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Predictors of Latino English Learners' Reading Comprehension Proficiency

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Poor literacy achievement among English learners has contributed significantly to their high dropout rates, poor job prospects, and high poverty rates. The National Literacy Panel on Language Minority Children and Youth has suggested that English learners benefit from the same direct, systematic instruction in the five essential components of reading shown effective for native-English-speaking students: phonemic awareness, phonics, oral reading fluency, vocabulary, and comprehension. Implementing effective reading instructional practices for English learners may reduce the literacy achievement gap between English learners and native English speakers. In this study, we used multiple regression to examine data for 1,376 third-grade Latino English learners to determine the strength of oral English proficiency, oral reading fluency, and academic vocabulary knowledge as predictors of reading comprehension proficiency. Findings of this study indicate a mismatch between English learners' instructional needs and a widely used reading program component, assessment of words correct per minute (as a measure of oral reading fluency). Significant conclusions of this study suggest that educators seeking to promote the reading comprehension proficiency of Latino English learners consider using words correct per minute assessments and activities cautiously and strive to allocate more time for instruction and assessment of the prosodic dimension of oral reading fluency and academic vocabulary knowledge and skills.

Keywords: *oral English proficiency, oral reading fluency, academic vocabulary knowledge, reading comprehension proficiency, English learners*

Introduction

English learners make up a significant and growing percentage of students in public schools across the United States. Recent research on this student population and the instructional environments in which they are found has provided cause for concern within three separate but highly related contexts. First, in the classroom context, English learners are not achieving parity with their English-speaking peers in reading comprehension proficiency (Francis, Rivera, Lesaux, Kieffer, & Rivera, 2006; Koo, Becker, & Kim, 2014). Second, in the societal context, poor literacy achievement among English learners has contributed significantly to their high dropout rates, poor job prospects, and high poverty rates (August & Shanahan, 2006; Johnson, Strange, & Madden, 2010). Finally, in the research context, the paucity of available research literature related to effective reading instructional practices for English learners may be contributing to the literacy achievement gap (August & Shanahan, 2006).

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Without a sound base of research-supported instructional strategies for teaching reading comprehension skills to English learners, well-intentioned and caring teachers may only be bringing many of their English learners to a word call level of reading. While being able to read with automaticity is essential to being able to comprehend the meaning of text, automaticity alone does not automatically produce reading comprehension (Allington, 2006; Kuhn, Schwanenflugel, & Meisinger, 2010). This may be especially true in the case of bilingual students in English-only classrooms who are learning to read for the first time in a second language, where such fundamentals as receptive and expressive verbal language and awareness of grammatical structures of written text may be stumbling blocks to reading comprehension. Thus, for many English learners, reading may become an ineffectual exercise that does not produce the intended result of understanding the text because the reader has not gained proficiency in one or more of the critical components of the reading process.

Recent influential studies have shown a large positive correlation between oral reading fluency measured in words correct per minute (WCPM) and reading comprehension on standardized tests for general populations of students (Good, Simmons, & Kame'enui, 2001; Pinnell et al., 1995). Thus, the use of WCPM assessments has become an accepted practice for all students, including English learners, despite the lack of research supporting a positive correlation between English learners' WCPM scores and their reading comprehension proficiency scores (Palumbo & Willcutt, 2006). Consequently, it is reasonable to expect that teachers and administrators might emphasize the importance of achieving grade-level WCPM goals with all their students.

The purpose of our study, therefore, was to investigate the strength of the relationship between reading comprehension proficiency of Latino English learners and their oral reading fluency, as well as their oral English language proficiency and academic vocabulary knowledge. We also discuss the implications of the findings for instructional practices that support increased reading comprehension proficiency. Our study addresses the literacy gap that Latino English learners continue to experience despite educational and political reforms designed to narrow that gap. Moreover, our study addresses a gap in research regarding which commonly used measures of English language and reading proficiency predict Latino English learners' reading comprehension.

Theoretical Foundation

Reading comprehension proficiency requires development of both word-level comprehension and text-level comprehension skills. Word-level skills consist of automatic decoding, oral vocabulary sufficient to know the meaning of the words being decoded, and suitable knowledge of the content vocabulary. Text-level skills include recognizing sequence of events, identifying main idea and details, making inferences and generalizations, and drawing conclusions. Although rapid and accurate decoding skills are foundational in the early stages of learning to read, their isolated role in developing reading comprehension proficiency is limited and may even decrease as word decoding becomes more automatic (Droop & Verhoeven, 2003). However, assessments of oral reading fluency demonstrate elaboration of decoding and word recognition skills, thus serving as a measure of proficiency in these skills in the context of connected text. This provides a rationale for not including a measure of isolated decoding and word recognition skills in this study. Thus, the purpose of this study is to inform instructional practices that develop comprehension skills of Latino English learners beyond the initial phase of learning how to read. We do not seek to further explore the essential role of explicit instruction in phonics and word recognition that is already thoroughly grounded in the National Reading Panel's (NRP's) research report (National Institute of Child Health and Human Development [NICHD], 2000). For the purposes of this study, it is assumed that

proficiency in oral reading fluency also signals mastery of phonics and word recognition skills, as supported by the existing literature. Our study, therefore, is grounded in theories that inform reading instructional practices related to (a) oral reading fluency, (b) oral English language proficiency, (c) academic vocabulary knowledge, and (d) reading comprehension.

Oral Reading Fluency Theory

The NRP identified oral reading fluency as one of five essential components of the reading process, along with phonemic awareness, phonics, vocabulary, and comprehension, and recommended comprehensive reading programs that include fluency instruction and practice as a bridge to proficient reading comprehension (NICHD, 2000). The rationale for this is that students who are able to read words in text quickly and easily reserve more of their cognitive resources for the complex task of constructing meaning (LaBerge & Samuels, 1974; Pressley, 2000; T. V. Rasinski, 2000; Stanovich, 1980). Researchers refer to this concept as automaticity theory.

Although the link between oral reading fluency and reading comprehension has been clearly supported in reviews of research literature (Chard, Vaughn, & Tyler, 2002; Dowhower, 1994; Kuhn & Stahl, 2000; NICHD, 2000), the exact nature of the relationship remains a topic of continued study. Notably, there is as much empirical evidence that supports the assertion that fluency *results* from comprehension proficiency (Pikulski & Chard, 2005; Strecker, Roser, & Martinez, 1998) as there is evidence to support the view that fluency *predicts* comprehension proficiency. In the comprehension-influences-fluency view, when students lack understanding of the context of a text, their fluency may be compromised even if their decoding skills are automatic. Consequently, although many English learners may demonstrate grade-level proficiency in reading rate measured by WCPM, they still lack the lexical, syntactic, and semantic knowledge needed for comprehending grade-level texts (Francis et al., 2006).

Reading fluency can be described as a multidimensional process (T. Rasinski, 2004) involving a complex cognitive process that includes reading accurately and quickly with prosody. In the first dimension of reading fluency, readers make use of phonics skills to accurately decode words in text with minimal errors. As decoding skills become automatic, readers make use of the second dimension by expending less mental effort for the task of decoding and freeing up cognitive resources for attending to syntactic and semantic features of the text. Operation of the first two dimensions results in the third dimension, prosodic reading, in which the reader uses knowledge of sentence structures and meanings of words and phrases to read with appropriate phrasing, intonation, and expression. Of the three dimensions of reading fluency—decoding, automaticity, and prosody, much attention has been placed on the automaticity dimension in both research and practice (T. Rasinski, 2004; T. V. Rasinski, 2006). Automaticity can be objectively and easily quantified by measuring reading rate. However, classroom instruction that emphasizes reading rate may not meet the instructional needs of many English learners whose oral reading fluency problems result from lack of vocabulary knowledge and a cultural mismatch between their background knowledge and classroom texts (Palumbo & Willcutt, 2006).

