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Reading Intervention Research for Secondary Students with Learning Disabilities: A Data-based and Multivocal Synthesis

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Reading Intervention Research for Secondary Students with Learning Disabilities: A Data-based and Multivocal Synthesis

by

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Dissertation

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

The University of Texas at Austin

May 2006

Dedication

This work is dedicated to all of those who provided guidance, support, and encouragement for which I am truly grateful. Many thanks to my mentors and dissertation co-chairs, Sharon Vaughn and Audrey McCray Sorrells; committee members, Carolyn Denton, Donald Hammill, and Mark O'Reilly; department chair, Herb Rieth and graduate advisor, Shernaz Garcia; team members, Pam Bell Morris, Theresa Clarke, Thea Woodruff, Alejandra Rodriquez-Galindo, Desirée Pallais Downing, Candice Knight, Jennifer Wick, Linda Colburn, Marty Hougen, Meredith Doxey, and Lindsay Lamb; my fellow doctoral students and colleagues, Barbara Dray, Sue Seely, Ae-Hwa Kim, Caroline Ingle Kethley, Erica Simon, Dauna Howerton, Cathy Thomas, Jeannie Wanzek, Christie Cavanaugh, Jade Hjelm, Amory Cable, Meghan Edmonds, Elizabeth Swanson, and Rubén Garza; and lastly to my dear husband Will and son Jake for providing motivation and devotion.

Reading Intervention Research for Secondary Students with Learning Disabilities: A Data-based and Multivocal Synthesis

Publication No._____

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The University of Texas at Austin, 2006

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The purpose of this study is to synthesize findings from the research studies from 1980 to 2004 (N=30) that examine effects of reading interventions on reading performance for adolescents (grades 6–12) with learning disabilities (LD), as well information collected through focus group interviews of reading professionals in the secondary schools concerning their use and perceptions of effective reading interventions. Results reveal that practitioners have limited opportunities to learn about and utilize identified effective interventions in a meaningful way. This research confirms the need for consideration of social validity issues related to secondary consumers of adolescent reading intervention research design so to increase the likelihood of the adoption and sustainability of research-based effective practices in classrooms; and that feasibly of implementation within the constraints of the school environment is an area in need of address.

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Chapter I: Introduction

In the wake of No Child Left Behind (NCLB, 2002) and its national initiative, Reading First, with its emphasis on prevention and early intervention of reading difficulties in kindergarten through third grade, adolescents have continued to be overlooked and under-taught despite the fact that the majority of adolescents with learning disabilities (LD) lack the necessary preparation to meet the challenges of high school and beyond (Swanson & Deshler, 2003). The reality is that until the goal of early intervention is accomplished through the widespread implementation of strong reading programs in the primary grades, the secondary grades (middle and high school) will continue to have lower achieving students in large numbers (Neil & Kelly, 2002). This trend exists despite the analyses of intervention research confirming the positive outcomes of educational interventions for adolescents who struggle with reading (Swanson, 1999, 2001; Swanson & Deshler, 2003; Swanson & Hoskyn, 2001; Swanson, Hoskyn, & Lee, 1999).

According to Swanson (1999), reading difficulties are one of the most significant problems that children identified with LD experience. Approximately 80 percent of students identified with LD have reading problems (Snow, Burns, & Griffin, 1998) and secondary students are the fastest growing segment of the population served by special education (Lyon, 2002, June 6). Reading difficulty is a defining characteristic for many adolescents (Lyon, 1995; U.S. Department of Education Office of Special Education and Rehabilitative Services, 2002).

READING RESEARCH

Educational interventions have produced positive outcomes for adolescents who struggle with decoding, fluency, vocabulary development, and reading comprehension. Important among the findings of analyses of intervention research are the effectiveness of (a) a direct instruction approach to teaching interventions to increase word identification ability and (b) a combined approach utilizing both direct instruction and strategy instruction to improve reading comprehension (Bryant, Goodwin, Bryant & Higgins, 2003; Gersten, Fuchs, Williams, & Baker, 2001; Peterson, Caverly, Nicholson, O'Neil, & Cusenbary, 2000; Swanson, 1999, 2001; Swanson & Deshler, 2003). Moreover, specific instructional components of effective interventions such as the use of explicit practice and advance organizers were found to improve the long-term benefits of interventions for adolescents with reading-related disabilities (Kim, Vaughn, Wanzek, &Wei, 2004; Swanson & Deshler, 2003)

READING INTERVENTIONS

Word identification interventions that incorporated a direct instruction approach to teaching analysis of word structure (syllables, affixes, roots, and stems) have been found to be effective for teaching struggling adolescent readers how to decode the long, multisyllabic words found in the adolescents' content-area texts (Archer, Gleason, & Vachon, 2003; Lenz & Hughes, 1990). Teachers using direct instruction made strategies evident by modeling their use and talking about their thought processes as they demonstrated the strategy using think alouds. Further, teachers broke the learning task into small parts and administered frequent probes to check for understanding and mastery of skills. Critical to the direct instruction approach and effectiveness of word

identification interventions was practice with guidance from the teacher (monitoring with specific corrective feedback) and independent practice (Swanson et al., 1999).

Modeling, corrective feedback, and practice were also found to be critical components of interventions to improve the reading fluency of younger and older struggling readers (Archer et al., 2003; Chard, Vaughn, & Tyler, 2002). Interventions in which a skilled reader (teacher or other adult, cross-age or same-age peer) modeled fluent reading of a passage and then gave specific corrective feedback (error correction) as the less skilled reader read the passage repeatedly (practice) had strong effects on reading fluency (Bryant et al., 2000; Daly & Martens, 1994; Mastropieri, Leinart, & Scruggs, 1999; Mercer, Campbell, Miller, Mercer, & Lane, 2000; Meyer & Felton, 1999).

Bos and Anders (1990) found that a direct instruction approach that included intensive practice of memorized definitions, however, was less effective as a means of vocabulary development for students with LD. Alternately, the interactive treatment conditions in which the focus was on activating prior knowledge to develop semantic relationships and conceptual meanings of words through discussion and the use of concept maps provided long-term learning and transfer to reading comprehension (Bos & Anders, 1990).

Effective reading comprehension interventions have used a combination of the direct instruction approach that had proven beneficial with word identification interventions (e.g., Lenz & Hughes, 1990) and the interactive discussion of relationships and meaning utilized in effective vocabulary interventions (e.g., Bos & Anders, 1990). Activation of prior knowledge and student-led discussion of predictions, text structure, and summary development within interactive small groups produced improvements in

understanding and recall of expository text for students who struggled with reading comprehension (Englert & Mariage, 1991: Klingner & Vaughn, 1996: Vaughn, Klingner, & Bryant, 2001).

Effective Instructional Components

Swanson and Hoskyn (2001) identified instructional components that contributed to positive outcomes across all of the studies in their meta-analysis of effective interventions. Three components strongly influenced student learning across the age-span: (a) reducing task complexity by breaking down skills and teaching them in a sequence, (b) teaching in small, interactive groups of two to five students, and (c) directed response questioning in which students were encouraged to think aloud or engage in self-dialogue as they read. However, one component that included advanced organizers and explicit practice contributed independently to the variance in positive outcomes for students with LD. In other words, studies that included advance organizers and explicit practice in the treatment activities had consistently enhanced intervention outcomes (Swanson & Hoskyn, 2001).

