EXPLORING THE NATURE OF EFFECTIVE WORD STUDY INSTRUCTION FOR STRUGGLING READERS: PRACTICAL APPLICATIONS FOR BROADER PERSPECTIVE OF THE SIMPLE VIEW OF READING

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Effective reading instruction plays an important role in improving students' outcomes in reading achievement. This paper is designed to serve as a tutorial for translating the simple view of reading model into classroom practices for improving early reading instruction. This model is used as a framework for facilitating teachers' word study knowledge for instructing both typically developing readers and struggling readers. Scientific studies on the developmental relationships between component reading skills and reading achievement and classroom strategies to facilitate effective word study instruction are discussed in the context of this model.

Student reading achievement is an issue of national concern (National Reading Panel, 2000; National Education Association, 2002). According to the results of the National Assessment of Educational Progress (NAEP) reading assessment, about two-thirds (67%) of all fourth-graders are currently reading at or below basic level, and only one-third (34%) are reading at the proficient or advanced level (National Center for Educational Statistics, NCES, 2011). Compared to scores in previous assessment years, there have been no significant changes in the percentage of fourth-graders performing at or below the basic level in reading, indicating that an overwhelming number of students continue to have reading difficulties in our nation (NCES, 2011). These statistics have been behind educational reforms that encourage educators and researchers to develop and refine ways to improve reading outcomes for struggling readers.

The No Child Left Behind Act (NCLB, 2002) and the Individuals with Disabilities Education Improvement Act (IDEIA, 2004) are examples of two key reform efforts designed to improve the reading achievement of students in the United States. An important tenet of NCLB is that local education agencies (LEAs) and school districts must provide all of their students with scientifically research-based instructional methods to ensure that all students achieve to a high standard (NCLB, 2002). Likewise, IDEIA (2004) requires that practitioners implement scientifically based instructional practices using the skills and knowledge necessary to improve the academic achievement and functional performance of children with disabilities to the maximum extent possible. Therefore, identifying effective instructional practices and encouraging educators to use those practices in their classrooms are important for improving students' reading achievement (Odom et al., 2005).

After a comprehensive review of experimental and quasi-experimental studies of early reading skills and their relationship to reading success, the National Reading Panel (NRP, 2000) underscored the five essential reading component skills acquired between kindergarten and third grade necessary for skilled reading. These skills include phonemic awareness, phonics, vocabulary skills, reading fluency, and reading comprehension (NRP, 2000). Furthermore, the Panel emphasized the necessity of children acquiring an explicit understanding of the segmental nature of language at the early stages of reading acquisition; how sounds (phonemes) are represented by letters (graphemes) and how graphemes represent phonemes. This concept, often referred to as the alphabetic principle, provides the foundational knowledge for learning phonics, acquiring rapid word recognition, and later reading comprehension and fluency (Ehri, 1992; Ehri et al., 2001).

A promising approach for identifying effective reading instruction in special education is to focus on specific areas of reading lessons, such as word study. Word study focuses on supporting students' abilities to understand patterns in words and decode words based on letter-sound correspondence. In addition to sounding out words,

word study also involves associating the pronunciation of words with the meaning of the word (Hoover & Gough, 2000). Therefore, word study contributes to reading ability by developing decoding skills that support the comprehension component of reading (Hoover & Gough, 2000). More specifically, phonologically-based skills, such as phonemic awareness and phonics, represent the word decoding element of reading. Together, decoding and comprehension are believed to lead to reading achievement. Phonological awareness is a well-documented predictor of reading skills among elementary school students (Torgesen et al., 1999; Ehri et al., 2001). Strong decoding skills are especially important when children are in the *learning to read* stage which precedes the *reading to learn* stage in later years of childhood (Hogan, Catts, & Little, 2005; Scarborough, 1998). Therefore, word study, with a focus on instruction related to decoding, has been selected as the focal area for this paper since decoding is a primary problem that elementary students with reading disabilities face, and that affects their reading achievement later in adolescence and adulthood (Ehri et al., 2001; Miller, 2011). This idea has been theoretically driven. That is, since it has been posited that the simple view of reading provides more practical implications for assessing and teaching reading skills (Hoover & Gough, 1990; Rover & Scott, 2006), the meaning of word study and its specific constructs can be also examined through the simple view of reading. In other words, four components of early reading (i.g., phonemic awareness, phonics, vocabulary, and spelling) can be interpreted as resulting from two distinct functions, decoding and linguistic comprehension skills. In this sense, I discuss the simple view of reading and apply the simple view in order to define decoding skill as a core reading component. Furthermore, relationships between the core components areas in the early grades and later reading achievement will be addressed with regard to the simple view of reading and other studies related to early reading predictors. Scientific studies that support the simple view of reading will be discussed to frame developmental relationships between specific core reading skills and reading achievement, as well as effective instructional practices for word study.