Despite the aforementioned limitations of automaticity theory, assessment of oral reading fluency is often measured in terms of WCPM (Fuchs, Fuchs, Hosp, & Jenkins, 2001; Good et al., 2001). However, implied in automaticity theory is the idea that strong decoding and word recognition skills automatically produce reading comprehension ability. Although this may be the case for some native-English speakers, it may not be true for students with limited English oral language skills or academic vocabulary knowledge such as English learners. Moreover, although two studies reviewed by the National Literacy Panel on Language-Minority Children and Youth provided evidence that

fluency instruction may be beneficial for English learners, the studies did not include results that correlated the data to reading comprehension on a standardized measure (Shanahan & Beck, 2006). Thus, more research is needed to determine what the most effective fluency instruction and assessments might entail. Further research is also needed to address the contention of some researchers that, in order for English learners to become fully fluent English readers, they may need simultaneous systematic instruction in language and vocabulary skills (Pikulski, 2006; Sen & Blatchford, 2001).

Even if English learners have received intensive phonics instruction, they may have only limited comprehension of the words they can decode. Their WCPM scores, therefore, may not have the same predictive power related to comprehension as the scores of their native-English speaking peers. Furthermore, emphasis of isolated skills instruction (such as reading rapidly without attention to comprehension) may inhibit attention to the interrelationship among reading process components, especially for students with limited oral English proficiency and inadequate academic vocabulary knowledge (Taylor, Pearson, Clark, & Walpole, 2002).

Oral Language Proficiency Theories

While some researchers have argued that oral reading fluency provides the bridge to reading comprehension, others have asserted that students may not be able to automatically transfer decoding skills to reading comprehension of text containing words that are not in their oral vocabulary (Moats, 2004b). Even though some research has shown that oral proficiency does not significantly correlate with reading achievement defined as word recognition or phonemic awareness (Durgunoglu, Nagy, & Hancin-Bhatt, 1993), other research findings have identified oral language proficiency in a second language as foundational to reading comprehension in that language (Anderson & Roit, 1996; Biemiller, 1999; Francis et al., 2006; Moats, 2004b; Verhoeven, 2000), especially when reading instruction is delivered entirely in the second language (Droop & Verhoeven, 2003). Furthermore, literacy for most native-English speakers is usually acquired through and supported by strong oral language skills (Dressler & Kamil, 2006). Yet, the NRP did not include oral language proficiency among the five essential reading components (NICHD, 2000), and there is not a consensus in the literature on the exact function of oral English language proficiency within the reading acquisition process. Consequently, three views on the role of oral English proficiency in the reading acquisition process of English learners describe oral English proficiency as (a) a skill that can be developed in tandem with reading comprehension, (b) a skill that is essential before students can read with comprehension, and (c) a skill that is facilitated by learning how to decode.

Research in support of the first view has shown that English learners can learn to read and develop their oral vocabulary simultaneously (Quiroga, Lemos-Britton, Mostafapour, Abbott, & Berninger, 2002). In this view, the reciprocal nature of oral language and reading makes it possible for students to transfer knowledge across the two mediums. Alternatively, Condelli, Wrigley, and Yoon (2009) found that English learners who had higher oral proficiency in English at the beginning of the study made higher gains in reading literacy than those with lower oral proficiency, which supports the second view of the role of oral English proficiency. Moreover, Verhoeven (2000) reported research findings that also support the second view. He noted that a certain amount of prerequisite second-language oral proficiency is necessary for literacy acquisition in that language. Verhoeven stated that even though second-language learners kept up with their native-speaking peers in word decoding, irrespective of socioeconomic background, they lagged behind significantly in vocabulary knowledge, reading comprehension, and automaticity with words that contain more complex orthographic patterns. These students continued to score significantly lower than their native-

speaking peers on comprehension tests that required them to read decontextualized, cognitively demanding texts. In this second view of oral language proficiency, words must be in students' oral vocabulary before they can comprehend their meaning (Biemiller, 1999).

Supporters of the third view of the role of oral language proficiency (Anderson & Roit, 1996; Francis et al., 2006) have suggested that reading comprehension instruction be used as the medium for developing oral language proficiency. Research supporting this view has focused on "reading comprehension as a gateway to language development, rather than on proficient language as a prerequisite to reading" (Anderson & Roit, 1996, p. 297). The researchers contended that English learners can learn English from reading in context. According to this view, direct instruction of reading process components (phonemic awareness, decoding, fluency, vocabulary, and comprehension) provides students with access to academic language development and comprehension skills.

Although researchers from the three views do not all agree on the precise role of oral English proficiency in second-language literacy acquisition, their conclusions align on the point that oral English language proficiency plays a crucial role in English learners' reading comprehension proficiency. According to Adams (2004), "Word recognition is only valuable and, in a strong sense, only possible as it is received and guided by the larger activities of language comprehension and thought" (p. 1219).

Academic Vocabulary Knowledge Theory

The concept of academic vocabulary knowledge encompasses many linguistic skills including content-specific vocabulary knowledge (NICHD, 2000); familiarity with the vocabulary of literacy including the language used in books, formal writing, and specific genre (Schefelbine, 2003); and understanding of the complex sentence structures of written discourse (Francis et al., 2006). Thus, the concept of vocabulary comprises more than one's lexicon of stored words. It also includes the ability to make sense of the semantic features of word parts, phrases, and sentences (Moats, 2004b).

Research has established that students with underdeveloped vocabulary lexicons find it very difficult to catch up with their peers whose more highly developed lexicons enable them to learn more words at a faster rate (Cain, Oakhill, & Lemmon, 2004). Thus the "Matthew effect" identified by Stanovich (1986), in which the rich get richer and the poor get poorer, becomes an obstacle in closing the achievement gap. Furthermore, English learners who receive intensive phonics instruction may have only limited comprehension of the words they can decode, or they may not be able to automatically generalize decoding skills to reading comprehension of text containing complex decontextualized vocabulary and sentence structures (Francis et al., 2006; Nassaji, 2002).

Some researchers have contended that lack of academic vocabulary knowledge contributes significantly to the literacy achievement gap between English learners and their native-English-speaking peers (Carlo et al., 2004; Cummins, 1979, 1984, 2003; Francis et al., 2006; Jiménez, 2002; Scarcella, 2003). Research has shown that, whereas vocabulary knowledge in first grade predicted reading comprehension in the 11th grade, word recognition skills did not hold similar predictive power (Cunningham & Stanovich, 1997). The impact of this finding on English learners is highlighted by other research, which has shown that many English learners' vocabulary knowledge is significantly less developed than that of their native-English-speaking peers (Francis et al., 2006; Valdés, 1998).

Although English learners may be able to develop conversational fluency, or basic interpersonal communication skills (Cummins, 1984), and basic literacy skills concurrently and within a year or two of exposure to language and direct instruction of phonological knowledge (Lesaux, Koda, Siegel, & Shanahan, 2006), they may require additional time and support for developing cognitive academic language proficiency and the higher-level metalinguistic awareness necessary for developing complex content vocabulary and grammatical and syntactical knowledge (Cummins, 1984, 2003). In other words, students who seem to be conversationally proficient may not have yet developed the complex language structures and content-specific word knowledge they need to perform successfully on highly decontextualized academic reading tasks such as standardized comprehension tests (Francis et al., 2006; Schefelbine, 2003).

This signals the strong possibility that, even though English learners may benefit from the same direct, systematic reading instruction identified as effective for struggling native-English-speaking students, they also require additional instructional support and opportunities to practice higher level metalinguistic skills needed to promote the skillful acquisition of academic vocabulary knowledge (Nagy & Scott, 2004; Scarcella, 2003). Promoting metalinguistic awareness may promote the acquisition of academic vocabulary in all students as well as English learners.