Overall, converging evidence from several decades of intervention research supported interventions for adolescents with reading-related disabilities that were taught in small, interactive groups, utilized advance organizers, provided extended practice opportunities, and focused on strategic processing with assistance from teacher modeling, guidance, reduction of task difficulty, and use of specific corrective feedback. Studies that compared reading outcomes for varying sizes of groups found that one-to-one instruction was comparable to small group instruction (three to four students) (Swanson, 1999; Swanson & Hoskyn, 2001; Swanson et al., 1999). The finding that small group

instruction, including working in pairs, is more effective for students with disabilities was further supported by the analyses of interventions by Swanson and his colleagues (Swanson & Hoskyn, 2001; Swanson et al., 1999). Results of these analyses indicated that small, interactive groups were especially effective for reading comprehension instruction. For example, students with disabilities working in small groups (five students) to negotiate meanings of passages (Englert & Mariage, 1991) outperformed students in control classrooms who experienced traditional whole class instruction utilizing discussion on a measure of reading comprehension (free-recall). Although grouping format was not the focus of the intervention, the authors suggested that strategy use in small, interactive groups produced stronger comprehension effects for the students with LD than whole class discussion. DiCecco and Gleason (2002) found that graphic organizers aid students with LD in their recall of relational knowledge. Strategy instruction, when combined with use of graphic organizers, was found by Mastropieri, Scruggs, and Gaetz (2003) to increase reading comprehension. While these results offer promise for instruction, the Division for Learning Disabilities of the Council for Exceptional Children (2002) advised that , research treatments are only effective when implemented accurately, consistently, and intensively. This is confirmed by the experience of Archer et al. (2003, p. 99), "that student gains in secondary reading programs are much more likely when teachers implement research-validated programs with proven effectiveness with adolescents."

The Need for a Synthesis of the Literature and Consideration of Social Validation

Teachers of adolescents must be able to adjust their instruction for a wide range of readers, from the very strong readers to those who have not learned the foundations of reading (Neal & Kelly, 2002). Although the convergence of research provides plentiful evidence of the content and components of effective interventions, employment of reading interventions is dependent upon the knowledge of the teacher (McCutchen & Berninger, 1999; McCutchen, Abbot, Green, Beretvas, Cox, Potter, et al., 2002). To offset the reading failure of adolescents with LD, teachers who provide reading instruction need to have the knowledge and skills to implement effective reading interventions that target the difficulties these students encounter (Bulgren, Deshler, Schumaker, & Lentz, 2000; Deshler, 1998; Swanson, 2001).

Fidelity of the interventionist to the prescribed treatment, although not consistently reported in special education research, is being advocated as a quality indicator that should be included (Gersten, Coyne, Greenwood, & Innocenti, 2005). However, the very question of whether the intervention itself is acceptable to those for whom it is intended (primary consumers or students) and those who provide it (secondary consumers or interventionists) is often missing from reading intervention research including children and adolescents with LD. It is important to note that researchers involved in behavioral interventions have long been called upon to assess behavior treatments through social validation (Kazdin 1977; Wolf, 1978). This practice of considering the value-added of providing interventions for various consumers is commonplace in current behavioral research (Lancioni, Singh, O'Reilly, Baccani, Pidalla,

Oliva et al., 2005; Olive & Liu, 2005). Graham (2005) suggests that it is questionable to do research in interventions for students with LD that does not address social validity.

While reading interventions address problems of societal importance (e.g., the teaching of fundamental skills and prevention of student dropout), addressing the social validity of such academic interventions provided by interventionists, or secondary consumers, has been lacking in the literature until recently. Graham (2005) addressed the concept of social validity in his reflection to a lead article by Gersten (2005) on intervention research in which Gersten illuminated the need for collaboration between researchers and teachers. This is one of several factors required to address the separation that exists between the special and general education research and practice communities (Greenwood & Abbott, 2001).

Over the past 25 years, a significant number of intervention studies have been conducted in the areas of fluency, comprehension, vocabulary, decoding, strategy instruction, and grouping practices that have influenced general and special education practices. Swanson, Hoskyn, and Lee (1999) published a thorough intervention research synthesis including studies from 1963 to 1997 that focused on interventions for students with LD—though not specifically on secondary learners. This synthesis extends that work in three important ways: (1) the synthesis focuses on adolescent learners with LD, only isolating those academic reading components critical for instruction, (2) a multivocal synthesis component is added, which involves the integration of practitioner and stakeholder insights into the empirical knowledge base, and (3) the synthesis includes research conducted in the 6 years since the Swanson et al. (1999) synthesis. A current synthesis is necessary to consolidate the existing knowledge base by including reading

intervention research from 1980 to 2004, to draw conclusions about which reading interventions yield positive outcomes for adolescents with reading-related learning disabilities, and to promote the dissemination of existing information on effective interventions.

This study uses multiple methodologies with the intent of providing a richer understanding of reading interventions than either method can provide on its own. The addition of a multivocal component further extends the work of Swanson et al. (1999) by including a qualitative lens through which to view educators' perceptions of reading intervention research and their rationale for adopting and sustaining, or in other instances, rejecting interventions that have been empirically validated as effective. While the data-based synthesis allows for the analysis of empirically gathered research, the multivocal component, using a qualitative design and captured through focus group interviews, allows for determination of the underlying belief systems and biases of professionals who implement reading interventions with adolescents with LD (Ogawa & Malen, 1991), something missing from existing research and relevant to the understanding of reasons that teachers and others who participate in intervention research often do not continue with interventions once the researchers depart from their classrooms or do not implement them with fidelity (Greenwood & Abbott, 2001; Jitendtra, 2005). The ultimate goal of this synthesis is to affect reading intervention design and improve practices implemented at the secondary level for adolescents with LD, as well as to document secondary consumers' judgment of the social validity of reading interventions they often employ.

STATEMENT OF THE PROBLEM

Struggling adolescent readers with LD face significant academic demands (Bryant, Vaughn, Linan-Thompson, Ugel, Hamff, & Hougen, 2000; Bryant, Linan-Thompson, Ugel, Hamff, & Hougen, 2001; Swanson, 2001). Secondary students require a wide range of interventions to meet the challenges and demands of middle and high school (Biancarosa & Snow, 2004). Compounding this problem, secondary teachers often lack the knowledge and skills for improving students' reading skills and offer minimal and ineffective measures of addressing reading deficits to a population of students perceived to be "reading to learn," not learning to read, by the time they leave elementary school (Kamil, 2003).