The Simple View of Reading and Its Application to Word Study
Hoover and Gough (1990) used two frameworks to describe the process of reading. The *complex view* of reading presents reading as a product of multiple linguistic and cognitive processes (e.g., lexical, structural and discourse knowledge, naming speed, working memory etc.) needed to translate spoken language into written language. In contrast, the *simple view* of reading characterizes reading as a function of two distinct domains, decoding and comprehension (Gough & Tunmer, 1986), in which comprehension refers to the ability to interpret spoken language (Catts & Kamhi, 2005). In order to illustrate this *simple* perspective on the collaborative relationship between decoding (*D*) and linguistic comprehension (*L*) in the attainment of reading achievement (*R*), Hoover and Gough (1990) developed the formula, $R = D \times L$, in which each ability is represented as the extreme skill on a continuum ranging from 0 (nullity) to 1 (perfection). As noted by Lombardino (2012), this model's elegance lies in its identification of the two core variables, decoding and linguistic comprehension, upon which reading an alphabetic language is based and its allowance for dissociations between abilities represented in these core components of reading. Hence, this model allows for identifying the strengths and/or weaknesses within these two linguistic components of skills, *decoding*, a lower level phonological skill needed to translate letters into speech sounds and in *comprehension*, a higher level semantic skill needed to understand the meanings of words and the interactions between the meanings of words and the syntactic and discourse structures in which they are embedded in both spoken language and in written language.

This simple view of reading explicitly targets two knowledge domains, phonics and vocabulary, that fall under the rubric of *word study* in teacher education. While not stated explicitly in the model, two other linguistic domains of knowledge, morphology and orthography, are inextricably tied to both phonological and semantic skills in spoken and written language and must be viewed as *part and parcel* of the components of the simple view of reading model.

Thus, this simple model, when viewed from a deeper perspective has practical implications for teachers' use of assessment and instructional strategies (Hoover & Gough, 1990; Roberts & Scott, 2006) with struggling readers in the classroom and is supported by a large body of scientific data (Snow, Griffin, & Burns, 1998). In their longitudinal study of 626 children from preschool through 4th grade, Storch and Whitehurst (2002) identified two categories of reading skills consistent with simple view of reading, code-related and oral language component skills. Code-related skills include phonological awareness, letter-sound correspondence, and print knowledge. Because these skills are closely associated with the phonological knowledge needed to segment words into phonemes and map graphemes and phonemes onto each other, they are inherent to the decoding construct in the simple view equation for reading. Conversely, oral language component skills such as vocabulary, morphology, and even pragmatics, are meaning-based higher level language skills that fall under the comprehension construct of the simple view equation. In table 1, an adapted version of the simple view model, is shown as a framework for situating the construct of *word study*.

Table 1. Simple View of Reading Model for Word Study Constructs

Decoding	x	Comprehension	=	Reading Achievement
• Knowledge Phonological Awareness • Knowledge of Phonics for Reading • Knowledge of Phonics for Spelling		• Vocabulary • Knowledge of Morphological Structures • World Knowledge and Inferential Thinking		Skilled Reading

Within the *word study* framework, phonemic awareness and phonics represent the phonologically-based skills that support the word decoding element of the simple view model while lexically-based skills, such as vocabulary, represent the linguistic comprehension element of the model. While the simple view of reading does not address spelling skills specifically, the necessity of using both code-based graphemic units to represent the phonemic units in words (i.e., letters such as *s* or *th*) and morphemic units (i.e., such as base words, prefixes, and suffixes) to represent the meaning-based units within words, spelling is linked inextricably to both the decoding and comprehension components of reading (Roberts & Scott, 2006).