Reading Comprehension Theory

Reading comprehension is a complex process of meaning construction involving both word-level and text-level comprehension skills (Duke & Pearson, 2002; Pressley, 2002; Ruddell & Unrau, 2004; Stanovich, 1986). Pressley (2002) provided a concise summary of the component processes:

> Text comprehension begins with decoding of words, processing of those words in relation to one another to understand the many small ideas in the text, and then, both unconsciously and consciously, operating on the ideas in the text to construct the overall meaning encoded in the text. Of course, the meaning constructed by the reader is a function of the ideas explicitly represented in the text and the reader's response to those ideas, responses that often depend greatly on the prior knowledge of the reader. (p. 551)

Consequently, although text-level comprehension depends on automatic word-level skills, these skills alone are insufficient. Proficient reading also depends on the reader's background knowledge and skillful use of comprehension strategies (Pressley, 2000). Thus, the fluent reader utilizes available cognitive resources, or cognitive capacity, to access the meaning of words, phrases, and sentences (Nation, Adams, Bowyer-Crane, & Snowling, 1999) while maintaining short-term memory and working memory capacity sufficient for constructing meaning through activation of background knowledge and application of metacognitive skills (Moats, 2004a).

Attempting to read with limited proficiency in one or more of the word-level reading skills exerts a load on short-term and working memory that reduces the cognitive capacity available for activating background knowledge and applying comprehension strategies (Just & Carpenter, 1992). Figure 1 is a representation of the cognitive capacity of a reader with little working memory available for applying background knowledge or comprehension strategies due to limited proficiency in word-level skills.
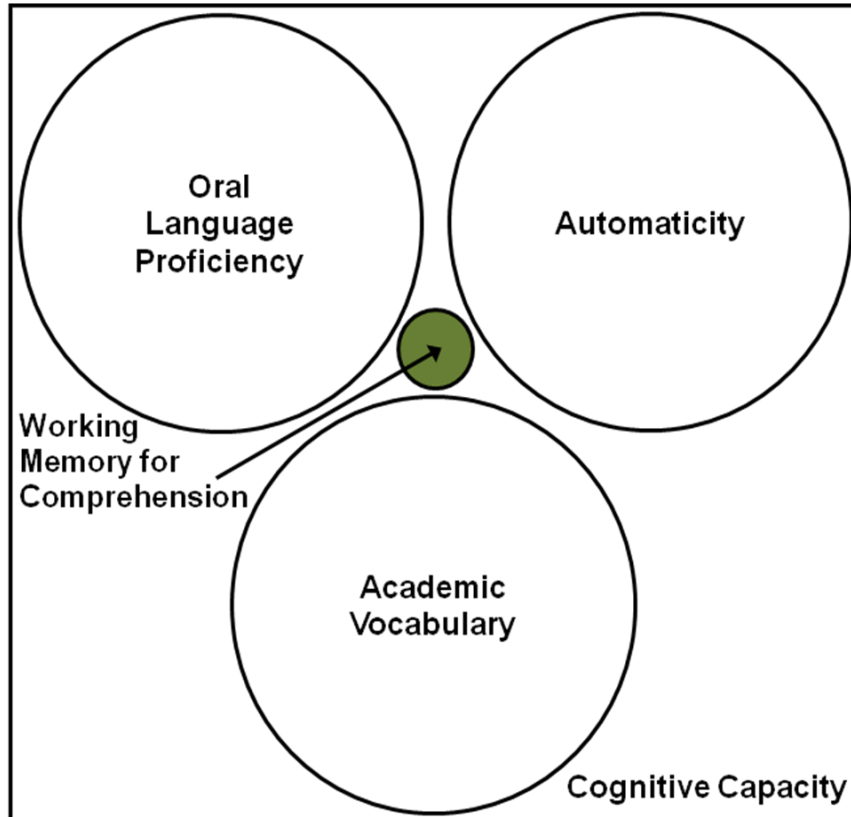
Figure 1: *Meaning to Read: Cognitive Overload Resulting From Lack of Oral Language Proficiency, Automatic Decoding Skills, and Academic Vocabulary Knowledge*

Although this reader means to read, very little comprehension takes place because too much of the available cognitive resources are tied up in a lack of oral vocabulary, under-developed decoding skills, and/or inadequate academic vocabulary knowledge. When word-level skills are highly developed, however, they form reciprocal relationships that require less cognitive capacity (LaBerge & Samuels, 1974). As a result, the reader has more cognitive capacity available for activating background knowledge and applying comprehension strategies. Figure 2 is a representation of the cognitive capacity of a proficient reader whose automatic word-level skills intersect reserving enough cognitive capacity for both literal and inferential comprehension.
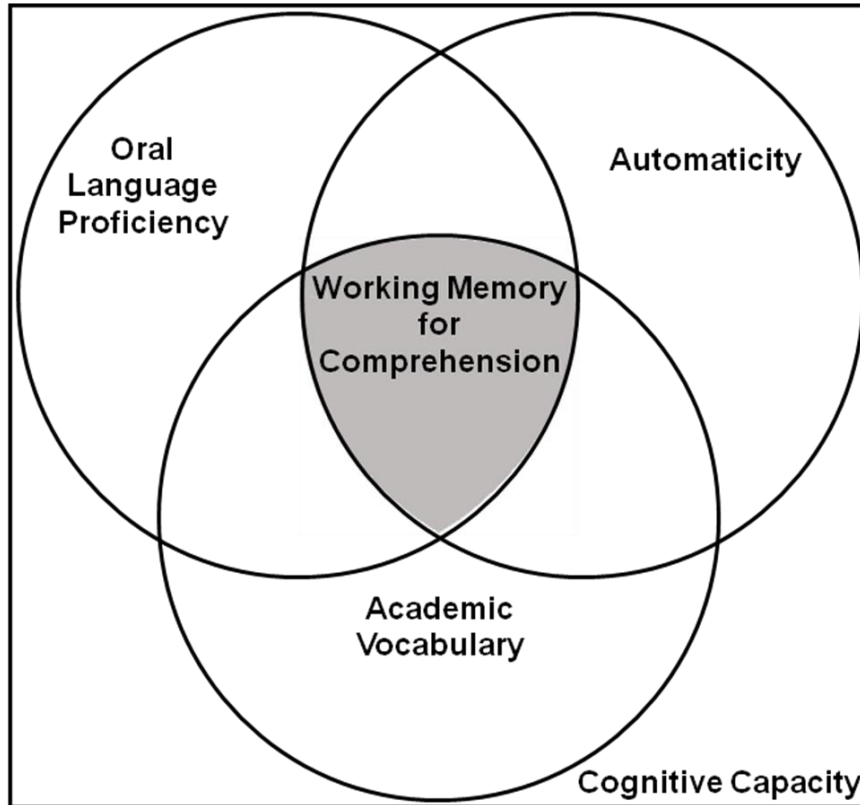
Figure 2: *Reading for Meaning: Automatic Word-Level Comprehension Produces Sufficient Cognitive Capacity to Support Text-Level Comprehension*

There is no doubt that comprehension is the ultimate purpose of reading. According to the Center for the Improvement of Early Reading Achievement, "If readers can read the words but do not understand what they are reading, they are not really reading" (Armbruster, Lehr, & Osborn, 2003, p. 48). This quote highlights the importance of moving students beyond word-level comprehension to text-level comprehension, which includes the ability to read orally with prosody, make inferences, and draw conclusions. The research question for this study was, *Are the independent variables of oral English language proficiency, oral reading fluency (WCPM), and academic vocabulary knowledge predictors of reading comprehension proficiency of Latino English learners on standardized tests, and if so, what is the relative influence of each of them on reading comprehension proficiency?* Because WCPM assessments are commonly used as an indicator of reading comprehension, we sought to determine whether WCPM was the best indicator of the reading comprehension fluency of Latino English learners.

Method

Participants

The participants were 1,376 third-grade Latino students, or 46.3% of the district's total third-grade enrollment, identified as limited English proficient from 23 elementary schools in a school district. Of the district's total student population, 81.8% received free or reduced-price lunch, 84.4% were

Latino, and 59.2% were English learners. The primary language of 94.6% of the district's English learners was Spanish. Because the passage of Prop 227 in 1998 dismantled California's bilingual education system, English learners in this school district have received their instruction in English-only classrooms, supplemented with a 30-min block of daily English language development instruction. For our analysis, we used existing test score data from state and program mandated assessments.