SIGNIFICANCE OF THE PROBLEM

A growing number of secondary students with reading-related disabilities have been found to lack or misuse effective reading strategies, read less than in earlier grades, report fewer opportunities to read than their peers without reading disabilities, and express negative attitudes toward reading and remedial reading instruction and materials (Reetz & Hoover, 1992; Feldman, 2004). "One of the most vexing problems facing middle and secondary school teachers today is that many students come into their classrooms without the requisite knowledge, skills, and disposition to read and comprehend the materials placed before them" (Rippen & Brewer in Snow, 2002, p. iii). Adolescents with reading-related LD experience difficulties related to insufficient mastery of basic reading skills as well as inefficient use of higher-order processing skills required for comprehending text (Swanson et al., 1999). As students progress through the grades, they are increasingly required to draw upon their reading comprehension skills to

learn from text (Williams, 1998). Moreover, many adolescents cannot identify and follow the organizational structure of texts. These learners tend to struggle to process unfamiliar technical vocabulary and expository text required in content area learning (Lapp, Flood, & Ranck-Buhr, 1995). The demands of the secondary school curriculum compound their struggles as the purpose of reading instruction shifts from reading development to learning and remembering content in the late elementary grades, which becomes the primary focus in secondary content-area instruction (Bryant, 2003; Kamil 2003).

STATEMENT OF THE PURPOSE

The purpose of this study is to synthesize findings from the research studies that examined effects of reading interventions on reading performance for secondary students (grades 6–12) with learning disabilities (LD), as well information collected through focus group interviews of reading professionals in the secondary schools concerning their use and perceptions of effective reading interventions, and to analyze the differences between research findings and actual intervention practices.

RESEARCH QUESTIONS:

1. What outcomes related to students with a learning disability (LD) in reading can be empirically derived from a review of reading intervention research at the secondary level from 1980 to 2004 from single-subject, single-group, and multigroup design?
    a. How are outcomes influenced by who provides the intervention?
    b. How are outcomes influenced by the type of intervention?
    c. How are outcomes influenced by the intensity or duration of the intervention?
    d. How are outcomes influenced by the grade grouping (i.e., middle school vs.

high school)?

e. How are outcomes influenced by the type of outcome measures (standardized tests vs. researcher-developed measures)?
f. How are outcomes influenced by design type (e.g., group, single-subject)?
g. How are outcomes influenced the fidelity of implementation?
h. Do outcomes vary by ethnicity of the sample?

2. How do professionals who provide instruction for secondary students with LD perceive secondary reading interventions?
   a. With which reading interventions are professionals familiar?
   b. What reading interventions do professionals report using?
   c. What do professionals report as being barriers/facilitators to implementing reading interventions?
   d. What factors influence the selection, rejection, or alteration of a reading intervention?
   e. What are the differences between the empirical evidence and professionals' perceptions of effective reading interventions?
   f. What differentiates the most effective and least effective secondary reading interventions for students with LD?

CHAPTER II: Review of the Literature

An overview of the literature providing a rationale for the need for a synthesis on effective reading interventions for adolescent readers with learning disabilities (LD) is provided in this chapter. The focus on adolescents with LD is necessary because of the increased challenges encountered with the curriculum and learning demands of middle and high school and because the gap in academic performance for adolescents continues to widen (Swanson & Hoskyn, 2001). Appropriate and effective reading interventions for older students who did not acquire grade-level reading skills by third grade and continue to struggle with reading well into middle and high school requires the attention of researchers and practitioners as the field struggles with how best to serve students who have not learned to read well enough to meet the demands of secondary educational settings.

The purpose of this synthesis is to extend the work of Swanson et al. (1999) in three important ways: (1) focusing on the identification and analysis of effective reading interventions through a synthesis that focuses on secondary learners, isolating components critical for instruction for this grade group, (2) conducting a focus group to obtain a multivocal component to add to the data-based synthesis involving the integration of practitioner and stakeholder insights into the empirical knowledge base, and (3) adding studies conducted after 1998 that were not part of the previous synthesis. Fulfilling these three foci consolidates the existing knowledge base by including reading intervention research from 1980 to 2004, drawing conclusions about which reading interventions yield positive outcomes for adolescents with reading-related learning

disabilities, and promoting the dissemination of existing information on effective interventions.

THE ADOLESCENT STRUGGLING READER

The National Center for Educational Statistics (NCES, 1998) indicates that more than 66 percent of 8th grade students and more than 50 percent of 12th grade students are below proficiency level in reading. Moreover, older struggling readers do not read because it is taxing, laborious, and extremely frustrating (Moats, 2001). Nationally, approximately 44 percent of 4th graders, 30 percent of 8th graders, and 25 percent of 12th graders read below grade level (National Assessment of Educational Progress (NAEP), 2002). NAEP data further reveal that performance gaps in reading between European Americans and African Americans, European Americans and Hispanic Americans, and between those not eligible and eligible for free/reduced lunch have remained steady between 1998 and 2002 (NAEP, 2002). Experts in the field of reading are in consensus that as many as 70 percent of students struggle with reading and require differentiated instruction (Biancarosa and Snow, 2004).

Many students with learning disabilities who struggle with reading have not mastered basic skills by the time they complete elementary school (Archer et al., 2003; Bryant et al., 2000; Shankweiler, 1989, 1999; Shankweiler, Crain, Katz, Fowler, Liberman, Brady, et al., 1995; Shankweiler, Lundquist, Dreyer, & Dickinson, 1996). These students often experience gaps of as much as 5 years between grade level and reading level (Archer et al, 2003), which has a negative impact on mastering the information in content-area texts (Lenz & Hughes, 1990). Poor word identification skills, considered the source of most serious reading problems (Adams, 1990; Archer et al.,

2003), result in reading that is slow and inaccurate (Archer et al., 2003). Research shows that much of the background knowledge that is necessary for comprehending text is gained from wide reading and that extensive reading facilitates vocabulary development (Baker, Simmons, & Kameenui, 1995). Also, a sense of the structure of text is developed as students read more narrative and expository texts (Gersten et al., 2001). Therefore, students with learning disabilities who avoid reading due poorly developed reading skills have fewer opportunities to acquire knowledge on a variety of subjects, do not develop a critical sensitivity to text structure, and have reduced exposure to vocabulary that would help them comprehend complex content-area texts (Stanovich, 1986).

Although many students with learning disabilities have the cognitive abilities to use the strategies of skilled readers (Chan & Cole, 1986; Gersten et al., 2001), poor readers frequently do not know when to use strategies or how to use strategies effectively and efficiently (Deshler et al., 1996; Gersten et al., 2001; Kavale, 1980; Torgesen, 1977). The lack of or inefficient use of strategies to comprehend text or to repair problems in understanding obstructs reading comprehension and lessens retention of the material that is read (Gersten et al., 2001; Torgesen, 1977).

Adolescents with learning disabilities who struggle with reading experience problems related to insufficient mastery of basic reading skills as well as inefficient use of higher-order processing skills required for comprehending text. Their difficulties are further compounded by the demands placed on them by the secondary school curriculum.

The curricular demands of secondary school require that students have mastered most of the basic reading skills and are able to focus on learning content and developing problem solving skills (Bryant et al., 2000; Gersten, et al., 2001a). Competent readers can

identify words accurately and automatically (decoding), read with sufficient speed to be able to focus on gaining meaning from what they read (reading fluency), and figure out unfamiliar vocabulary from context by using well-developed background knowledge (vocabulary development) (Pressley & Afflerbach, 1995). Struggling adolescents need compensatory support for the basic skills of fluency, word analysis, and vocabulary development as well as strategic support for reading and studying through instruction in the use of metacognitive strategies for comprehending text and remembering content.

