN SHE GOT HOME? | | |
|---|---|--|
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1</p> <ul style="list-style-type: none"> ❖ She <u>danced</u>. • She danced some more | | |
| 10. WHAT DO YOU THINK WAS THE MOST IMPORTANT IDEA IN THE STORY? | | |
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1 Theme:</p> <ul style="list-style-type: none"> • If you're ever scared just go for it- don't be scared. • That even if you like to do something and you're really nervous, you can still do it with someone who you think could really help you. • To not always be worried. Be happy and do your best <p>Correct Answer #2 Resolution Outcome:</p> <ul style="list-style-type: none"> • When she went to dance in front of the whole school. <p>Correct Answer #3 Beg to End Sequence:</p> <ul style="list-style-type: none"> • About the talent show, she's getting ready for it <p>Correct Answer #4 Main Goal:</p> <ul style="list-style-type: none"> • That Clara wanted to dance in a show. | <p>Partial Answer #1 Theme near-misses:</p> <ul style="list-style-type: none"> ❖ Dance-focused • To help other people to dance, like not to be nervous. • To not dance alone; dance with others. • That you need to practice dancing more so nobody falls or so you can't get it wrong. • To invite your friends because it wouldn't be much nervous. <p>Vague Language</p> <ul style="list-style-type: none"> • To be with others instead of you just being alone. • When you try something, you can go on with it • To not be nervous <p>Partial Answer #2 Main actions/events near-misses:</p> <ul style="list-style-type: none"> • Her dance. • Talent show • When they all danced together <p>Partial Answer #3 Beg to End near-misses:</p> <ul style="list-style-type: none"> • That she started being <u>embarrassed</u> and at the end she wasn't • Learning a fast, fun song | <p>Incorrect Answer #1 Not mentioned in text:</p> <ul style="list-style-type: none"> • To send in for the show • To get there in time. • You need a group of teens to help someone to dance. <p>Incorrect Answer #2 Incorrect Idea:</p> <ul style="list-style-type: none"> • You have to be afraid that you perform. • They would all wear the same thing. <p>Incorrect Answer #3 Theme misses:</p> <ul style="list-style-type: none"> • That if you like to do something you should do it more than you think. <p>Incorrect Answer #4 Vague Language</p> <ul style="list-style-type: none"> • Dancing • Dance, because it means you're doing work • Dance. • Dancing • That she liked to dance |

| 11. WHAT DOES IT MEAN THAT CLARA WOULD GET A RIBBON AT THE CESSATION OF THE SHOW? | | |
|---|---|--|
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1</p> <p>❖ <u>End</u> (of show)</p> <ul style="list-style-type: none"> • She's gonna get a ribbon at the end of the show if she wins. • Like at the end of the show. • She would get a reward for being good at the end of the show. | <p>Partial Answer #1</p> <p>Near-Miss</p> <ul style="list-style-type: none"> • Because when she was <u>DONE</u> they were gonna give her a ribbon because she did a nice job. | <p>Incorrect Answer #1</p> <p>Incorrect Idea</p> <ul style="list-style-type: none"> • Bc they win. • Bc she was dancing and everyone would get one • Would get like a reward. • She wants a ribbon • So they could put their names up. • That she did a good job. • When you get a ribbon you're doing good or being nice. • Bc she did great and did her best thing • She participated for the ribbon. |
| 12. WHAT DOES IT MEAN THAT THE DANCERS' SHIRTS WERE DISTINCT? | | |
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1</p> <p>❖ <u>Different</u>.</p> <ul style="list-style-type: none"> • They were different colors or different stuff. | <p>Partial Answer #1</p> <p>Responses demonstrate only ONE aspect.</p> <p>❖ Differences in color</p> <ul style="list-style-type: none"> • It means that it wasn't the same color • Like different colors • That they were not the same- that there were colors that nobody had ever seen. Like parrots are distinct. • Ones was green, yellow, blue, and red. | <p>Incorrect Answer #1</p> <p>Incorrect Idea</p> <ul style="list-style-type: none"> • The same. • They colored it. Clara colored it red, her friends green, blue, yellow. • Looks colorful. • They got to wear costumes for the talent show. • They didn't have color. • That they were colorful. • They got to paint their shirts themselves |

Comprehension Scoring Rubric, Passage B

| CORY & MARK | | |
|---|--|--|
| 1. Why did Cory want to buy a robot? | | |
| Causal Analysis: | | |
| <ul style="list-style-type: none"> ▪ His friend Mark had one that he really liked ▪ He really liked his friend's robot | | |
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1 Must have:</p> <ul style="list-style-type: none"> ❖ <u>Friend</u> (Mark) <u>had one</u> AND ❖ He <u>liked</u> Mark's robot OR ❖ They could <u>play together</u> <p>Correct Answer #2</p> <ul style="list-style-type: none"> ❖ So Cory and Mark <u>could play with both robots</u> (together) <p>Correct Answer #3</p> <ul style="list-style-type: none"> ❖ He liked Mark's robot. • Bc his friend Mark had a robot; he wanted one so they could play together with both of the robots. • Bc then he and his friend Mark had both robots then they could both play with robots and have a battle or something. • When Cory goes to Mark's house they can play with both robots, and he thought it was cool. • So Cory and the other boy could play together with both of the robots. | <p>Partial Answer #1 Responses demonstrate only ONE aspect:</p> <ul style="list-style-type: none"> • Because his friend had one (a robot) • Bc Mark had a robot already • Bc his friend has one that's really cool. <p>Partial Answer #2 Responses demonstrate at least ONE accurate idea, although it does not meet the correct answer criteria:</p> <ul style="list-style-type: none"> • Bc he could play with Mark's- with 2 robots • Bc to play with his friend. With his robot, well his friend that has a robot too. That he could play with his friend with his robot. | <p>Incorrect Answer #1 Incorrect idea:</p> <ul style="list-style-type: none"> • So his friend can play with another one. • Because Mark had the same one and Mark really liked it. <p>Incorrect Answer #2 Vague language:</p> <ul style="list-style-type: none"> • So he can play with Mark • So the boys can have both robots <p>Incorrect Answer #3 Not mentioned in text:</p> <ul style="list-style-type: none"> • Bc he liked robots • It was fun to play with |