Variables

Table 1 outlines each variable and its measurement instrument. Each variable was measured using raw scores from a standardized reading subskill test. Listening comprehension scores from the California English Language Development Test (CELDT) were used to measure the oral English proficiency variable. Oral reading fluency was measured using the end-of-year WCPM scores. The California Standards Test (CST) scores for word analysis and vocabulary development were used to measure the students' academic vocabulary knowledge. Oral English proficiency, WCPM scores, and academic vocabulary knowledge were the three independent variables used in our study.

Table 1: *Variables and Their Measurement Instruments*

Variable	Measurement Instrument
Oral English language proficiency	CELDT listening comprehension scores
Oral reading fluency	End-of-year average oral reading fluency scores (WCPM)
Academic vocabulary knowledge	CST word analysis and vocabulary development scores
Grade-level reading comprehension	CST reading comprehension scores
Norm-referenced reading achievement	CAT6 reading comprehension scores
English reading proficiency	CELDT reading scores

Note. CELDT = California English Language Development Test; WCPM = words correct per minute; CST = California Standards Test; CAT6 = California Achievement Test 6th Edition.

Three different variables measuring distinct aspects of measurable reading comprehension proficiency were the dependent variables in our analysis: (a) the CST reading comprehension test scores, which measure proficiency in grade level reading comprehension standards; (b) the California Achievement Test 6th Edition (CAT6) reading comprehension scores, which are national norm-referenced ranked scores, and (c) the CELDT scores for reading, which, in contrast to the CST comprehension test scores, measure acquisition of California's English language development (ELD) standards.

Scale reliability analysis of the three reading comprehension variables revealed adequate internal consistency reliability ($\alpha = .75$). Cronbach's α quantifies how well the three reading comprehension variables, which assess proficiency of specific reading comprehension skills, measure a single, unidimensional latent construct. We, therefore, combined the three reading comprehension variables into one composite variable. The possible range of scores on the CST reading comprehension test was 0–15. Students' CAT6 and CELDT reading comprehension scores were converted to a 0–15 scale, and the average of the three scores was used in our analysis as the value of the students' composite reading comprehension variable. In this way, each of the original reading comprehension variables contributed equally to our composite variable.

Instrumentation

WCPM

The average reading fluency score is obtained through administration of a curriculum-based measurement assessment (Fuchs et al., 2001) in which the teacher individually listens to each student read two standardized oral reading passages for 1 min each. The teacher records any miscues and insertions and subtracts them from the total words read on each passage. The WCPM score consists of an average of the scores for the two passages. No assessment is made to determine comprehension of the passage. The reading level of the passages is calibrated to the expected reading level at the end of each grade, and oral reading fluency benchmark norms are used to determine whether students have reached oral reading proficiency. The average fluency benchmark score for the end of third grade is 110 WCPM. This benchmark is used as the indicator of proficient oral reading fluency and a predictor of reading comprehension proficiency.

As discussed earlier, research has supported WCPM as a sound measure of fluent oral reading (Good et al., 2001; Hasbrouck & Tindal, 1992). The use of WCPM benchmarks provides a quantifiable statistic that can be measured and correlated with a great degree of reliability (Fuchs et al., 2001). This reliability was enhanced by computing the score from an average and by providing scripted instructions for test administration.

Nevertheless, one must also consider extraneous variables that pose threats to the validity of utilizing WCPM scores such as teacher effect, testing environment, and student oral vocabulary levels. Teacher effect occurs as a result of each teacher administering the test to his or her class, sometimes with the help of an instructional assistant or resource teacher. The validity of using the scores is threatened by differences in teacher perceptions, familiarity with the students, and expertise in test administration. Also, the testing environment is not the same for all students. Some teachers provide a quiet atmosphere during the assessment, while others do not. Background noise during the assessment poses a threat to reliability because some students are more distractible than others and have difficulty concentrating when the room is not quiet. Although these threats to the validity of WCPM scores as a measure of oral reading fluency need to be recognized and acknowledged, the scores are still highly appropriate and provide reliable, quantifiable results (Fuchs et al., 2001).

CELDT

The CELDT is administered yearly in the fall. Based on their scores for each subtest, students receive a separate English proficiency level designation for listening, speaking, reading, and writing as well as an overall English proficiency level. Test proctors and teachers follow standardized procedures for administration of the test and submission of the testing materials. The content of the test is based on the California ELD standards with students in Grades 3–5 taking the same test. The scores for the listening comprehension subtest were used to measure oral English proficiency, and the scores for the reading subtest were used as one of the measures of reading comprehension proficiency. Because the California ELD standards are divided into grade-level spans (K–2, 3–5, 6–8, and 9–12), the CELDT subtests assess progress along a continuum of English language skills rather than grade-level achievement. Therefore, the results indicate acquisition of English literacy skills as defined by the California ELD standards in contrast to the grade-level standards achievement measured by the CST.

CELDT and Oral English Language Proficiency

The CELDT is administered to all the English learners who have not been redesignated as English proficient. The listening portion of the test for third grade is group administered and consists of 20 multiple choice items that assess listening comprehension proficiency by requiring the students to follow oral directions, listen to stories and identify main ideas and supporting details, and demonstrate understanding of idiomatic expressions. The rationale for selecting the listening subtest as a measure of oral English proficiency comes from the literature that asserts that listening comprehension sets the ceiling for reading comprehension (Biemiller, 1999; Moats, 2004a). The following is a sample test question:

> *Say:* A teacher tells the class, "Tomorrow we are going to start our project about family histories. I want you to bring to class some pictures of your family. If you can, bring two pictures that show all the people in your family. We will use these pictures in the project."

> *Ask:* What do the students need for their project?
> - ☒ some pictures
> - ☐ some books
> - ☐ some snacks

CELDT and English Reading Proficiency

The reading portion of the CELDT consists of 35 multiple choice items divided into three categories: word analysis, fluency and vocabulary, and reading comprehension and literary analysis. The word analysis section contains 11 items that require students to apply knowledge of word relationships to derive meaning from literature and content area texts. The 12 items in the fluency and vocabulary section measure students' knowledge of English morphology, multiple meaning words, analogies, and common idioms. The reading and literary analysis section has 12 items that test students' ability to identify main idea, plot, and settings, as well as compare and contrast the motives of characters, draw conclusions, and make inferences. The following are sample questions:

Word Analysis
Which of these words has three syllables?
- ☐ children
- ☐ flower
- ☐ holiday
- ☐ yellow

Fluency and Vocabulary
Directions: Choose the word that means the same as the underlined word in the sentence.
Can you recall your last visit to a museum?
- ☐ explain
- ☐ describe
- ☐ forget
- ☐ remember

Reading Comprehension and Literary Analysis
After reading a paragraph about Teresa's visit to the farm, the following question is presented:
After arriving at the farm, the first thing Teresa noticed was the
- ☐ rooster.
- ☐ horse.
- ☐ smell.
- ☐ sounds.

CST and CAT6
The CST for English language arts is a standardized, criterion-referenced, multiple-choice test that measures student achievement on the California English language arts standards, and the CAT6 is a standardized, norm-referenced, multiple-choice test that compares student achievement with national norms. Both tests are administered in the spring.