Adolescents who are struggling readers or have a reading disability are at a high risk for dropping out of school and for remaining underemployed or unemployed, leading to dismal psychological, social, and emotional outcomes (Lyon, 1997). For those struggling secondary students who do stay in school, the performance gap between them and their normally achieving peers may continue to widen as the expectations for proficient skills in textbook-driven content-area curriculum becomes the norm for instruction (Bryant, 2003). Perhaps even more alarming is the fact that most secondary teachers, although competent in content instruction, lack the knowledge and skills for improving the reading performance of students who cannot read the content (Wilson, 1999). Schumm and Vaughn (1995) reported that adolescents are not necessarily provided with differentiated instruction for students with reading difficulties even though effective research-based reading strategies have been documented.

Examining Reading Research Fundamentals and Their Influence on Adolescent Literacy

Research reports issued by Snow, Burns, and Griffin (1998), the National Reading Panel (2000), RAND Reading Study Group (2002), Snow and Biancarosa (2003), and

Biancarosa and Snow (2004) examined evidence in support of programs and interventions that could effectively prevent reading problems in children or solve reading challenges in adolescents.

PREVENTING READING DIFFICULTIES. In their book *Preventing Reading Difficulties,* Snow, Burns, and Griffin (1998) identified three areas that, if appropriately taught, would prevent reading problems: knowledge of the alphabetic principle, fluency, and comprehension. If students do not acquire the knowledge and skills in each of these areas, they will be at risk for developing reading difficulties. While this review is of primary importance for students in elementary school, it becomes pertinent for students of any age who do not attain proficiency in these areas but are passed on to secondary school unprepared for the reading challenges presented.

*THE NATIONAL READING PANEL***.** The National Reading Panel (NRP), (NICHD, 2000, p. 7–8) synthesized the research on reading instruction in alphabetics (phonemic awareness and phonics), fluency, comprehension (divided into vocabulary instruction and text comprehension strategy instruction and teacher preparation related to comprehension strategy instruction), teacher education and reading instruction, and computer technology and reading instruction. This summary was for elements that contributed to successful beginning reading. While these analyses are helpful to form guidelines to assist schools in their decision-making, the evidence related to effective instruction for older students with disabilities was not examined by this panel. Findings on these effective components and their relation to developing reading skills in beginning readers are summarized below:

Phonemic Awareness

- Phonemic awareness (PA) training was the cause of improvement in students' phonemic awareness, reading, and spelling.
- Children of varying abilities improved their PA and reading skills as a function of training in PA.
- Characteristics found to be most effective in enhancing PA, reading, and spelling included explicitly and systematically teaching children to manipulate phonemes with letters, focusing the instruction on one or two types of phoneme manipulations, and teaching students in small groups.

Phonics

- Systematic phonics instruction produced significant benefits for students in kindergarten through sixth grade and for children having difficulty in learning to read.
- Older students receiving phonics instruction were better able to decode and spell words and to read text orally, but their comprehension of text was not significantly improved.
- Systematic synthetic phonics instruction (teaching students explicitly to convert letters into sounds [phonemes] and then blend the sounds to form recognizable words) had a positive effect on disabled readers' reading skills.
- Systematic synthetic phonics instruction was significantly more effective in improving low socioeconomic status (SES) children's alphabetic knowledge and word reading skills than instructional approaches that were less focused on these initial reading skills.

Fluency

Guided Oral Reading

- Guided, repeated oral reading procedures that included guidance from teachers, peers, or parents had a significant and positive impact on word recognition, fluency, and comprehension across the grade levels.

Independent Silent Reading

- No positive relationship between programs and instruction that encouraged large amounts of independent reading and improvements in reading achievement, including fluency, was found.
- Available data analyzed suggest that independent silent reading is not an effective practice when used as the only type of reading instruction to develop fluency and other reading skills, particularly with students who have not fully developed critical alphabetic and word reading skills.

Comprehension

Vocabulary Instruction

- Vocabulary instruction does lead to gains in comprehension, but methods must be appropriate to the age and ability of the reader.
- Techniques such as task restructuring and repeated exposure (including having students encounter words in various contexts) appear to enhance vocabulary development.
- Substituting easy words for more difficult words can assist low-achieving students.

Text Comprehension Instruction

- Teaching a combination of reading comprehension techniques is most effective and can assist in recall, question answering, question generalization, and summarization of texts.
- Used in combination, the above techniques can improve results on standardized comprehension texts.

Teacher Preparation and Comprehension Strategies Instruction

- Extensive formal training in reading comprehension, preferably at the preservice level, is needed for teachers to use strategies effectively.

Teacher Education and Reading Instruction

- Inservice professional development produced significantly higher student achievement.

Computer Technology and Reading Instruction

- Computer technology can effectively be used for reading instruction.

THE RAND READING STUDY GROUP. The RAND Reading Study Group (RRSG, 2002) assembled leaders in the field of reading to propose strategic guidelines for long-term research and development in improving reading comprehension outcomes. This report advocates that teachers must teach comprehension explicitly, beginning in the primary grades and continuing through high school. Their research agenda was based on the following concerns (p. 4–8): 1) The demand for literacy in schools is high and getting higher; 2) the level of reading skills remains stagnant; 3) reading comprehension instruction is often minimal or ineffective; 4) the achievement gap between different

demographic groups persists; 5) high-stakes testing is affecting reading comprehension instruction in unknown ways; 6) the preparation of teachers does not adequately address children's needs for reading comprehension instruction; and 7) making good on the federal investment in education requires more knowledge about reading comprehension.

In order to promote the development of proficient reading and prevent comprehension difficulties, RRSG proposed that a research program be developed that can actually improve comprehension outcomes, noting the necessity for (p. xx):

- Substantial, long term funding;
- Intellectual leadership that extends over time and is free from political influence;
- Procedures planned in advance for synthesizing knowledge across various individual research activities;
- Thoughtful, scholarly, and responsive research solicitations; and
- An increase in the rigor and quality of the research review.

READING REPORTS FOR OLDER READERS

The next two reports focused on older readers; however, neither provided specific instructional suggestions for individuals with disabilities. The Carnegie Corporation of New York-sponsored report by Snow and Biancarosa, *Adolescent Literacy and the Achievement Gap: What Do We Know and Where Do We Go From Here?* (2003), concluded that coordinated effort is needed to jumpstart a focus on adolescent literacy in order to resolve the minority achievement gap. Their report identified another achievement gap—the gap between what we are doing to improve the literacy

achievement of underperforming adolescents and what we would need to know and do in order to address this pressing social problem.

Lastly, Biancarosa and Snow (2004), in their work *Reading Next—A Vision for Action in Middle and High School Literacy: A Report from the Carnegie Corporation of New York*, expanded the discussion of reading instruction from the focus on acquiring reading skills by third grade to "Reading Next, or acquiring reading skills that can serve youth over a lifetime" (p. 3). Five educational researchers along with representatives from the Carnegie Corporation and the Alliance for Excellence in Education created a set of recommendations for how to meet the needs of struggling readers and to establish ways to thrust the field forward. The result was 15 recommendations of effective adolescent programs, including providing (p. 4–5):

- Direct, explicit comprehension instruction;
- Effective instructional principles embedded in content;
- Motivation and self-directed learning;
- Text-based collaborative learning that involves students interacting with one another about a variety of texts;
- Strategic, intense, and individualized tutoring;
- Diverse texts at a variety of reading levels on a variety of topics;
- Intensive writing instruction;
- A technology component that includes technology as a tool for and a topic of literacy instruction;
- Ongoing formative assessment;

- Extended time for literacy instruction in language arts and content-area classes;
- Professional development;
- Ongoing summative assessment of students and programs;
- Interdisciplinary teaching teams that meet regularly and align instruction;
- Leadership from those with a solid understanding of how to teach reading and writing; and
- A comprehensive and coordinated literacy program.