Early Reading Predictors for Reading Achievement
Numerous studies have examined longitudinal data on relationships between component skills of reading (e.g., phonics, vocabulary) and reading achievement (e.g., Anthony & Lonigan, 2004; Hogan, Catts, & Little, 2005; Hoover & Gough, 1990; Storch & Whitehurst; 2002; Wagner et al., 1997). Data of this nature allows for the identification of reading skills that predict reading achievement at different points in time. Phonological awareness is a strong and significant predictor of word reading skills in elementary children until around second grade (Torgesen et al., 1999; Ehri, 1992; Ehri et al., 2001; Storch & Whitehurst, 2002). Its predictive value is diminished after this period when children are transitioning from the stage of *learning to read* into the stage of *reading to learn* (Hogan, Catts, & Little, 2005; Scarborough, 1998). For example, in a five-year longitudinal study of 216 children, Wagner and his colleagues (1997) assessed phonological awareness, word reading, and vocabulary skills from kindergarten through 4th grade. While individual differences in phonological awareness and vocabulary predicted later word reading skill, the amount of unique variance explained by phonological awareness in predicting later word reading skills declined from 23% in kindergarten to second grade, 8% from first to third grade, and 4% from second to fourth grade. Additionally, in a longitudinal study beginning in preschool, Storch and Whitehurst (2002) examined children's knowledge in two domains, code-related skills (e.g., print concepts and phonological awareness) and oral language skills (e.g., receptive vocabulary, expressive vocabulary, and narrative recall) to determine which skills best predicted future reading achievement. Consistent with previous studies, the authors found a stronger relationship between the two domains during the preschool period than in the first and second grades, showing that the predictive strength of skills within these domains varies along a developmental continuum.

In summary, while phonological awareness plays an unequivocally critical role in reading development, the extent of its contribution to reading has been found to vary at different points during the acquisition of reading (Scarborough, 1998; Torgesen, et al., 1999). The following conclusions are well supported from numerous studies on predictive relationships between reading constructs (e.g., phonological awareness skill, word knowledge) and component reading skills (decoding, comprehension): (1) decoding and linguistic comprehension, as early reading predictors, are distinguishable from one another; (2) phonological awareness is a foundational skill for word recognition and word recognition is a foundational skill for reading comprehension; and (3) both decoding and comprehension skills are essential in the development of skilled reading.

Hence, the simple view of reading serves well as a heuristic for demonstrating the interactive relationships between decoding alphabetic symbols in print and comprehending language; the importance of making these connections in the early elementary grades is well supported in scientific literature.

Effective Word Study Instructions for Students with Reading Difficulties
Phonological Awareness Instruction
In response to the wealth of evidence on the critical role of phonological awareness during the early stages of literacy acquisition, O'Connor (2007) describes activities that teachers can use in the classroom to instruct students on how words can be segmented into smaller units – a necessary skill for learning to decode. These strategies include: (1) stretching words to segment and blend them (*Let's tap out the parts of this word o..pen*);

(2) isolating the first, middle, and ending phonemes (*What is the first sound you here in the word goat*; and (3) segmenting words into all of their phonemes (*Let's count the sounds in goat* – g..o..t).

Phonics/Decoding Instruction
Because decoding is the most essential skill for reading in an alphabetic language (Moats, 1995; 2000), teachers must understand the various ways in which phonemes are represented in print in order to teach students to decode well. As noted by Henry (2003) *print cannot be understood (comprehended) if it cannot be translated into language (decoded)* (p. 3). Numerous books (e.g., Bear, Invernizzi, Templeton, & Johnston, 2004; Ganske, 2000) and explicit phonics instructional programs (e.g., Carroll, Snowling, Hulme, & Stevenson, 2003; Share, 2008) are available to help guide teachers in choosing a developmental framework for teaching word decoding. Henry (2003) and Moats (2000) recommend the following scope and sequence for teaching phonics: (1) begin with single letters and check if the child knows the letter names and corresponding sounds of both consonants and vowels; (2) once students know the sounds of most of the consonants and vowels, begin teaching to letter combinations such as initial blends, consonant digraphs, consonant blends (e.g., st-, sm-, sl-, sp-, ch, -ink, -ank, -unk, etc.), and common morphemic patterns (e.g., plurals, -s, -es; regular past tense, -ed; present progressive, -ing, etc.); (3) continue with the three-letter blends (e.g., spr, str, spl, etc.); (4) introduce common syllable patterns (e.g., VC, CVC, CCVC, etc.), common suffixes and prefixes (e.g., re-, -or, -tion, etc.), corresponding rules, compound words, and possessives; (5) introduce Latin roots (e.g., form, port, rupt, tract, script, spec, stru, fac, tend, etc) and Greek combination forms (e.g., phon, photo, gram, auto, tele, logy, etc).