CST and Academic Vocabulary Knowledge
Academic vocabulary knowledge was measured using CST word analysis and vocabulary development scores. This 20-item, multiple-choice test is appropriate for measuring academic vocabulary knowledge because it requires students to both evidence acquisition of a lexicon of grade-appropriate words and apply high-level metalinguistic skills to demonstrate knowledge of antonyms, synonyms, homophones, and homographs and use context and knowledge of prefixes and suffixes to determine the meaning of unknown words. The following are sample questions:

Which two words are *antonyms*?
- A. talk, speak
- B. pretend, imagine
- C. ocean, sea
- D. gentle, fierce

Which of the following suffixes can be added to the end of the word *travel* to make a new word that means "someone who travels"?
- A. -er
- B. -ed
- C. -ing
- D. -est

CST and Grade-Level Reading Comprehension
The reading comprehension section of the CST contains 15 items that require students to demonstrate proficiency in California grade-level standards related to literal and inferential reading skills by connecting prior knowledge with literal and inferred information, distinguishing between main idea and supporting details, and extracting information about problems and solutions. The students read one or more passages and then answer a series of multiple choice questions. The following are two sample questions asked after the students read a passage about a monkey with a problem:

Which saying *best* tells what Monkey learned in this story?
- A. You cannot please everyone.
- B. Be careful what you ask for.
- C. Slow and steady wins the race.
- D. Do not judge a book by its cover.

This story is *best* described as a
- A. biography.
- B. folktale.
- C. poem.
- D. riddle.

CAT6 and Norm-Referenced Reading Achievement

The reading and language arts section of the CAT6 consists of 50 multiple choice items based on grade-level curriculum frameworks from across the country. Scores from both of these comprehension tests as well as those from the CELDT reading test were used to measure reading comprehension proficiency of the student sample of Latino English learners. There are no sample test questions released for the CAT6.

Reliability

The internal consistency reliability measure for CELDT listening comprehension was .78 and for CELDT reading, α = .79 (CTB/McGraw-Hill, 2007), indicating adequate test reliability. For the CST, word analysis and vocabulary development had α = .81 and for CST reading comprehension, α = .79 (Educational Testing Service, 2007). Standardization of administration and reporting of scores for tests such as the CELDT, CST, and CAT6 is thought to substantially reduce measurement error and provide considerable reliability.

Validity

Although there were "no external measures available at present to correlate with the CELDT scale scores [to assess convergent validity], the pattern of correlations within CELDT provides preliminary validity evidence" (CTB/McGraw-Hill, 2007, p. 67). The Pearson correlation coefficient between CELDT listening comprehension and CELDT reading was .61, and the correlation coefficients among the four domains of the CELDT (listening, speaking, reading, and writing) ranged from .52 to .75. To assess convergent validity of the CST and CAT6, the correlation coefficient between CST English language arts and CAT6 reading scores was calculated, $r = .77$ (Educational Testing Service, 2007). Despite adequate measures of convergent validity, threats to validity from extraneous variables need to be considered. One such threat is related to the probability of guessing the correct answer without having mastered the tested standard or skill. The odds of 1:4 of getting correct answers by sheer luck are increased for students who have mastered certain test-taking skills, such as the process of elimination and skimming for keywords. There is no way to know how many answers are actually correct guesses, which inflates scores and may threaten the psychometric properties of the test. Another variable that threatens the validity of CST and CAT6 scores is related to the issue of cultural bias in standardized tests. Although attempts have been made to correct this flaw, it is nearly impossible to produce a test that is truly free of cultural bias and that does not contain vocabulary and concepts familiar to students from the dominant culture and unfamiliar to students who are not. Although these threats to validity need to be recognized and acknowledged, the scores are still highly appropriate and meaningful as a measure of end-of-year reading achievement.

Data Analysis

Using SPSS for Windows software, we ran standard multiple regression to answer the research question, *Are the independent variables of oral English language proficiency, oral reading fluency (WCPM), and academic vocabulary knowledge predictors of reading comprehension proficiency of Latino English learners on standardized tests, and if so, what is the relative influence of each of them on reading comprehension proficiency?* We examined the standardized ß coefficients between each of the individual independent variables and the dependent variable to determine whether there was support for generalizing automaticity theory (Good et al., 2001; T. V. Rasinski, 2000) to reading instruction for Latino English learners. Finally, we calculated the effect size (*ES*) of each individual predictor in the regression analysis using the formula $sr^2 / (1 - R^2)$, where sr is the semipartial correlation (Cohen, Cohen, West, & Aiken, 2003).

Results and Findings

Table 2 displays the descriptive data for the data set used in the analysis. The mean end-of-year oral reading fluency score was 88.39 WCPM (*SD* = 33.37), which is 21.61 WCPM below the expected third-grade end-of-year benchmark score of 110 WCPM. This indicated that, on average, the English learners in our sample were performing well below grade-level expectations in oral reading fluency. Additionally, we compared the mean score to the maximum possible score for each of the five assessments, excluding WCPM, and found that students performed more poorly on the reading comprehension assessments than the other assessments. Average performance was poorest for norm-referenced reading achievement at 30.2% (15.09/50), with performance on grade-level reading comprehension following a close second at 38.9% (5.84/15) and English reading proficiency third at 61.5% (21.54/30).

Table 2: *Descriptive Statistics: Participant Profile (*n *= 1,376)*

Variable Name	Max Score	Mean	Standard Deviation	Range Min.	Range Max.
CELDT listening comprehension	20	16.35	2.88	3	20
Oral reading fluency (WCPM)	—[a]	88.39	33.37	0	225.5
CST word analysis and vocabulary	20	10.60	3.64	2	20
CST reading comprehension	15	5.84	2.63	0	14
CAT6 reading comprehension	50	15.09	4.62	2	29
CELDT reading	35	21.54	6.89	0	35
Reading comprehension (composite)	15	6.53	1.98	1.55	11.75

Note. CELDT = California English Language Development Test; WCPM = words correct per minute; CST = California Standards Test; CAT6 = California Achievement Test 6th Edition.
[a] No maximum score for WCPM. However, expected year-end benchmark oral reading fluency for third grade = 110 WCPM.

Table 3 displays the bivariate correlation coefficients between independent and dependent variables, which were all positive. Of the correlations between the independent variables, the largest coefficient was between academic vocabulary knowledge and oral reading fluency (*r* = .61, *p* < .001). The weakest correlation coefficient was between oral English language proficiency and oral reading fluency (*r* = .38, *p* < .001).

Table 3: *Bivariate Correlation Coefficients Between Variables in the Model*

Variable	1	2	3	4
1. CELDT listening comprehension	—	.38	.43	.55
2. Oral reading fluency (WCPM)		—	.61	.67
3. CST word analysis and vocabulary			—	.73
4. Reading comprehension (composite)				—

Note. CELDT = California English Language Development Test; WCPM = words correct per minute; CST = California Standards Test. All *r* values are significant at the *p* < .001 level.

By squaring the correlation coefficients between the independent variables, we can calculate the percentage of variation of one variable explained by another. The largest r^2, or coefficient of determination, was .37 between oral reading fluency and academic vocabulary knowledge, indicating that 37% of the variation in oral reading fluency is explained by academic vocabulary knowledge and vice versa. Sixty-three percent of the variation is left unexplained, which means that there are other variables not included in our analysis affecting the independent variables.

Regression results indicated that the overall model significantly predicts reading comprehension, R^2 = .66, R^2_{adj} = .66, $F(3, 1,372)$ = 892.03, $p < .001$. This model accounts for 66% of the variance in reading comprehension. A summary of regression coefficient is presented in Table 4 and indicates that all three predictors significantly contributed to the model.

Table 4: *Coefficients for Model Variables*

Variable	B	ß	t	p	Bivariate r	Partial r	Effect Size
CELDT listening comprehension	.18	.25	14.45	<.001	.55	.36	.38
Oral reading fluency (WCPM)	.01	.30	15.03	<.001	.67	.38	.42
CST word analysis and vocabulary	.24	.44	21.13	<.001	.73	.50	.74

Note. CELDT = California English Language Development Test; WCPM = words correct per minute; CST = California Standards Test.

Academic vocabulary knowledge is the strongest predictor in the model (ß = .44), almost twice as strong as oral English language proficiency (ß = .25). WCPM is the second strongest predictor in the model (ß = .30). The effect size of academic vocabulary knowledge (*ES* = .74) is almost twice that of either oral English language proficiency (*ES* = .38) or WCPM (*ES* = .42).