While preventing reading difficulties in children is preferable, the reality is that many students have "fallen through the cracks" by the time they reach middle and high school. While it is evident from the research that we know a great deal about adolescent literacy, there is much more to uncover in the area of the specific nature of the problems of struggling readers and the types of interventions and approaches to best meet their needs.

PREVIOUS READING RESEARCH SYNTHESES

Analyses of reading research have demonstrated the positive effects of using reading interventions with adolescents who struggle with reading (Bryant et al., 2003; Gersten et al., 2001b; Swanson, 1999, 2001; Swanson et al., 1999). Both the content of reading interventions (i.e., decoding, reading fluency, vocabulary development, reading comprehension) and the instructional components of effective interventions (i.e., practice with feedback; advance organization; small, interactive groups; direct questioning and

response; teacher control of task complexity/difficulty) for adolescents with LD have been examined.

Swanson, Hoskyn, and Lee (1999) published a synthesis including 275 studies from 1963 to 1997 that focused on interventions—in academic (e.g., reading, mathematics), cognitive (e.g., problem solving), and behavioral domains (e.g., social skills)—for students with LD, though not specifically for secondary learners. This analysis identified a number of instructional practices that consistently produced significant improvement in learning as compared with standard instructional practices. Major findings include: (1) The magnitude of change is greater in some academic domains than others; (2) not all treatments are equally effective; (3) treatment effects are specific to the academic problems being addressed; (4) children with LD were closer in performance to non-disabled children when the treatment conditions included strategy instructions; (5) variations in the definitions of learning disabilities influence treatment outcomes: and (6) variations in methodology have a significant impact on treatment outcomes.

Other studies based on the 1963–1997 data set followed. In 1999, Swanson explored a reading research synthesis on elementary age students and adolescents with LD in the domains of word recognition and reading comprehension based on 92 studies. Four important findings resulted from this meta-analysis: (1) Effect sizes for measures of comprehension were higher when studies included derivatives of both cognitive and strategy instruction, whereas effect sizes were higher for word recognition when studies included direct instruction; (2) effect sizes related to reading comprehension were more susceptible to methodological variation than studies on word recognition; (3) the

magnitude of effect size for word recognition studies was significantly related to samples defined by cutoff scores (IQ > 85 and reading < 25th percentile), whereas the magnitude of effect size for reading comprehension studies was sensitive to discrepancies between IQ and reading when compared with competing definitional criteria; and (4) instructional components related to word segmentation did not enter significantly into a weighted hierarchical regression analysis for predicting effect size estimates of word recognition beyond an instructional core model, whereas small-group interactive instruction and strategy cueing contributed significant variance beyond a core model to effect size estimates of reading comprehension.

Swanson's 2001 meta-analysis of outcomes related to higher-order processing for adolescents with LD included 58 studies and reported: (1) large effect sizes emerged on measures of metacognition and text understanding; (2) interventions that included instructional components that loaded on factors related to advanced organizers, new content/skills, and extended practice contributed significant variance (approximately 17%) to the magnitude of effect size; (3) the magnitude of effect sizes was significantly higher for studies with samples meeting cutoff criteria scores (IQ > 85 and reading < 25th percentile) than non-cutoff score criteria; and (4) the magnitude of effect size for these cutoff scores was significantly lower for studies with discrepancies between IQ and reading than those without discrepancies.

Finally, emerging from a component and composite analysis on instruction of adolescents with LD from a review of 93 studies, Swanson and Hoskyn (2001) established that: 1) Eight instructional factors (questioning; sequencing and segmentation; explicit skill modeling; organization and explicit practice; small-group

setting; indirect teacher activities; technology; and scaffolding) captured the majority of intervention programs for adolescents with LD, and 2) only the organization/explicit factor contributed significance variance (16%) to effect size. This variance is in the same range of a previous analysis (Swanson & Hoskyn, 1999) across all age groups, which found that approximately 14% of the variance could be accounted for by instructional components.

An explanation of these instructional components as defined by Swanson and Hoskyn (1998) and an example of each is provided in this section. Questioning took place in the form of students and/or teachers asking questions or with teachers and students questioning back and forth (e.g., Simmonds [1992] addressed the effectiveness of teacher acquisition and implementation of question-answer-response strategies (QAR) for improving comprehension skills in students with LD). Sequencing was defined as breaking down the task, and/or sequencing short activities (e.g., Miller and Mercer [1993] validated that teaching sequence was effective for skill acquisition and short-term retention in math instruction). Segmentation was defined as breaking down a targeted skill into smaller units and then synthesizing the parts to a whole (e.g., Bryant [1979] taught word recognition through the introduction of letter sounds and sight words). Explicit skills modeling referred to statements or activities that involved modeling from a teacher in terms of skills (e.g., Bos and Anders [1992] tested an instructional model designed to facilitate text comprehension and content learning). Organization and explicit practice involved repeated practice, sequenced reviews, daily feedback, or weekly reviews (e.g., Meyer [1982] evaluated two procedures for correcting oral reading errors during training in word attack strategies). Small-group setting described instruction in a

small group, and/or verbal interaction occurring in a small group with students and/or teacher (e.g., Hine, Goldman, and Cosden [1990] had students work alone on computers and also as dyads to learn comprehension strategies). Indirect teacher activities included homework, modeling from peers, and parents or peers providing instruction (e.g., Salend and Meddaugh [1985] designed a study to help a 14-year-old with LD overcome use of obscenities by having peers refrain from responding to the student's actions). Technology incorporated the use of computers or other media to facilitate presentation and feedback (e.g., Fiedorowicz [1986] examined the efficacy of computer-assisted training procedures in reading decoding). Scaffolding or controlling the difficulty or processing demands of tasks includes the teacher providing the necessary assistance, a simplified demonstration, sequencing of tasks from easy to more difficult, and/or task analysis (e.g., Rivera and Smith [1998] examined the influence of modeling and direct instruction on the acquisition of long division computational skills by eight adolescents with LD).

THE SYNTHESIS: DATA-BASED AND MULTIVOCAL

RATIONALE. The goal of interventions is to maximize learning outcomes for students. Since the inception of learning disabilities, professionals in the field of special education have been developing, researching, and fine-tuning interventions to enhance learning for students with disabilities. Due to the mandates for students with disabilities to have increased access to the general education curriculum and participate in accountability testing, the field must constantly re-evaluate what is known about teaching and learning and to strive to ensure that intervention practices are appropriate and effective for students. Improvements in reading education in the lower elementary grades are coming too slowly to affect the huge numbers of students beyond third grade who

have been the victims of misguided reading instruction and scarce resources (Moats, 2001). The reading demands on older struggling readers continue to increase, as does the gap between their actual reading ability level and grade level. The 8 million struggling readers in grades 4–12 (NCES, 2003) along with the three thousand 3,000 students who drop out of high school every day (Kamil, 2003) serve as a warning that the time is now to focus efforts on improving adolescent reading interventions. The synthesis is one mode by which to evaluate a collective group of research findings on adolescent struggling readers and disseminate those findings to a wide audience.