Spelling Instruction
Phonemic awareness and vocabulary knowledge contribute to skilled spelling ability (Biemiller, 2006). In a meta-analysis of the impact of systematic phonics instruction on reading, Ehri and colleagues (2001) showed that phonemic awareness skills also predict spelling ability. As part of teaching students the full range of skills associated with written language, teachers need to know how to use systematic approaches for teaching spelling. Student's spellings are an excellent index of their awareness of individual phonemes and knowledge of the alphabetic principle. For example, a student who spells *cat* as *kt* shows partial knowledge of how to use letters (phonemes) to represent the two consonants in this spoken word (i.e., /k/, /a/, /t/). An understanding of the basic principles of English orthography including the alphabetic principle (i.e., representing by letters and corresponding sounds), syllable patterns (i.e., CVC as in *stop*), and morphemic units (i.e., *photo graph er*) are needed to spell proficiently (Bear et al., 2004). Hence, students' spellings play an important role in establishing connections between the phonological (sound), orthographic (spelling), and semantic (meaning) dimensions of word-level reading.

Moats (1995) underscores the importance of teachers helping students make the *spelling-meaning connection* by making explicit that words that share orthographic patterns often have similar meanings (e.g., define-definition; transfer-transportation) or fill similar grammatical roles (e.g., present progressive tense as in eating, walking, talking). Due to the multiple ways in which spelling intersects with the phonological, orthographic, and semantic dimensions of written language (Treiman & Bourassa, 2000), teaching spelling should be viewed by teachers as an essential academic skill for facilitating written language knowledge across several core components of reading (i.e, decoding, word recognition, vocabulary, reading comprehension). Similar to phonics instruction, numerous sources are available to assist teachers in choosing a scope and sequence for teaching spelling (Bear et al., 2004). Henry (2003) lists six categories of spelling rules that all teachers should use in spelling instruction: (1) silent-e rule or magic-e-rule: the silent e makes the vowel long in one-syllable words (e.g., *kite, poke,* and *snake*); (2) doubling rule: the final letters f, l, s, and z are doubled following a single vowel in a one-syllable words (e.g., *glass, yell, staff,* and *buzz*); (3) soft c and g rule: the letter c makes the /s/ sound before e, i, and y (e.g., *cell* and *city*); the letter g makes the /j/ sound before e, i, and y (e.g., *gym* and *giant*); (4) –ck, -tch, and –dge rule: when a word ends in a /k/ sound after a short vowel, the digraph –ck is used to represent the /k/ sound after a short vowel at the end of one-syllable words (e.g., *clock, rock, back,* and *sack*); when a word ends in a /ch/ sound after a short vowel, the digraph –ch is used to represent the /ch/ sound after a short vowel at the end of one-syllable words (e.g., *catch, batch*, and a suffix starting with a vowel as in *bake-baking;* when a base word ends in a final e, the final –e is dropped before adding a suffix starting with a vowel (e.g., *use-usable*, and *sale-salable);* when a base word ends in one consonant after a short vowel, the final letter is doubled before adding a suffix starting with a vowel (e.g., *shop-shopped-shopping, overlap-overlapped-overlapping, sad, -saddened*. ; and (5) plurals: Most nouns become plural by adding –s at the end of a word (e.g, *play-plays*); for nouns ending in –s, -x, -z, -ch, and –sh the –es is used for the plural forms (e.g, *glass-glasses*); for nouns ending in y, the final y is changed to i and –es is added (e.g., *fly-flies* and *try-tries*); exceptions exist for some nouns ending in f or fe (e.g., *leaf-leaves* and *knife- knives*)

Vocabulary Instruction
Vocabulary knowledge is essential to fluent reading and comprehension (National Reading Panel, 2000; Snow, Griffin, & Burns, 1998). Word knowledge in the primary grades is predictive of reading comprehension in the middle grades and beyond (Cunningham & Stanovich, 1997; Scarborough, 1998). This link between knowledge of word meanings and later text-reading fluency and comprehension is of critical importance in the context of reading instruction. Studies of vocabulary knowledge show that spoken vocabulary size, as measured by standardized vocabulary tests, is more directly related to word decoding and word recognition, whereas depth of word knowledge, as measured by tasks that tap words multiple meanings is more directly related to reading comprehension (Tannenbaum, Torgesen, & Wagner, 2006; Ouellette, 2006).