| 2. Who said Cory could have a robot? | | |
|--|---|--|
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1</p> <ul style="list-style-type: none"> ❖ Cory's <u>dad</u> <ul style="list-style-type: none"> • His Dad. • Dad | | <p>Incorrect Answer #1</p> <p>Incorrect idea</p> <ul style="list-style-type: none"> • His Mom. I forgot • His friend |
| 3. Why did Cory do some adjunct chores? | | |
| Causal Analysis: | | |
| <ul style="list-style-type: none"> ▪ To help pay for the robot | | |
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1</p> <p>Must have:</p> <ul style="list-style-type: none"> ❖ <u>Money/pay/buy/earn</u> AND ❖ <u>Robot</u> <ul style="list-style-type: none"> • So he can get money for the robot. • To have enough money to buy the robot • Bc he wanted to get badly the robot but didn't got enough money for it • So he can get more money to help pay for the robot to his dad. • He had to earn the robot. He had to buy lemonade • So his dad can pay him for the robot. So he can get a robot. • So he could help pay for the robot | <p>Partial Answer #1</p> <p>Responses demonstrate only ONE aspect.</p> <ul style="list-style-type: none"> ❖ Robot: <ul style="list-style-type: none"> • To get a robot. • So he can get a robot ❖ Money/pay/buy/earn <ul style="list-style-type: none"> • So he could get money from his dad. • To win some money • Because the more he does, the more money he'll do; if he does less he won't have enough money. • Because he didn't have enough money to buy the same <u>one</u>. • Because his dad said he would have to help pay for <u>it</u>. • To get money • So he could have money | <p>Incorrect Answer #2</p> <p>Incorrect idea</p> <ul style="list-style-type: none"> • So then he could get a lot of money to pay for his own stuff. |

| 4. What chore did Cory do first? | | |
|---|--|---|
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1 Must have:</p> <ul style="list-style-type: none"> ❖ <u>Raked</u> AND ❖ <u>Pinecones</u> <ul style="list-style-type: none"> • He raked pinecones • Helped his dad rake the yard, pinecones fell down from the tree. A pinecone tree. | <p>Partial Answer #1 Responses demonstrate only ONE aspect.</p> <ul style="list-style-type: none"> ❖ Pinecones: <ul style="list-style-type: none"> • Pile up the pinecones. • Helping dad get pinecones. • He did the <u>rakes</u> of pinecones. • Picked up some pinecones. • He helped his dad clean up the pinecones. ❖ Rake: <ul style="list-style-type: none"> • Rake some leaves. • Raked leaves with dad. • Help his dad rake the umm... • He did like leaf for the rake <p>Partial Answer #2 Responses demonstrate at least ONE accurate idea, although it does not meet the correct answer criteria:</p> <ul style="list-style-type: none"> • He helped his dad clear the backyard. I can't remember how. | <p>Incorrect Answer #1 Incorrect idea</p> <ul style="list-style-type: none"> • The closet <p>Incorrect Answer #2 Vague language</p> <ul style="list-style-type: none"> • To clean up. |

| 5. What did Mark's robot look like? | | |
|--|---|---|
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1 Must have at least TWO of the following attributes:</p> <ul style="list-style-type: none"> ❖ <u>red eyes</u> ❖ <u>long arms</u> ❖ <u>legs moved</u> ❖ <u>raucous</u> <ul style="list-style-type: none"> • His name was raucous, red eyes, had long arms and legs that were long. • His eyes red, arms long, legs can move. • Raucous, red eyes, long hands and legs • It looked red eyes, it had long legs, and long arms. | <p>Partial Answer #1 Responses demonstrate only ONE correct attribute:</p> <ul style="list-style-type: none"> • It had red eyes and I don't know what else. • Red eyes, robot could move, looked raucous • He was a rock, no, I can't remember. It had red eyes; I think it was a rockstar. • Head, body, arms, noisy robot that could move. • It had red eyes, it had arms and legs. <p>Partial Answer #2 Spoilers:</p> <ul style="list-style-type: none"> • Long arms, and <u>long</u> red eyes, and long legs. | <p>Incorrect Answer #1 Incorrect idea</p> <ul style="list-style-type: none"> • Metal • Like his friend |
| 6. What chore did Cory do with his Mom? | | |
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1 Must have:</p> <ul style="list-style-type: none"> ❖ <u>Cleaned</u> AND ❖ <u>Closets</u> <ul style="list-style-type: none"> • He cleaned closets with his mom. | <p>Partial Answer #1 Responses demonstrate only ONE aspect.</p> <ul style="list-style-type: none"> ❖ Cleaned • He cleaned something. Plus lemonade ❖ Closets • Closet <p>Partial Answer #2 ❖ Spoilers:</p> <ul style="list-style-type: none"> • He cleaned his <u>mom's</u> closet • Cleaned some of the <u>clothes</u> in the house • He cleaned his mom's closet | <p>Incorrect Answer #1 Incorrect idea</p> <ul style="list-style-type: none"> • Made a lemonade stand. • Clean the closets, NO, do lemonade stand |