Description of Data-based and Multivocal Syntheses

Data-based. An accumulation of reading intervention studies over the past 25 years, some with conflicting results, has primed the field of special education for the necessity of data-based research syntheses to sort out essential conclusions. Research syntheses are a well-recognized technique for providing educators with key cumulative information to allow them to be informed decision makers (Cooper, 1998). Syntheses can also provide a means for the field to better understand and apply research findings to teaching (Gersten & Vaughn, 2001). Concerns about errors and ambiguity in narrative reviews have led to the creation of more rigorous alternatives that have definable and clearly evident standards (Cooper & Reach, 2004). A systematic research synthesis utilizes methodological and statistical techniques designed to incorporate the results of empirical studies. These techniques make explicit and standardize the procedures applied to combine primary research. Meta-analytic statistical methods are applied to summarize the data and to provide a quantitative description of the cumulative research findings and are most appropriate when the question of interest involves specific effects of a policy or

instructional practice. Consequently, according to Cooper and Reach (2004), systematic research synthesis and the statistical integration of study results are conducted with the same structure and rigor as is data analysis in primary research studies.

This literature integrates the work of others by focusing on empirical studies and summarizing this past research by drawing conclusions that address reading intervention outcomes for adolescents with LD, with the intent of directing future research to practice. A current synthesis of the literature is required to answer these data-based questions:

1. What outcomes related to students with LD in reading can be empirically derived from a review pf reading intervention research at the secondary level from 1980 to 2004 from single-subject, single-group, and multigroup design?
    a. How are outcomes influenced by who provides the intervention?
    b. How are outcomes influenced by the type of intervention?
    c. How are outcomes influenced by the intensity or duration of the intervention?
    d. How are outcomes influenced by the grade grouping (i.e., middle school vs. high school)?
    e. How are outcomes influenced by the type of outcome measures (standardized tests vs. researcher-developed measures)?
    f. How are outcomes influenced by design type (e.g., group, single-subject)?
    g. How are outcomes influenced the fidelity of implementation?
    h. Do outcomes vary by ethnicity of the sample?

Multivocal. The research synthesis in this study consists of a multivocal component in order to search for relevant qualitative information from practitioners and stakeholders that may support or refute quantitative findings from the secondary-age

reading intervention synthesis of students with LD and provide insight into how to ensure that effective reading interventions are carried out appropriately, effectively, and with fidelity in middle and high school. A multivocal component allows for determination of the underlying belief systems and biases of professionals who implement reading interventions with adolescents with LD (Ogawa & Malen, 1991), something missing from existing research and relevant to the understanding of reasons that teachers who participate in intervention research often do not continue with interventions once researchers depart from their classrooms or do not carry them out with fidelity (Greenwood & Abbott 2001; Jitendra, 2005).

A multivocal perspective is essential to the intricate work and important problems that arise from a synthesis. Those who employ such a perspective are bound by the logic of the method and the liabilities of the data. Within these constraints, the reporting of the various voices and views on intervention may contribute to a deeper understanding of these complex phenomena, one richer than a review of the literature alone can provide. Ogwana and Malen (1991) recommend incorporating this procedure because it enables the reviewer to uncover, acknowledge, and account for sources of bias and error in the collection of data. These guiding questions asked in a focus group format, according to Ogawa and Malen (1991), allow for the determination of potential underlying belief systems and bias of intervention research, which practitioners may hold. The focus group interview probes aimed at uncovering practitioners' beliefs and subsequent practices related to reading intervention served as research as the second research question in this study. And are as follows:

2. How do professionals who provide instruction for secondary students with LD

perceive secondary reading interventions?

i. With which reading interventions are professionals familiar?
j. What reading interventions do professionals report using?
k. What do professionals report as being barriers/facilitators to implementing reading interventions?
l. What factors influence the selection, rejection, or alteration of a reading intervention?
m. What are the differences between the empirical evidence and professionals' perceptions of effective reading interventions?
n. What differentiates most and least effective secondary reading interventions for students with LD?

Overview of Current Studies

Thirty reading intervention studies on adolescents with LD qualified for inclusion in this study. A brief overview of these studies follows (studies included in the synthesis are listed in Appendix A).

Comprehension. Many adolescents with LD experience difficulty with reading comprehension (Brownell, Mellard, & Deshler, 1993). Lack of or inefficient use of strategies (i.e., higher-order cognitive processing) and failure to recognize a loss of understanding or to utilize effective repair strategies (i.e., metacognition awareness and strategies) distinguish the current view of reading comprehension difficulties (Deshler, Ellis, & Lenz, 1996; Gersten et al., 2001). Thus, reading comprehension interventions have focused on teaching students how to think about what they are reading (Gersten et al., 2001a).

Not surprisingly, with the emphasis in secondary schools on content-area material, the majority of studies included in this synthesis, 16, focused on improving reading comprehension. Nine of these studies employed a treatment/comparison design: Abrahamsen & Shelton (1989); Darch and Gersten (1986); DiCecco and Gleason (2002); Gajria and Salvia (1992); Jitendra, Hoppes, and Xin (2000); Klingner and Vaughn (1996); Snider (1989); Wilder and Williams (2001); and Williams, Brown, Silverstein, & deCani (1994). Six single-subject design studies addressing comprehension, by Clark, Deshler, Schumaker, Alley, and Warner (1984); Freeland et al. (2000); Gardill and Jitendra (1999); Lauderbach and Bender (1995); Swanson, Kozleski, and Stegink (1987); and Vallecorsa and deBettencourt (1997) are included. MacArthur and Haynes (1995) provided the only single-group design comprehension study.

*Fluency***.** Accurate word identification and reading speed are considered the measurable components of oral reading fluency (Archer et al., 2003; Samuels, 1979). The rationale for building reading fluency is explained by the information processing theory in which cognitive attention spent on decoding is drawn away from attention that could be focused on comprehending (LaBerge & Samuels, 1974). Thus, fluent readers can use their cognitive processing to gain meaning from text reading. Although the nature of the link between fluent reading and reading comprehension is not completely understood (Gersten et al., 2001), there is a clear consensus that fluency is critical to skilled reading (National Reading Panel, 2000; Samuels, 1997; Snow et al., 1998). Further, poor reading fluency has been shown to be amenable to remediation (Archer et al., 2003; Chard et al., 2002).

Four studies in this review focused on outcomes related to increasing fluency. The

single-group design study by Mercer, Campbell, Miller, Mercer, and Lane (2001) and single-subject designs by Rose and Sherry (1984), Rosenberg (1986), and Valleley and Shriver (2003) implemented treatments in order to increase reading rate and prosody of students' oral reading.