Discussion

The results of our study provide evidence that academic vocabulary knowledge has stronger predictive power and a larger positive association with the reading comprehension of Latino English learners than either oral reading fluency or oral English language proficiency. We discuss the relationship between each independent variable and the dependent variable, reading comprehension, separately.

Relationship Between Oral English Language Proficiency and Latino English Learners' Reading Comprehension

In general, the results of our study suggest a comparatively weak relationship between oral English language proficiency and reading comprehension proficiency. Oral English language proficiency is the weakest predictor in the model. This contradicts existing research which contends that students will not be able to read and comprehend above their listening comprehension proficiency (Biemiller, 1999; Moats, 2004b) and that literacy skills in one's native language usually require the support of strong oral language skills (Dressler & Kamil, 2006).

Although the relatively weak ß coefficient generated by oral English language proficiency does not align with research that supports the predictive power of well-developed oral language skills on reading comprehension, the results do support the research which suggests that literacy acquisition may even precede and support oral language skills (Anderson & Roit, 1996). Notwithstanding, identifying the exact role of oral English language proficiency in Latino English learners' acquisition of reading comprehension is not within the scope of our study, but the results suggest that oral English language development is an essential component of the reading acquisition process for English learners.

Relationship Between Oral Reading Fluency (WCPM) and Latino English Learners' Reading Comprehension

The predictive power of assessments of WCPM on the reading comprehension proficiency of Latino English learners was of particular interest in this study due to the influential research that has shown a strong positive correlation between WCPM assessments and reading comprehension for students (Good et al., 2001). Consequently, the results of our analysis might suggest a possible answer to the question of whether or not the research on general populations of students can be generalized to Latino English learners. The ß coefficient reveals that WCPM is the second strongest predictor of reading comprehension in our model.

A possible explanation for the lower predictive power of WCPM for Latino English learners' reading comprehension than CST word analysis and vocabulary is that WCPM is only a partial measure of oral reading fluency (T. V. Rasinski, 2006). Specifically, WCPM does not measure the prosodic dimension of oral reading fluency, which is the dimension of fluency that may be most strongly connected with comprehension and the mastery of which may be most challenging for English learners due to limited knowledge of vocabulary and syntax (Nassaji, 2002).

Relationship Between Academic Vocabulary Knowledge and Latino English Learners' Reading Comprehension

The variable measuring academic vocabulary knowledge and skills, CST word analysis and vocabulary, produced the largest ß coefficient in the model. This finding aligns with research that suggests Latino English learners may benefit from a departure from an emphasis on the acquisition of reading speed to instructional practices that prioritize the acquisition of reading for depth of understanding (Palumbo & Willcutt, 2006). Additionally, this result is consistent with research that has identified underdeveloped semantic and syntactic skills as a factor that contributes significantly to cognitive overload during the comprehension process (Nation et al., 1999). The results of our analysis suggest that academic vocabulary knowledge has greater predictive power relative to the reading comprehension proficiency of Latino English learners than either oral English skills (listening comprehension) or oral reading fluency (WCPM). This finding aligns with research that suggests only a small percentage of English learners struggle with accurate and automatic word reading skills. Rather many of these students do not understand the meaning of the words they can accurately decode. Consequently, comprehension proficiency continues to be compromised despite the presence of well-developed word reading skills (Francis et al., 2006). Furthermore, the results support the research asserting that developing academic vocabulary knowledge in English learners may contribute significantly to reducing the literacy achievement gap (e.g., Carlo et al., 2004; Jiménez, 2002; Scarcella, 2003).

Interpretation of the Correlation Coefficients

The correlation coefficients between the independent variables indicate the direction and strength of the associations among the three variables. The strongest relationship in the data was between oral reading fluency and academic vocabulary knowledge ($r = .61$, $p < .001$). Positive correlation coefficients among the independent variables are supported by the research and are illustrated by the intersecting portions of the circles in Figure 3.
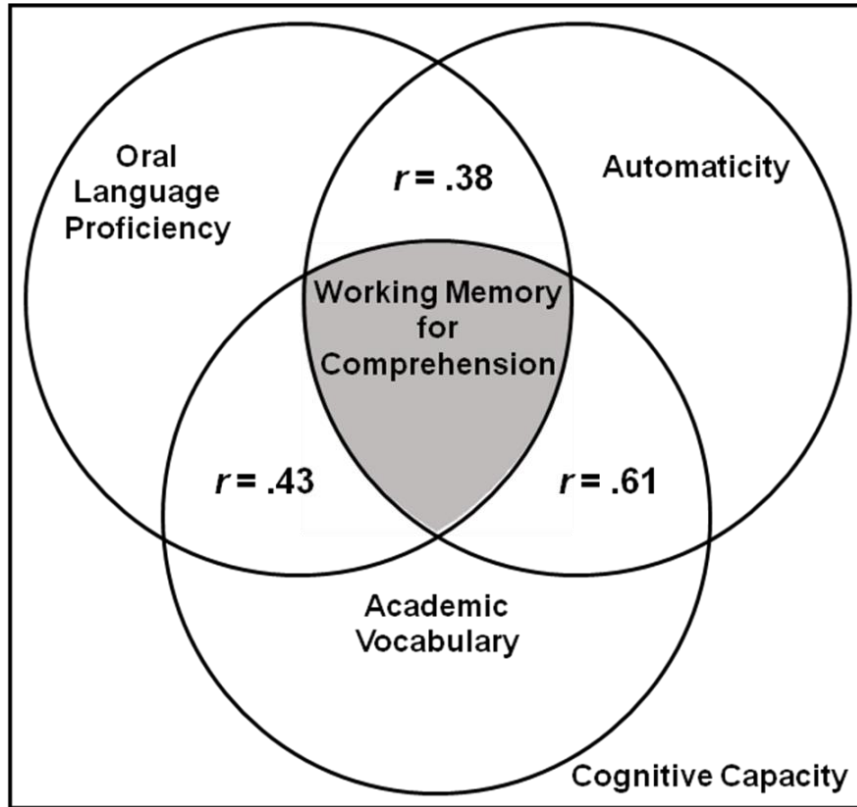
Figure 3: *Correlation Coefficients Mapped Onto Reading for Meaning Diagram (Figure 2 Revised)*

Limitations

Two limitations need to be recognized in the interpretation of the results of this study. Our model explains 66% of the variance in reading comprehension scores. However, there are additional variables not included in the model that account for portions of the unexplained variance. Relevant missing variables may include student motivation, parent involvement, Spanish reading proficiency, student socioeconomic status, relatively large class sizes (>30:1 teacher–student ratio), multitrack year-round schedule, and/or classrooms with high percentages of English learners. With the possible exceptions of student motivation and parent involvement, however, intervening variables are out of the sphere of influence of the classroom teacher. Consequently, the results of this study are limited to inferences about the relationship between variables that are within the classroom teacher's sphere of influence.

An additional limitation of this study is that the sample was drawn from only one grade level in only one school district in California. The results for students in the intermediate grade levels may differ as a function of having more time to achieve reading and language skills or as a function of increased difficulty of the grade-level reading and language arts content standards. Furthermore, the culture of a school district indirectly influences student achievement. Thus, different results may be found across different school districts. Generalizability of this study, therefore, may be limited by the

ethnic homogeneity of the district population. Hence the results may be generalizable only to schools with high percentages of Latino English learners.

Implications

The results of our study suggest that oral reading fluency assessments in terms of reading rate, or WCPM, may not have the same predictive power for the reading comprehension proficiency of Latino English learners as has been shown for general student populations. Consequently, caution is warranted in the amount of instructional time given to emphasizing assessment and instruction in rapid word reading (WCPM) that may limit instructional time spent on assessment and instruction in prosodic reading, academic vocabulary knowledge, and comprehension strategies.