| 7. Why did Cory still need more money? | | |
|--|---|---|
| Causal Analysis: | | |
| <ul style="list-style-type: none"> ▪ He only made a meager amount of money ▪ He was trying to earn enough to buy a robot | | |
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1</p> <ul style="list-style-type: none"> ❖ Only made <u>small (meager) amount of money</u> • He had meager money. Still needed more. • He only had a little bit of money • He only had a little money and he needed a lot more. <p>Correct Answer #2</p> <p>Must have:</p> <ul style="list-style-type: none"> ❖ He was trying to earn <u>enough</u> money AND ❖ To <u>buy/get</u> a robot • To have enough to buy the robot • Bc for the robot he was gonna get, if he had enough money. • To get the same amount as the robot. • Bc he didn't earn a lot of money for his robot | <p>Partial Answer #1</p> <p>Responses demonstrate only ONE aspect.</p> <ul style="list-style-type: none"> ❖ Robot (buying/getting): • For the robot • To buy the robot • So he could buy the robot • So he can get the robot because the robot must cost a lot. ❖ Not enough money: • He didn't have enough to pay for <u>it</u> • Bc she might have had \$10 but <u>it</u> cost like \$20 • Bc it was just little chores. He needed more money because <u>it</u> costed too much: • Because maybe the robot cost a lot and he only got like \$10 <p>Partial Answer #2</p> <ul style="list-style-type: none"> ❖ Spoiler: • Bc he hasn't <u>completed</u> the robot yet, still needed a little more. | <p>Incorrect Answer #1</p> <p>Incorrect idea</p> <ul style="list-style-type: none"> • Only a few people came to lemonade stand • His mom suggested to do a lemonade stand <p>Incorrect Answer #2</p> <p>Not mentioned in text</p> <ul style="list-style-type: none"> • Because it cost a lot. • Because he didn't do that many chores. • Because the robot cost a lot of money |

| 8. Where was the lemonade stand? | | |
|--|--|---|
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1 Must have:</p> <ul style="list-style-type: none"> ❖ In <u>front</u> of Cory's <u>house</u> • Front of the house • Outside his front house | <p>Partial Answer #1 Responses demonstrate at least ONE accurate idea, although it does not meet the correct answer criteria:</p> <ul style="list-style-type: none"> • Outside the house • By his house. • Beside the house • At Cory's house | <p>Incorrect Answer #1 Not mentioned in text</p> <ul style="list-style-type: none"> • In the sidewalk of Cory's house. • In the street • In the yard or something? • Outside the yard • In front of his yard • In his front yard. • At their house, at front of yard. |

| 9. How did the coins and dollar bills pile up? | | |
|---|--|--|
| Causal Analysis: ▪ An abundance of people stopped by the lemonade stand (and bought lemonade) | | |
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1 Must have:</p> <ul style="list-style-type: none"> ❖ Lemonade (stand) AND ❖ People came (a lot) OR ❖ (Buying) lemonade <ul style="list-style-type: none"> • People came and bought lemonade • Bc there was a lot of people coming for lemonade. <p>Correct Answer #2</p> <ul style="list-style-type: none"> ❖ People bought a lot of lemonade. • Bc people kept on buying a lot of lemonade and they liked it. | <p>Partial Answer #1 Responses demonstrate only ONE aspect.</p> <ul style="list-style-type: none"> ❖ (Many) people: <ul style="list-style-type: none"> • Because a lot of people were going <u>there</u>. • There was an abundance of people. The woman bought 2 cups, said 'so good' then bought a 3rd. • When people saw the sign and started lining up and there was a bunch of people. One woman bought 2 then 3 cups. • There was a lot of people <ul style="list-style-type: none"> ❖ Lemonade (Stand) • By the lemonade stand <p>Partial Answer #2</p> <ul style="list-style-type: none"> ❖ Specific woman bought lemonade <ul style="list-style-type: none"> • A woman bought two cups said 'good', then his money started piling up soon get the robot. • By selling lemonade, with a lady she liked lemonade. • By the woman, she liked lemonade <p>Partial Answer #3</p> <ul style="list-style-type: none"> ❖ Spoiler: • By people buying more lemonade <u>stand</u>. | <p>Incorrect Answer #1 Incorrect idea</p> <ul style="list-style-type: none"> • He counted them • By the help of his mom, because it tasted so nice. • To abundance. • Like an abundance. • They had like bills and coins together and they piled them up. • Bc the lemonade was so cool and fresh, it must have been a hot day. • A raucous of people came <p>Incorrect Answer #2 Vague language</p> <ul style="list-style-type: none"> • Because she kept on getting some and kept getting more and more money. • From the woman that gave him money • Like people put a whole bunch in front and took some |