Vocabulary/Word Study. A reciprocal relationship exists between vocabulary knowledge and reading comprehension (Baumann & Kameenui, 1991; Bos & Anders, 1990; Gersten et al., 2001a; Stanovich, 1986). In other words, knowledge of word meanings aids understanding of text, and broad reading of a variety of texts increases knowledge of vocabulary (Bos & Anders, 1990; Gersten et al., 2001a). Only Bos and Anders (1990) targeted vocabulary in their treatment and comparison design study. This work also addressed comprehension and strategy instruction and for the purposes of this study will be categorized as a multi-component intervention.

Word Recognition and Phonological Processing. Three studies attended to improving adolescents' foundational skills in reading. One treatment/comparison study featured interventions targeting word recognition: Bhat, Griffin, and Sindelar (2003). Kennedy and Backman's (1993) treatment/comparison multi-component study and Thorpe, Lampe, Nash, and Chiang's (1993) single-subject study targeted phonological training to improve word recognition.

Cognitive Processing. According to Palincsar and Brown (1984), memory training for readers with disabilities is important. Swanson et al. (1987) implemented a single-subject pilot study in which researchers used strategy instruction to affect the cognitive processing of participants. This work also addressed comprehension.

Multiple Components. Due to the numerous gaps in reading acquisition for adolescents with LD, several studies utilized multi-component treatments. Eight studies targeted a variety of reading domains in their interventions, including comprehension and fluency ($n = 3$). Four multiple-component treatments included comprehension as a construct (comprehension and vocabulary; comprehension and content knowledge; comprehension and word study; word identification, fluency, and comprehension). One study involved phonological awareness and phonics.

The treatment/comparison studies falling into this category include: Bos, Anders, Filip, and Jaffe (1989); Bos and Anders (1990); Fuchs, Fuchs, and Kazdan (1999); Hasselbring and Goin (2004); Kennedy and Backman (1993); and Mastropieri et al. (2001). Multi-component single-group studies were conducted by Bryant et al. (2000) and Farmer, Klein, and Bryson (1992).

SUMMARY

The ultimate goal is for the information in this synthesis to be utilized by secondary classroom reading teachers to affect their instructional decisions, practices, and choice of materials. One consideration when designing a reading intervention for struggling readers is what instructional strategies are needed to be successful readers (Bryant et al., 2000). Secondary school reading requirements emphasize new vocabulary, connecting and summarizing ideas, and organizing and remembering information (Readance, Bean, & Baldwin, 1998). Instructional practices, however, are not always carried out or carried out effectively for struggling readers (Vaughn & Klingner, 1998; Baker & Zigmond, 1995). Bridging the gap between research and practice demands that educational innovations be based on sound evidence for effectiveness and that individual

research be translated into better reading instruction. This has not been the case, according to Boardman, Arguelles, Vaughn, Hughes, and Klingner (2005), who report that, "educational decisions have been made at the whim of policymakers, administrators, parents, and school board officials who have not considered research as a tool for decision making" (p. 168). Decisions about policy, teaching methods, and reading programs for adolescents with LD who struggle in reading are best supported by findings from primary research that withstand inspection with systematic synthesis procedures. The bright side in all this is that it is possible to enhance the reading achievement of adolescents with LD while at the same time refining and extending the knowledge base of the field. This synthesis hopefully provides a balanced vision for the possibilities that lay ahead in both reading intervention research and practice.

KEY CONCEPTS

Adolescent. Adolescent is defined as a student in grades 6–12 falling within the age range of 11–21.

Intervention. Intervention or treatment is defined as the direct manipulation by the researcher of psychological (e.g., metacognitive awareness) and/or educational variables (e.g., teaching, instruction, materials) for the purpose of affecting learning efficiency (e.g., rate, time), learning accuracy (e.g., percent correct), learning understanding (e.g., amount of verbal elaboration on a concept), or a combination of all three (Swanson in Gersten, Schiller & Vaughn, 2000). According to Torgesen (2004), the role of intervention research is to examine the teaching methods that are most effective in helping students acquire the skills, knowledge, and attitudes required to become a good

reader. Intervention research focuses on students who are at risk for reading failure or who are struggling with reading.

Learning Disability. Unlike Swanson's (1999, 2001) work, the explicit statement that study participants be in the normal intelligence range was not a factor for inclusion in this study. This fundamental difference in criteria standards is required since the field of special education's examination of student responsiveness to intervention (RTI) has been suggested as a possible alternative means to the IQ-achievement discrepancy for identifying students with learning disabilities (LD). RTI may reduce dependence on the traditional approach of identification, which has been criticized for lack of validity (Fletcher, Francis, Rourke, Shaywitz, & Shaywitz, 1992; Siegel, 1992; Stuebing, Fletcher, DeDoux, Lyon, & Shaywitz, 2002). In this study, participants were considered to have LD if authors stated students had LD, reading disabilities, or dyslexia and the authors reported that participants performed poorly in reading as indicated by teachers or psychometric tests.

Multivocal. The term *multivocal* refers to the diverse views or voices represented. This research will embody those voices in the form of a focus group interview. Transcripts of the themes from this group interview will be coded and included in the findings.

Meta-analysis. The application of statistical procedures to collections of empirical findings from individual studies for the purpose of integrating, synthesizing, and making sense of them is known as a meta-analysis, or analysis of analyses. This connotes a rigorous alternative to the casual, narrative discussions that make up much of the available research. The use of effect size statistics allows for objective comparisons;

conversely, meta-analyses are limited by the availability and quality of research on a particular question or topic.

Social Validity. Social validity is a subjective measurement system used to assess the social significance of intervention goals, the social appropriateness of intervention procedures, and the social importance of intervention outcomes or effects (Wolf, 1978). This concept, borrowed from applied behavioral analysis, emphasizes the influence of consumers' perceptions of an intervention and on its use and potential outcome. It is critically important for any effort to influence the behaviors of individuals, groups, or communities (Geller, 1991). In this study, educators are classified as secondary consumers of reading interventions. Although the ultimate consumer of a reading intervention is a struggling reader, it is important to look at educators' views on these interventions and research related to them to better understand how and why instructional interventions are adopted and sustained. The use of social validation here attempts to quantify whether meaningful changes have been achieved through intervention practices.

Synthesis. Synthesis is the re-analysis of data for the purpose answering the original research question with better statistical techniques, or in the case of this research, answering new questions with previously collected data.

CHAPTER III: Method

The pairing of a data-based synthesis of extant data with a multivocal component were used to address the research questions. This chapter reviews the methods used to conduct the synthesis. The data-based synthesis was used to answer research question one on empirically derived outcomes of secondary reading intervention research. It integrates the work of others by focusing on empirical studies, summarizing this past research, and drawing overall conclusions that address reading intervention outcomes for adolescents with LD. The intent of this data-based synthesis is to direct future research to practice, as well as provide an updated synthesis that reviews research conducted in the past 6 years since the Swanson et al. (1999) synthesis. A multivocal component was added to answer research question two on the reported knowledge, perceptions, and practices professionals have concerning reading interventions for adolescents with LD. This involved the integration of practitioner and stakeholder insights into the empirical knowledge base, something essential for the social validation of reading intervention research practices by secondary consumers, which in this study are the interventionists, or reading educators.