Moreover, the finding that academic vocabulary knowledge and skills have greater predictive power than both oral English language proficiency and WCPM implies that Latino English learners benefit from literacy instructional practices that highlight the development of the academic vocabulary supporting the sophisticated metacognitive skills needed for activation of comprehension strategies and monitoring. Given that proficiency in academic vocabulary knowledge has been recognized as a critical reading process component for all students, greater implementation of instructional practices that support academic vocabulary would be an appropriate instructional practice for all students, regardless of English language designation (Francis et al., 2006).

A review of literature highlighted the dearth of educational research conducted on English learners, particularly on the relationship between oral reading fluency and reading comprehension. Given the high percentages of English learners in classrooms in California and across the country and the amount of data regularly collected on all students since implementation of the accountability mandates of NCLB, it is difficult to understand why such a lack of research exists. As well, given that current educational policies have not significantly reduced the literacy achievement gap in California (Rumberger, 2007), research on effective literacy instructional practices for English learners needs to be a research priority. Moreover, the implications of past, present, and future research findings on effective literacy instruction for English learners need to be more clearly articulated to policymakers, educators, and the general public. Findings from our study indicate that such research might include investigations into the effectiveness of WCPM assessments in predicting reading comprehension proficiency in English learners at various grade levels, English proficiency levels, and in various demographic settings. Also warranted are studies on effective instructional practices for English learners that support text-level comprehension, including fluency measured in terms of prosodic oral reading, academic vocabulary knowledge, and comprehension strategies.

Conclusion

Our investigation was undertaken out of concern that the literacy gap for Latino English learners has persisted. The implementation of WCPM assessments to drive reading instructional practices has produced unintended consequences that may be contributing to the persistence of the literacy achievement gap. One such consequence is the unintentional affirmation of the myth that good readers read rapidly, when what is actually required is effortless decoding and word recognition. Another completely unintentional, although equally disturbing, consequence may be the overuse of repeated reading exercises for the purpose of speed without attention to prosody and comprehension. Instructional minutes are limited and classroom practices that focus on reading rate to the exclusion of developing the prosodic dimension of fluency do not meet the needs of many English learners who require fluency instruction that builds vocabulary knowledge and provides increased exposure to authentic text (Francis et al., 2006).

The findings of our study suggest that educators seeking to promote the reading comprehension proficiency of Latino English learners consider using WCPM assessments and activities cautiously and appropriately and strive to allocate more time for instruction and assessment of the prosodic dimension of oral reading fluency and academic vocabulary knowledge and skills. Although these recommendations may be challenging on both practical and philosophical levels, they are appropriate for calling attention to exercises that, though well-intentioned, do not move students from meaning-to-read word callers to becoming metacognitively sophisticated readers who are able to read for meaning (Pressley, 2002). Similarly, the need for further investigation of the most effective literacy instructional practices that would lead to significant narrowing of the literacy achievement gap for English learners cannot be ignored.

References

Adams, M. J. (2004). Modeling the connections between word recognition and reading. In R. B. Ruddell & N. J. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed., pp. 1219–1243). Newark, DE: International Reading Association.

Allington, R. L. (2006). Fluency: Still waiting after all these years. In S. J. Samuels & A. E. Farstrup (Eds.), *What research has to say about fluency instruction* (pp. 94–105). Newark, DE: International Reading Association, Inc.

Anderson, V., & Roit, M. (1996). Linking reading comprehension instruction to language development for language-development for language-minority students. *Elementary School Journal, 96*, 295–309.

Armbruster, B. B., Lehr, F., & Osborn, J. (2003). *Put reading first: The research building blocks of reading instruction, Kindergarten through Grade 3* (2nd ed.). Ann Arbor, MI: Center for the Improvement of Early Reading Achievement, University of Michigan.

August, D., & Shanahan, T. (Eds.). (2006). *Developing literacy in second-language learners: Report of the national literacy panel on language-minority children and youth*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Biemiller, A. (1999). *Language and reading success. Vol. 5. Reading research to practice: A series for teachers*. Newton Upper Falls, MA: Brookline Books.

Cain, K., Oakhill, J., & Lemmon, K. (2004). Individual differences in the inference of word meanings from context: The influence of reading comprehension, vocabulary knowledge, and memory capacity. *Journal of Educational Psychology*, *96*, 671–681. doi:10.1037/0022-0663.96.4.671

Carlo, M. S., August, D., McLaughlin, B., Snow, C. E., Dressler, C., Lippman, D. N., . . . White, C. E. (2004). Closing the gap: Addressing the vocabulary needs of English-language learners in bilingual and mainstream classrooms. *Reading Research Quarterly, 39*(, 188–215. doi:10.1598/RRQ.39.2.3

CTB/McGraw-Hill. (2007). *Technical report for the California English Language Development Test (CELDT): 2006–2007 edition (Form F)*. Monterrey, CA: Author.

Chard, D. J., Vaughn, S., & Tyler, B.-J. (2002). A synthesis of research on effective interventions for building reading fluency with elementary students with learning disabilities. *Journal of Learning Disabilities, 35*, 386–406. doi:10.1177/00222194020350050101

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Condelli, L., Wrigley, H., & Yoon, K. S. (2009). "What works" for adult literacy students of English as a second language. In S. Reder & J. Bynner (Eds.), *Tracking adult literacy and numeracy skills: Findings from longitudinal research* (pp. 132–159). New York, NY: Routledge.

Cummins, J. (1979). Linguistic interdependence and the educational development of bilingual children. *Review of Educational Research, 49*, 222–251. doi:10.3102/00346543049002222

Cummins, J. (1984). *Bilingualism and special education: Issues in assessment and pedagogy*. Avon, England: Multilingual Matters Ltd.

Cummins, J. (2003). Reading and the bilingual student: Fact and friction. In G. G. Garcia (Ed.), *English learners: Reaching the highest level of English literacy* (pp. 2–33). Newark, DE: International Reading Association.

Cunningham, A. E., & Stanovich, K. E. (1997). Early reading acquisition and its relation to reading experience and ability 10 years later. *Developmental Psychology, 33*, 934–945. doi:10.1037/0012-1649.33.6.934

Dowhower, S. L. (1994). Repeated reading revisited: Research into practice. *Reading & Writing Quarterly, 10*, 343–358. doi:10.1080/1057356940100406

Dressler, C., & Kamil, M. (2006). First- and second-language literacy. In D. August & T. Shanahan (Eds.), *Developing literacy in second-language learners: Report of the national literacy panel on language-minority children and youth* (pp. 197–238). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Droop, M., & Verhoeven, L. (2003). Language proficiency and reading ability in first- and second-language learners. *Reading Research Quarterly, 38*, 78–103. doi:10.1598/RRQ.38.1.4

Duke, N. K., & Pearson, P. D. (2002). Effective practices for developing reading comprehension. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about reading instruction* (3rd ed., pp. 205–242). Newark, DE: International Reading Association.

Durgunoglu, A. Y., Nagy, W. E., & Hancin-Bhatt, B. J. (1993). Cross-language transfer of phonological awareness. *Journal of Educational Psychology, 85*, 453–465. doi:10.1037/0022-0663.85.3.453

Educational Testing Service. (2007). *California Standards Tests (CST) technical report: Spring 2006 administration*. Princeton, NJ: Author.

Francis, D. J., Rivera, M., Lesaux, N., Kieffer, M., & Rivera, H. (2006). *Practical guidelines for the education of English language learners: Research-based recommendations for instruction and academic interventions*. Retrieved February 4, 2007, from http://www.centeroninstruction.org/files/ELL1-Interventions.pdf

Fuchs, L. S., Fuchs, D., Hosp, M. K., & Jenkins, J. R. (2001). Oral reading fluency as an indicator of reading competence: A theoretical, empirical, and historical analysis. *Scientific Studies of Reading, 5*, 239–256. doi:10.1207/S1532799XSSR0503_3

Good, R. H., III, Simmons, D. C., & Kame'enui, E. J. (2001). The importance and decision-making utility of a continuum of fluency-based indicators of foundational reading skills for third-grade high-stakes outcomes. *Scientific Studies of Reading, 5*, 257–288. doi:10.1207/S1532799XSSR0503_4

Hasbrouck, J. E., & Tindal, G. (1992). Curriculum-based oral reading fluency norms for students in Grades 2 through 5. *Teaching Exceptional Children, 24*, 41–44.