| 10. What do you think was the most important idea in this story? | | |
|---|--|---|
| Causal Analysis: | | |
| <ul style="list-style-type: none"> ▪ Corey made enough money to get his robot ▪ Theme, Goal, Resolution/Outcome, Beginning to End Story Sequencing | | |
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1 Theme:</p> <ul style="list-style-type: none"> • If you want something, you have to earn it (e.g. earned robot by doing chores) <p>Correct Answer #2 Goal:</p> <ul style="list-style-type: none"> • Buying the robot • Cory getting money for the robot • Money for his robot • Money. They need to use money so they can buy the robot. • Cory getting money so he can buy the robot like his friend has, so they can play together with the robots. • That he helped a little bit for his dad, that he helped pay for the robot for his dad. • Corey wanted to get the robot. <p>Correct Answer #3 Beg to End Sequence:</p> <ul style="list-style-type: none"> • How you can get a toy with your own money | <p>Partial Answer #1 Theme, near-miss:</p> <ul style="list-style-type: none"> • That he actually helped his mom and dad to clean up for a robot. • To do chores so you can have money <p>Partial Answer #2 Goal, near-miss:</p> <ul style="list-style-type: none"> • Earning more money • Saving up money. <p>Partial Answer #3 Beg to End Sequence, near-miss:</p> <ul style="list-style-type: none"> • Corey wanted a robot so he abundance of coins. • He made money and do chores. <p>Partial Answer #4 Main action(s):</p> <ul style="list-style-type: none"> • When he had to help his parents do chores • To make a lemonade stand to get more money • To do the lemonade stand so she can pile up the money more. | <p>Incorrect Answer #1 Vague Idea</p> <ul style="list-style-type: none"> • Doing jobs • The lemonade • Lemonade stand <p>Incorrect Answer #2 Incorrect idea</p> <ul style="list-style-type: none"> • Cory didn't have to buy a robot like his friend because he doesn't have to follow his friend. • Recording. <p>Incorrect Answer #3 Goal, misses:</p> <ul style="list-style-type: none"> • To help their mom and dad • Helping his family |

| 11. What does it mean that Mark's robot was raucous? | | |
|---|---|---|
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1 Must have:</p> <ul style="list-style-type: none"> ❖ <u>Loud</u> (or synonym) • It made a loud noise or something • It says words and was loud | <p>Partial Answer #1 Spoiler:</p> <ul style="list-style-type: none"> • That's too loud | <p>Incorrect Answer #1 Incorrect idea</p> <ul style="list-style-type: none"> • Means metal • By the name that he named him. • It has red eyes |
| 12. What does it mean that Cory and Mark would socialize? | | |
| FULLY CORRECT (2) | PARTIALLY CORRECT (1) | INCORRECT (0) |
| <p>Correct Answer #1 Must have:</p> <ul style="list-style-type: none"> ❖ <u>Talk</u> (or synonym) • Means talk. They talked. • They would go to his friend's house and talk to each other. • Like they would be together and talk or play together. • They would talk about his robot or something. • They would chat. | <p>Partial Answer #1 They did something together (played).</p> <ul style="list-style-type: none"> • To play together. • Spend time together? Do something? I'm not sure. • Visit • They would play together or to do something together. <p>Partial Answer #2 Spoiler:</p> <ul style="list-style-type: none"> • To talk...about the robot. | <p>Incorrect Answer #1 Incorrect idea</p> <ul style="list-style-type: none"> • To help him get coins and dollars • Like something he will give him extra. Like a pen extra or robot extra. • That he washes the clothes because if he didn't wash the clothes they'd be dirty/stinky. <p>Incorrect Answer #2 Doing something specific together.</p> <ul style="list-style-type: none"> • Cory would go to the house to play with the robot. • They would meet and play with the robot. • So they can both play with the robots. • Like play with one's toy |