Explicit and supplemental vocabulary instruction for students in the upper elementary grades, deepens struggling readers knowledge of words and improves their comprehension (Biemiller, 2006; NRP, 2000). Students' exposure to words in context does not insure that they will acquire functional knowledge of a word's meaning. Multiple exposures to a word are necessary for the majority of students to *learn* a new word well enough to use it correctly and to comprehend it accurately (Jenkins, Stein, & Wysocki, 1984; Swanborn & de Glopper, 1999). In reference to vocabulary instruction, McKeown and Beck (2004) underscored that any successful vocabulary program must provide both formal and informal opportunities to learn and use novel words in context. Their program, *Text Talk* (Beck & McKeown, 2001), is a method for read-alouds, provides teachers with a framework for helping students construct meanings for words used in their classroom texts.

Morphological Instruction
Morphological awareness is defined as *children's conscious awareness of the morphemic structure of words and their ability to reflect on and manipulate that structure* (Carlisle, 1995, p.194). Children who attain knowledge of morphemes and morphemic structures within words can distinguish and manipulate morphological structures within words (e.g., change a present tense verb, such as *runs* to its present progressive form, *running*) and well recognize grammatical changes in words (e.g., *hope* as a noun vs. *hopefully* as an adjective). In addition, increasing children's knowledge of how words can be divided into roots (e.g., graph) and stems (graph ics) can help them capture the meanings or syntactic roles of unknown words as well as attempt to spell unfamiliar words (Nagy & Scott, 2000). Ways in which morphological awareness facilitates the learning of component reading skills such as spelling, vocabulary and reading comprehension are well documented (e.g., Bowers, Kirby, & Deacon, 2010; Carlisle, 1995; 2000; Templeton, 2004) and suggest that morphological knowledge can be a predictor and facilitator of literacy skills. Thus, morphological instruction should be used to facilitate students' literacy proficiency, especially in the development of vocabulary knowledge for complex word multisyllabic words (Bowers et al., 2010; Carlisle, 1995). Furthermore, researchers suggest that morphological awareness instruction is beneficial to struggling readers because morphological knowledge (i.e., use of orthographic structures to support meaning such as adding *ed* to indicated past tense) and orthographic knowledge (i.e., use of printed forms to convey meanings (i.e, using *ly* on beautifully in the context of *a beautifully written story)* are complimentary processes (e. g., Casalis, Cole, & Sopo, 2004).

The National Institute for Literacy (2008) suggests four instructional strategies for teaching morphology; (1) teach different morpheme patterns and grammatical affixes (e.g., base words, prefixes, and suffixes, compound words, function words, Latin morphemes, Greek morphemes, inflections, and derivations); (2) use quick speed drills to develop automatic recognition of syllables and morphemes; (3) teach the six syllable types (i.e., closed, open, vowel-consonant, vowel pair, vowel-r, and consonant-le) to strengthen vocabulary; and (4) teach the meaning of morphemes across content-area classes as well as within the context of a sentence. Henry (2003) suggests that morpheme webs or matrices can be used as effective tools to help students analyze and organize compound words and affixes once they have knowledge about several roots. The center of the web or matrix can serve as a root word and the branches from the center can include various patterns of word changes for spellings and meanings such as inflectional and derivational morphemes.

Studies on Effective Word Study Instruction
The majority of research on effective word study instruction for students who struggle in reading has focused on identifying specific factors that account for effective intervention (e.g., Chard, Ketterlin-Geller, Baker, Doabler, & Apichatabutra, 2009; Torgesen, 2000). The primary tenet of this research is that if teachers use evidence-based practices during teaching, their instruction will lead to greater gains in their students' written language achievement (e.g., National Reading Panel: NRP, 2000; Ehri et al., 200).