Jiménez, R. T. (2002). Fostering the literacy development of Latino students. *Focus on Exceptional Children, 34*, 90–112.

Johnson, J., Strange, M., & Madden, K. (2010). *The rural dropout problem: An invisible achievement gap*. Retrieved from http://files.eric.ed.gov/fulltext/ED516681.pdf

Just, M. A., & Carpenter, P. A. (1992). A capacity theory of comprehension: Individual differences in working memory. *Psychological Review, 99*, 122–149. doi:10.1037/0033-295X.99.1.122

Koo, J., Becker, B. J., & Kim, Y.-S. (2014). Examining differential item functioning trends for English language learners in a reading test: A meta-analytical approach. *Language Testing*, *31*, 89–109. doi:10.1177/0265532213496097

Kuhn, M. R., & Stahl, S. A. (2000). *Fluency: A review of developmental and remedial practices*. Ann Arbor, MI: Center for the Improvement of Early Reading Achievement.

Kuhn, M. R., Schwanenflugel, P. J., & Meisinger, E. B. (2010). Aligning theory and assessment of reading fluency: Automaticity, prosody, and definitions of fluency. *Reading Research Quarterly*, *45*, 230–251. doi:10.1598/RRQ.45.2.4

LaBerge, D., & Samuels, S. J. (1974). Toward a theory of automatic information processing in reading. *Cognitive Psychology, 6*, 293–323. doi:10.1016/0010-0285(74)90015-2

Lesaux, N. K., Koda, K., Siegel, L., & Shanahan, T. (2006). Development of literacy. In D. August & T. Shanahan (Eds.), *Developing literacy in second-language learners: Report of the national literacy panel on language-minority children and youth* (pp. 75-122). Mahwah, NJ: Lawrence Erlbaum Associates.

Moats, L. C. (2004a). *Language essentials for teachers of reading and spelling. Module 6. Digging for meaning: Teaching text comprehension*. Boston, MA: Sopris West Educational Services.

Moats, L. C. (2004b). *Language essentials for teachers of reading and spelling. Module 4. The mighty word: Building vocabulary and oral language*. Boston, MA: Sopris West Educational Services.

Nagy, W. E., & Scott, J. A. (2004). Vocabulary processes. In R. B. Ruddell & N. J. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed.). Newark, DE: International Reading Association.

Nassaji, H. (2002). Schema theory and knowledge-based processes in second language reading comprehension: A need for alternative perspectives. *Language Learning, 52*, 439–481. doi:10.1111/0023-8333.00189

Nation, K., Adams, J. W., Bowyer-Crane, C. A., & Snowling, M. J. (1999). Working memory deficits in poor comprehenders reflect underlying language impairments. *Journal of Experimental Child Psychology, 73*, 139–158. doi:10.1006/jecp.1999.2498

National Institute of Child Health and Human Development (NICHD). (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific literature on reading and its implications for reading instruction. Executive summary*. Retrieved March 7, 2006, from http://www.nichd.nih.gov/publications/nrp/smallbook.htm

Palumbo, T., & Willcutt, J. (2006). Perspectives on fluency: English-language learners and students with dyslexia. In S. J. Samuels & A. E. Farstrup (Eds.), *What research has to say about fluency instruction* (pp. 159–178). Newark, DE: International Reading Association.

Pikulski, J. J. (2006). Fluency: A developmental and language perspective. In S. J. Samuels & A. E. Farstrup (Eds.), *What research has to say about fluency instruction* (pp. 70–93). Newark, DE: International Reading Association, Inc.

Pikulski, J. J., & Chard, D. J. (2005). Fluency: Bridge between decoding and reading comprehension. *Reading Teacher, 58*, 510–519. doi:10.1598/RT.58.6.2

Pinnell, G. S., Pikulski, J. J., Wixson, K. K., Campbell, J. R., Gough, P. B., & Beatty, A. S. (1995). *Listening to children read aloud: Data from NAEP's integrated reading performance record (IRRP) at Grade 4.* Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education. (NCES No. 23-FR-04)

Pressley, M. (2000). What should comprehension instruction be the instruction of? In M. L. Kamil, P. B. Mosenthal, P. D. Pearson & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 545–561). Mahwah, NJ: Lawrence Erlbaum Associates.

Pressley, M. (2002). Metacognition and self-regulated comprehension. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about reading instruction* (3rd ed., pp. 291–309). Newark, DE: International Reading Association.

Quiroga, T., Lemos-Britton, Z., Mostafapour, E., Abbott, R. D., & Berninger, V. W. (2002). Phonological awareness and beginning reading in Spanish-speaking ESL first graders: Research into practice. *Journal of School Psychology, 40*, 85–111. doi:10.1016/S0022-4405(01)00095-4

Rasinski, T. (2004). Creating fluent readers. *Educational Leadership, 61*, 46–57.

Rasinski, T. V. (2000). Speed does matter in reading. *Reading Teacher, 54*, 146–151.

Rasinski, T. V. (2006). A brief history of reading fluency. In S. J. Samuels & A. E. Farstrup (Eds.), *What research has to say about fluency instruction* (pp. 4–23). Newark, DE: International Reading Association, Inc.

Ruddell, R. B., & Unrau, N. J. (2004). Reading as a meaning-construction process: The reader, the text, and the teacher. In R. B. Ruddell & N. J. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed., pp. 1462–1521). Newark, DE: International Reading Association.

Rumberger, R. W. (2007). Lagging behind: Linguistic minorities' educational progress during elementary school, *UC Linguistic Minority Research Institute Newsletter, 16*. Retrieved March 12, 2007, from http://www.lmri.ucsb.edu/publications/newsletters/v16n2.pdf

Scarcella, R. (2003). *Accelerating academic English: A focus on English language learners*. Oakland, CA: Regents of the University of California.

Schefelbine, J. (2003). Academic language and literacy instruction. In *Systematic instruction in reading for Spanish-speaking students*. Springfield, IL: Charles C. Thomas.

Sen, R., & Blatchford, P. (2001). Reading in a second language: Factors associated with progress in young children. *Educational Psychology, 21*, 189–202. doi:10.1080/01443410020043887

Shanahan, T., & Beck, I. L. (2006). Effective literacy teaching for English-language learners. In D. August & T. Shanahan (Eds.), *Developing literacy in second-language learners* (pp. 415–488). Mahwah, NJ: Lawrence Erlbaum Associates.

Stanovich, K. E. (1980). Toward an interactive-compensatory model of individual differences in the development of reading fluency. *Reading Research Quarterly, 16*, 32–71. doi:10.2307/747348

Stanovich, K. E. (1986). Mathew effects in reading: Some consequences of individual differences in the acquisition of reading. *Reading Research Quarterly, 21*, 360–406. doi:10.1598/RRQ.21.4.1

Strecker, S. K., Roser, N. L., & Martinez, M. G. (1998). Understanding oral reading fluency. In T. Shanahan & F. V. Rodriguez-Brown (Eds.), *National reading conference yearbook* (Vol. 47, pp. 295–310). Chicago, IL: National Reading Conference.

Taylor, B. M., Pearson, P. D., Clark, K., & Walpole, S. (2002). Effective schools and accomplished teachers: Lessons about primary-grade reading instruction in low-income schools. In B. M. Taylor & P. D. Pearson (Eds.), *Teaching reading: Effective schools, accomplished teachers* (pp. 3–72). Mahwah, NJ: Lawrence Erlbaum.

Valdés, G. (1998). The world outside and inside schools: Language and immigrant children. *Educational Researcher, 27*, 4–18. doi:10.3102/0013189x027006004

Verhoeven, L. (2000). Components in early second language reading and spelling. *Scientific Studies of Reading, 4*, 313–330. doi:10.1207/S1532799XSSR0404_4

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