Appendix D

Results Figures

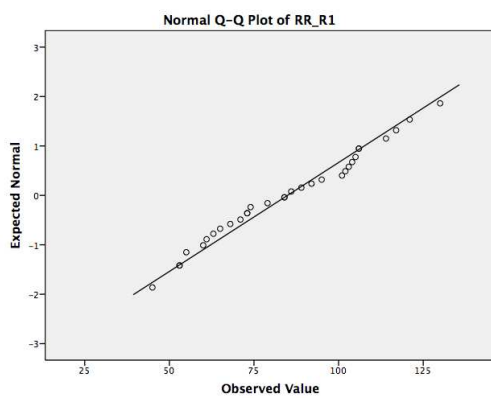
Residual Q-Q Plots

Figure D1. Q-Q Plot of RR Oral Reading Fluency Pretest

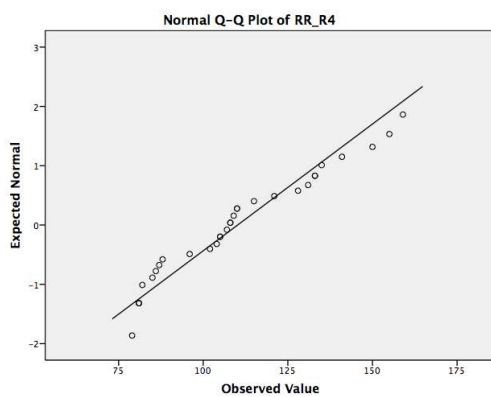


Figure D2. Q-Q Plot of RR Oral Reading Fluency Posttest

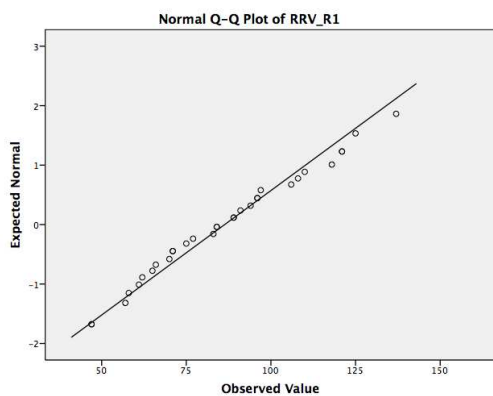


Figure D3. Q-Q Plot of RRV Oral Reading Fluency Pretest

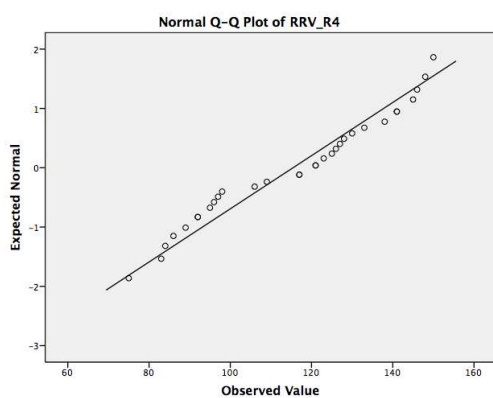


Figure D4. Q-Q Plot of RRV Oral Reading Fluency Posttest

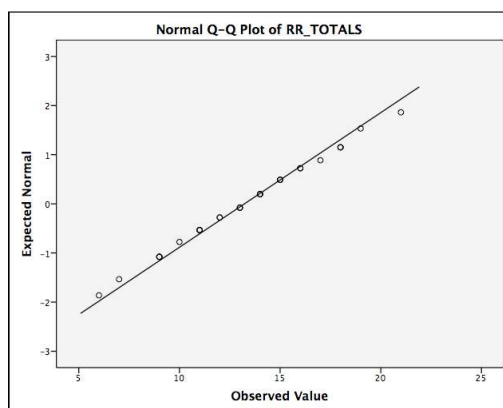


Figure D5. Q-Q Plot of RR Comprehension Posttest

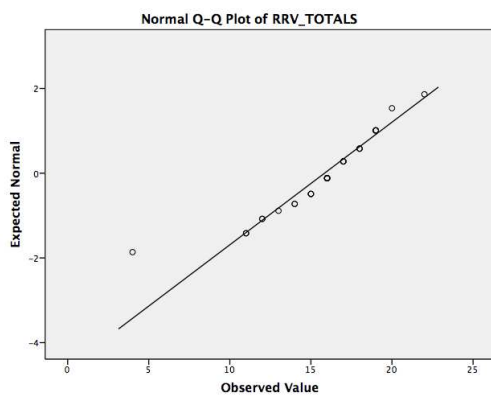


Figure D6. Q-Q Plot of RRV Comprehension Posttest

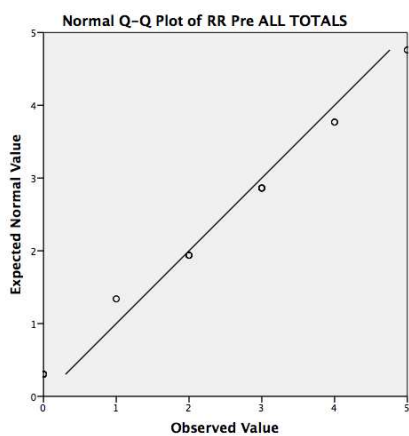


Figure D7. Q-Q Plot of RR Vocabulary Word Reading Accuracy Pretest

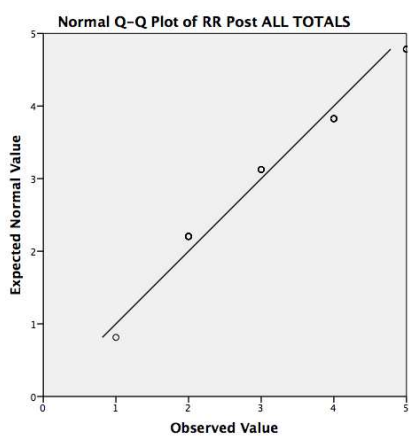


Figure D8. Q-Q Plot of RR Vocabulary Word Reading Accuracy Posttest

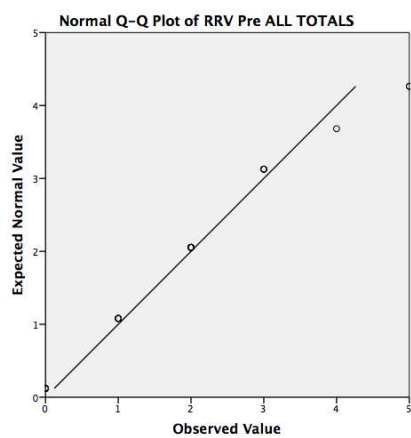


Figure D9. Q-Q Plot of RRV Vocabulary Word Reading Accuracy Pretest

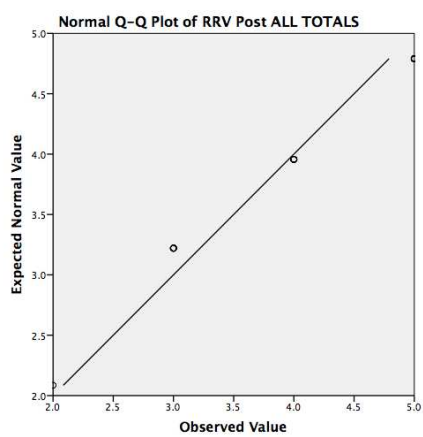


Figure D10. Q-Q Plot of RRV Vocabulary Word Reading Accuracy Posttest

Interaction Graphs

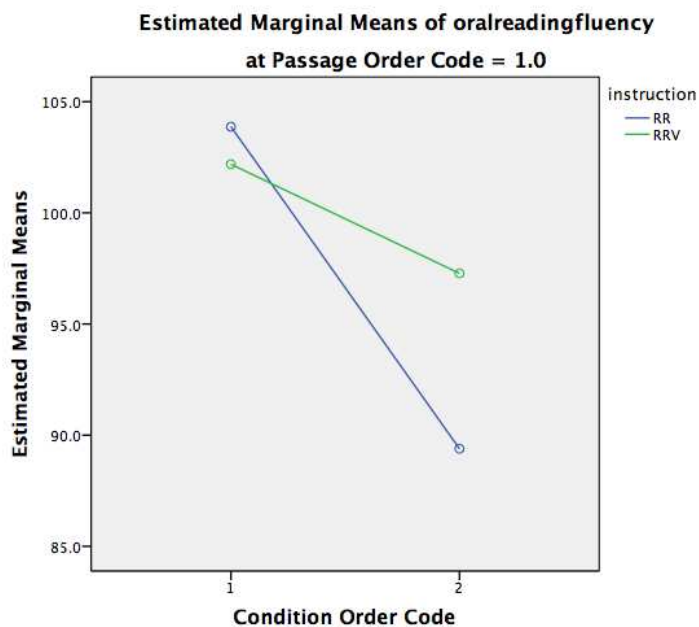


Figure D11. Oral Reading Fluency Three-way Interaction: Instruction*Condition Order*Passage Order: Passage A first, Passage B second