Ehri and colleagues (2001) conducted a comprehensive meta-analysis on the effects of phonemic awareness (PA) instruction on students' reading outcomes, using a variety of dependent and moderator variables to evaluate the effects of PA instruction on learning to read and spell. They reported that PA instruction positively

impacts reading outcomes in word reading, reading fluency, spelling, and reading comprehension for children with various reading difficulties under various conditions (e.g., classroom, small groups, or individuals, etc.). Most importantly, these authors stated that PA instruction was most effective *when it was taught with letters than without letters, when one or two PA skills were taught than multiple PA skills, when children were taught in small groups than individually or in classrooms, when instruction lasted between 5 and 18 hours rather than longer, and when children were taught by classroom teachers* (p. 251).

While PA instruction helped all children learn to read, its impact was greatest with preschool and kindergarten, indicating that PA instruction is more important for younger students prior to formal reading instruction. However, Ehri et al. noted that students whose struggles with reading are associated with depressed phonemic knowledge should benefit from PA instruction regardless of their grade levels. Data from their meta-analysis suggests that regardless of whether or not children have difficulties learning to read or are at risk for such difficulties, the critical components of effective reading must be acquired in relatively invariant sequence for normal reading to occur. Instruction in morphological knowledge is particularly when children are expected to (a) read more derived words to gain meaning from novel words encountered in written text and (b) comprehend the meaning of the words through analysis of the word parts (Carlisle, 2004; White, Power, & White, 1989).

Struggling readers are likely to need instruction that is more intensive, supportive, and comprehensive across these areas than students without reading difficulties (Foorman & Torgesen, 2001). English language learners (ELLs) who struggle with reading also need such instruction to improve their reading abilities. Gersten and his colleagues (Gersten, Baker, Haager, & Graves, 2005; Baker, Gersten, Haager, & Dingle, 2006) investigated relationships between observed teachers' practices and English language learners (ELLs)' growth on reading achievement. In this study, the researchers found that the quality of instruction in vocabulary, phonemic awareness, and phonics was higher in high-performing classrooms. Most importantly, ELLs who received highly rated instruction showed performance levels similar to native English-speaking children, showing that teacher practices in word study positively impact ELLs' growth and performance on reading. In light of these findings, teachers should recognize that high quality phonemic awareness and phonics instruction contribute to increased skill in decoding, word recognition, reading fluency, and reading comprehension skills for Native English speakers as well as ELLs with reading difficulties.

Instructional Processes for Students' Successful Reading Outcomes
For nearly two decades, researchers have been attempting to describe exactly what it is that effective reading teachers do to promote the achievement of their students (e.g., Foorman & Torgesen, 2001; McCutchen, et al. 2002; NEA, 2002; Pianta et al., 2008; Pressley et al., 2001; Taylor et al., 2001, 2002). Though these studies have not examined the role that effective instructional practices play in the achievement of students with disabilities, they provide a good starting point for examining what *high quality and effective* instruction might look like. Thus, it is expected that reviewing research on best practices in general education should provide relevant information for the use of effective reading instruction practices for special education teachers.

The National Education Association (NEA, 2002) reported nine characteristics of effective instructional practices based on common findings across recent studies. These include: (1) maintaining instructional balance; (2) stressing higher-level thinking; (3) applying skills and strategies for word recognition and comprehension skills; (4) providing a substantial amount of coaching in the form of support and feedback; (5) encouraging students to work independently and take responsibility for their own learning; (6) motivating instruction and fostering active involvement; (7) having high expectations for reading growth; (8) developing classroom management; and (9) building strong relationships with students (Block & Pressley, 2002; NRP, 2002; Pressley, Wharton-McDonald, Allington, Block, & Morrow,1998; Pressley, Wharton-McConald et al., 2001; Taylor et al., 2001).

These findings are in line with research on effective teaching practices described by Taylor et al. (2001) and Pressley and his colleagues (1998, 2001). Using the findings from large scale studies on effective teachers of reading, Taylor and his colleagues (2002) found that effective teachers provide more small-group instruction, emphasize high pupil engagement, prefer active coaching to telling, and engage students in more higher-level thinking than less effective teachers. Similarly, Pressley and colleagues (1998) examined literacy instruction of the first grade teachers who were nominated as exemplary in reading instruction by their peers and supervisors. They found that the most effective teachers displayed high academic engagement, excellent classroom management, positive reinforcement and cooperation, explicit teaching of skills, emphasis on literature, much reading and writing, matching of task demands to student competence, encouragement of student self-regulation, and strong cross-curricular connections.