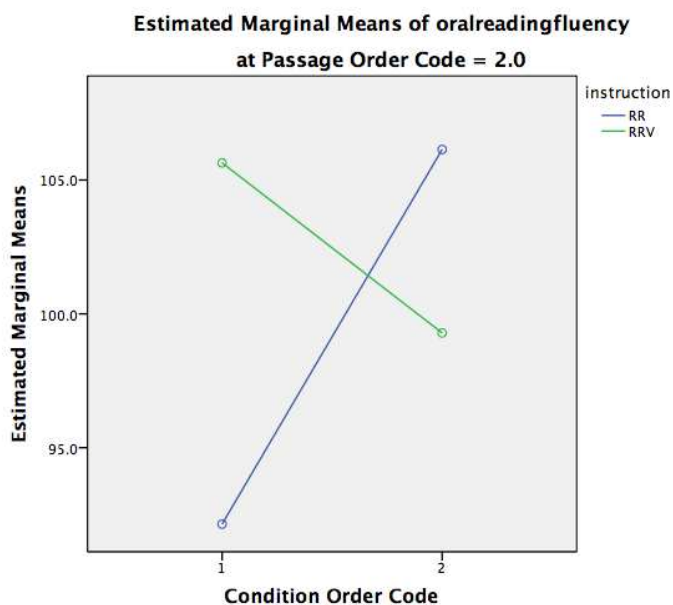


Figure D12. Oral Reading Fluency Three-way Interaction: Instruction*Condition Order*Passage Order: Passage B first, Passage A second

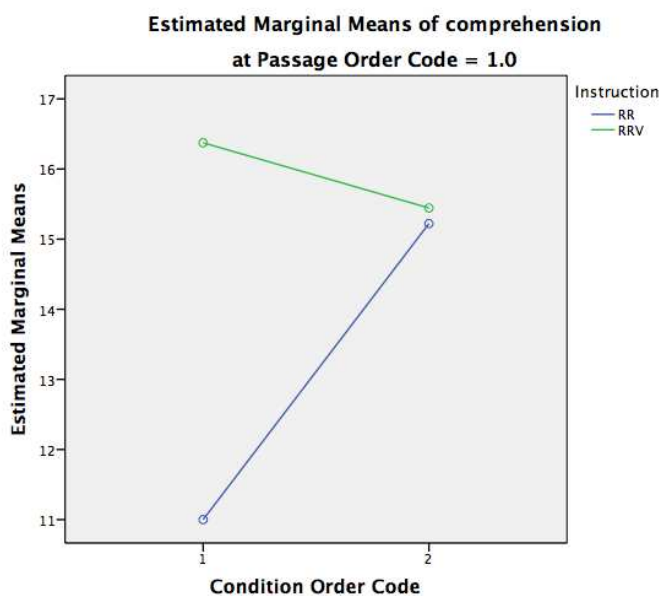


Figure D13. Comprehension Three-way Interaction: Instruction*Condition Order*Passage Order: Passage A first, Passage B second

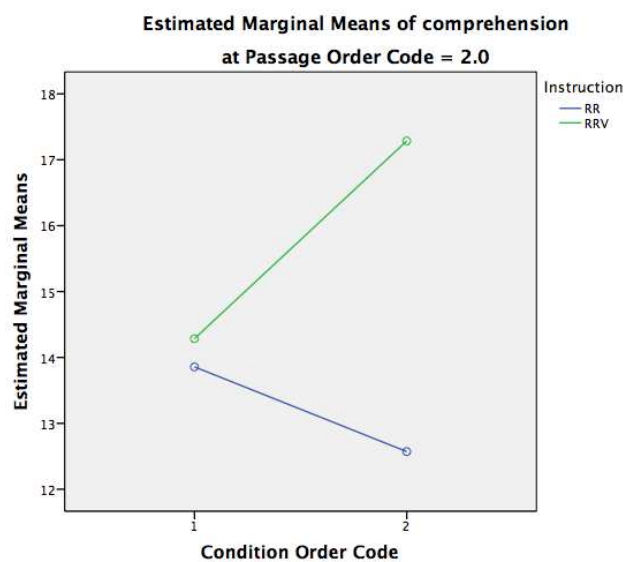


Figure D14. Comprehension Three-way Interaction: Instruction*Condition Order*Passage Order: Passage B first, Passage A second

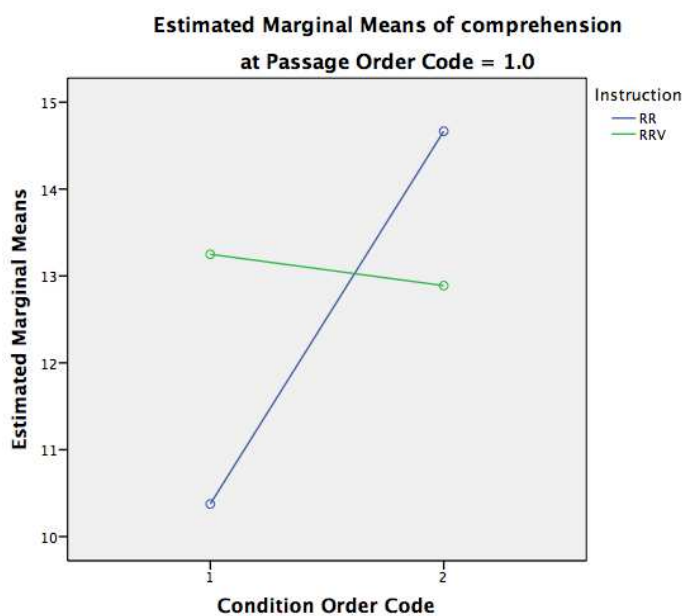


Figure D15. Literal and Inferential Comprehension Three-way Interaction:
Instruction*Condition Order*Passage Order: Passage A first, Passage B second

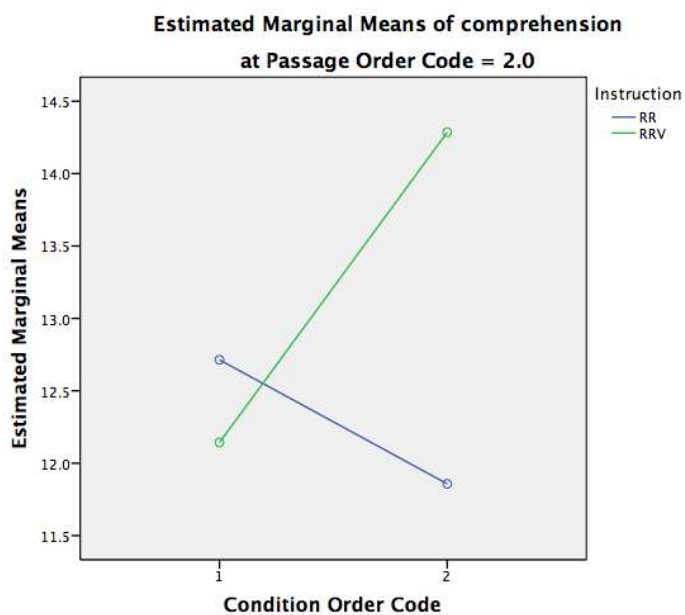


Figure D16. Literal and Inferential Comprehension Three-way Interaction:
Instruction*Condition Order*Passage Order: Passage B first, Passage A second

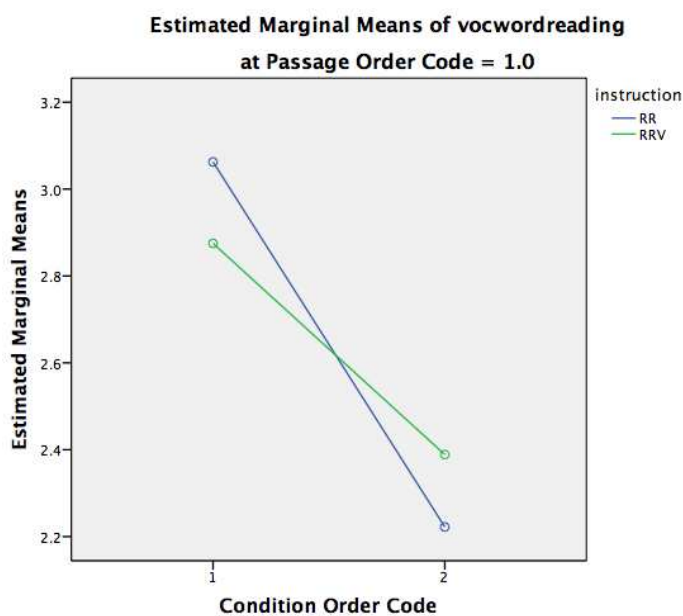


Figure D17. Vocabulary Word Reading Accuracy Three-way Interaction:
Instruction*Condition Order*Passage Order: Passage A first, Passage B second.

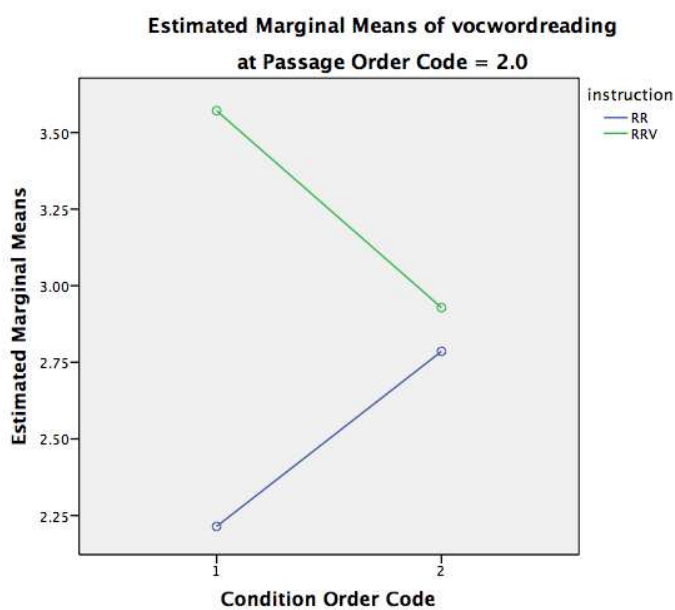


Figure D18. Vocabulary Word Reading Accuracy Three-way Interaction:
Instruction*Condition Order*Passage Order: Passage B first, Passage A second.