Although the majority of studies on effective instructional practices have examined general education students and their teachers, a few have investigated effective instructional practices for teaching word-level reading with struggling readers or students identified with reading disabilities (e.g., Brownell et al., 2007; Rankin-Erickson & Pressley, 2000). For example, Rankin-Erickson and Pressley (2000) selected a sample of special education teachers who were nominated as effective and outstanding in teaching elementary students with reading disabilities. The authors asked these teachers to answer the following questions in a questionnaire: (1) what instructional techniques do they use in their classrooms?; (2) what practices and activities do they use to engage students?; (3) what instructional materials do they use?; and (4) how do they respond to students' errors? The authors concluded that while there was no definitive set of strategies, these successful teachers commonly responded that they (1) created a positive classroom environment, (2) modeled target responses, (3) provided frequent positive feedback, (4) attempted to convey the goal of every lesson, (5) discussed the importance of reading, (6) encouraged personal interpretations of text, and (6) created an exciting mood for reading.

These same strategies were used for both word recognition and reading comprehension instruction by Rankin-Erickson & Pressley (2000) and were similar to effective practices observed in previous studies of general education teachers.

Furthermore, Brownell and her colleagues (2007) investigated the relationship between special education teachers' domain knowledge, their classroom practices for teaching reading, and the reading achievement of their students with learning disabilities. They observed 92 special education teachers in addressing the issue of, *what special education teachers should know and be able to do* (p.38), a critical question for improving teacher instruction and student achievement. Results showed that special education teachers had fairly strong knowledge of teaching reading and their practices in teaching decoding were affected by the level of knowledge. Most importantly, findings revealed that when special education teachers provided more explicit and engaging instruction and skillful classroom management their student gains were greater.

In short, based on the results of the findings from previous studies, there is some evidence to conclude that effective teachers commonly put more emphasis on characteristics such as balanced instruction, modeling strategies, active coaching, active engagement, classroom management, and students' self-regulation. All of these being practices are closely related to improvement in students' reading outcomes. Taken together, the research on effective elementary reading teachers have yielded a compilation of factors that characterize good teachers and their teaching practices. Unfortunately, however, this research exists only for the specifically targeted practices of successful teachers in the context of specific instructional lessons (Brownell et al., 2009; 2010; Taylor et al., 2002).

Towards Best Scientifically-Based Strategies for Intervention
There have been efforts to define the most effective strategies for teaching reading (e.g., National Reading Panel, 2000). The No Child Left Behind Act (2001) recommended that teachers' use scientifically based strategies, or evidence based strategies to provide appropriate reading instruction for students with reading difficulties. The National Reading Panel (NRP) suggested evidence based strategies for each of five essential components. For word study, the panel emphasized the importance of explicit and intensive reading intervention when teaching struggling readers and the importance of children acquiring phonemic awareness and phonics as foundational skills for learning to read an alphabetic language.

A review of effective word study instructions for students with reading difficulties showed that the following components were critical in word study instruction: phonological awareness instruction (i.e., instruction on how words can be segmented into smaller units), phonics/decoding instruction (i.e., representation of phonemes in print), spelling instruction (i.e., how to use phonemes to represent spoken word), vocabulary instruction (i.e., knowledge of words), and morphological instruction (i.e., understanding of morphemic structures). Several studies examining the effectiveness of reading instruction that focused on various components of word study showed evidence for the effectiveness of word study, particularly when it was coupled with explicit and engaging word study instruction within a positive classroom environment with frequent feedback and effective classroom management (e.g., Brownell et al., 2007; Rankin-Erickson & Pressley, 2000).

From the perspective of the *simple view reading*, the best scientific strategies for improving decoding skills evolve from teachers' understandings of code-related skills, such as phonemic awareness and letter-sound correspondence. Teachers must know how to teach these core components of word recognition based on individual students' levels of phonemic knowledge. Most importantly, teachers need to start to teach word study by understanding the constructs and content of word study and type of difficulties related to processing print that their students are experiencing.

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