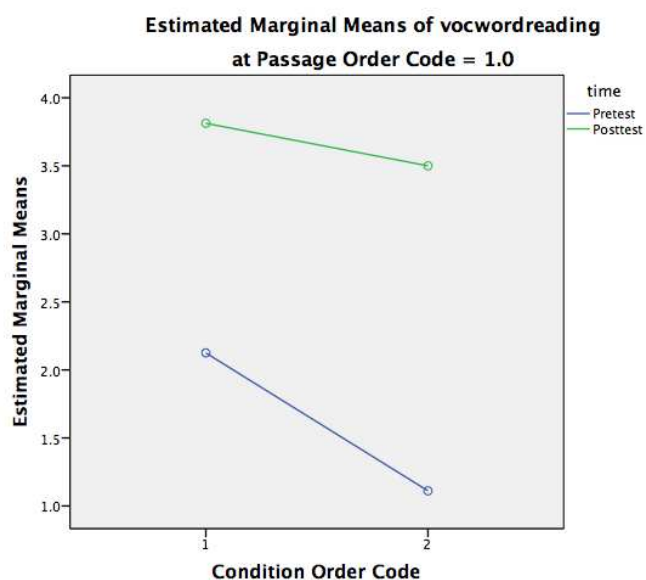


Figure D19. Vocabulary Word Reading Accuracy Three-way Interaction: Time*Condition Order*Passage Order: Passage A first, Passage B second.

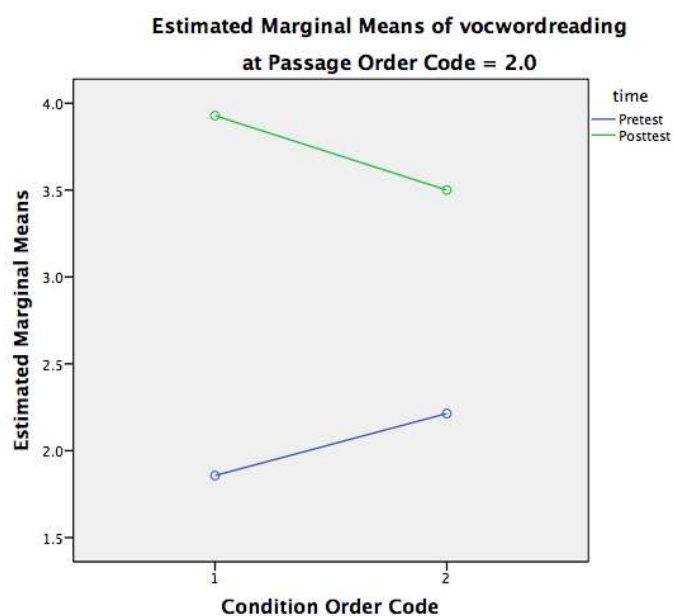


Figure D20. Vocabulary Word Reading Accuracy Three-way Interaction: Time*Condition Order*Passage Order: Passage B first, Passage A second.

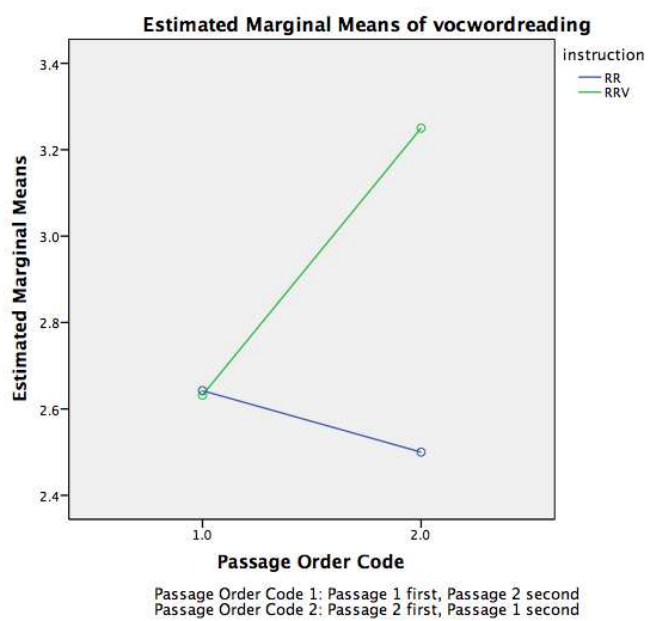


Figure D21. Vocabulary Word Reading Accuracy Two-way Interaction: Instruction*Passage Order

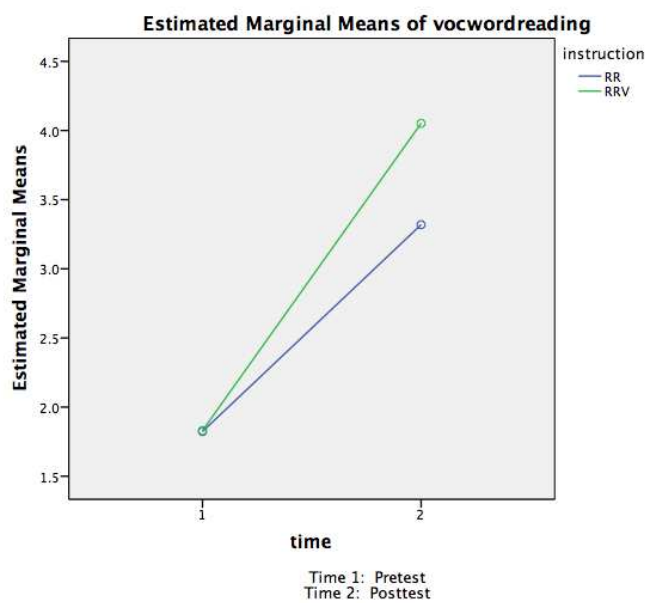


Figure D22. Vocabulary Word Reading Accuracy Two-way Interaction: Instruction* Time