OPERATIONAL DEFINITIONS

Data-based synthesis. This systematic research synthesis utilizes methodological and statistical techniques designed to incorporate the results of empirical studies. These techniques make explicit and standardize the procedures applied to combine primary research. Meta-analytic statistical methods were applied to summarize the data and provide a quantitative description of the cumulative research findings.

Multivocal component. Multivocal literature gathered from stakeholders in the field of secondary reading intervention in the form of a focus group interview, or "a discussion among selected individuals about specific topics relevant to the situation at hand (Beck, Trombetta, & Share, 1986, p. 73)," was used to synthesize this valuable source of information and insight collected from this data set. The term "multivocal" refers to the diverse views or voices represented in the focus group. "Historians, sociologists, anthropologists, and others who adopt an interpretative perspective have long recognized that the words of people, whether transmitted through verbal or written mediums, are an important source of data (Ogawa & Malon, 1991, p. 267). According to Vaughn, Schumm, and Sinagub (1996), focus groups are more organized and formal than small-group interviews. Additionally, focus groups generate findings that result from analysis of the transcripts from the interviews. The analysis of these data can assist in fine-tuning research designs and can lead to suggestions from those working with or invested in the topic for future research.

Data Collection for Data-based Synthesis

For this synthesis, a comprehensive search was conducted through a three-step process. ERIC and PsycINFO were first searched to locate studies published between 1980 and August 2004. The rationale for the timeframe used in this study was based on that fact that Swanson et al. (1999) conducted their meta-analysis by scanning studies from 1963 to 1997. Twenty-plus years was selected as the time frame to review literature for two reasons: (a) this is a comprehensive frame of time that represents when students with LD were identified and provided interventions and research would be available, and (b) this seems a reasonable time period to augment the areas unaddressed by Swanson

and to include the most current intervention research conducted after his search. Descriptors or root forms of them were used in various combinations to capture the greatest possible numbers of articles. The two searches were then merged to eliminate duplicate citations.

The following key terms were used to search PyscINFO:

Adolescent: struggle reading, dyslex*, read*, comprehen*, vocabulary, fluen*, word, decod*, English, language arts

Middle School: struggle reader, dyslex*, read*, comprehen*, vocabulary, fluen*, word, decod*, English, language arts

High School: struggle reader, dyslex*, read*, comprehen*, vocabulary, fluen*, word, decod*, English, language arts

Junior High School: struggle reader, dyslex*, read*, comprehen*, vocabulary, fluen*, word, decod*, English, language arts

These key terms were used to search ERIC:

Secondary: struggle reader, dyslex*, read*, comprehen*, vocabulary, fluen*, word, decod*, English, language arts

Adolescent: struggle reader, dyslex*, read*, comprehen*, vocabulary, fluen*, word, decod*, English, language arts

Middle School: struggle reader, dyslex*, read*, comprehen*, vocabulary, fluen*, word, decod*, English, language arts

High School: struggle reader, dyslex*, read*, comprehen*, vocabulary, fluen*, word, decod*, English, language arts

Junior High School: struggle reader, dyslex*, read*, comprehen*, vocabulary, fluen*, word, decod*, English, language arts

No ERIC documents or dissertation/theses were accepted due to the difficulty with obtaining them (e.g., time and expense that are beyond the scope of the time frame for this dissertation). To provide a sense of the amount of data in existence, 5,542 abstracts were initially obtained. Thirty of those abstracts from 2000 to 2004 were randomly selected and rated as "acceptable," "not acceptable," or "maybe" for acceptance into this study, based on the inclusion criteria by a team of trained graduate students including myself involved in a larger synthesis on struggling adolescent readers. The team participated in training conducted by an expert in the field over a 2-hour session with built-in guided practice before individuals were actually permitted independently to rate abstracts. Results from the abstract-rating activity were used to refine search criteria for this study. The procedure was followed two more times with 50 more, then 100 more abstracts to ensure reliability. Inter-rater agreement for acceptance or rejection was calculated by dividing the number of agreements by the number of agreements plus disagreements and was computed at 95%.

In addition to the data-based search, a hand search was conducted in 11 major journals from 1998 through 2004. Journals used in this search included *Exceptional Children, Journal of Educational Psychology, Remedial and Special Education, Journal of Learning Disabilities, Journal of Special Education, Learning Disability Quarterly, Learning Disabilities Research and Practice, Reading Research Quarterly, Remedial and Special Education, Scientific Studies of Reading, and Annals of Dyslexia*. Selection of these journals was based upon the previous synthesis work of leaders in the field such as

Swanson and Vaughn. Finally, the reference section of Swanson et al. (1999) was reviewed to see whether it contained any unaccounted for references. Studies fitting all criteria for this work were then retrieved and included.

DATA-BASED STUDY ELIGIBILITY

The compilation of relevant literature was narrowed to treatment-comparison, single-subject, and single-group design in which an independent variable was manipulated to affect reading. This procedure initially narrowed the search to 48 data-based articles with the potential for inclusion in the quantitative synthesis review. Each study was evaluated on the criteria below. A thorough evaluation resulted in the inclusion of 30 of those studies (identified in Appendix A, with those that did not qualify listed in Appendix B). The criteria for selecting the studies for the current synthesis were as follows:

1. *Participants in 6th–12th grade*. Participating students must have been in grades 6–12 (ages 11–21), with a mean age equivalent of at least 11 years old. This grade range was accepted because it represented the most common grades describing secondary students.
2. *Identified disability*. At least 50% of the study sample consisted of students identified with a learning disability or reading disability (RD), including dyslexia. Studies were also included if disaggregated data for students with LD was provided, regardless of the number of students in the study. Unlike Swanson et al. (1999), I did not use the discrepancy definition of LD provided in their meta-analysis that stipulated that students had to possess a stated IQ of

85 or above. In general, students must have been reported as having LD, RD, or dyslexia and also have been reported as performing poorly in the domain of reading.

3. *Design.* Research designs included are treatment-comparison, single-group, and single-subject.
4. *Independent variables*. Intervention consisted primarily of any type of reading intervention that occurred (including word study, fluency, vocabulary, comprehension, or a combination of these), was of variable length, and was provided by any type of interventionist (e.g., teacher, parent, volunteer, teacher aide). The treatment group must have received intervention that was over and above what they received during the course of their typical school day. This study focused on the participant's treatment rather than a description of the child's current placement followed by an evaluation.
5. *Dependent variables*. Data for students with LD were disaggregated within the study; data included a measure of reading or reading-related outcomes (all types of outcome measures accepted—e.g., standardized measures, researcher-developed, or intervention-specific).
6. *Quantitative measures*. Each study reported quantitative treatment outcomes with no severe methodological flaws (e.g., results of control groups not reported, incorrect degrees of freedom), which were used to calculate effect sizes.
7. *Conditions*. Studies involved at least one between-instruction comparison condition (i.e., control condition) or within-design control condition (e.g.,

repeated measures design or baseline). Studies that included only a pre-post test without an instructional control of participants were excluded.

8. The language of instruction was English.
9. *Meta-analysis*. To summarize the effect of reading interventions on students' comprehension, a meta-analysis was conducted, given five or more related articles that were true experimental designs with common constructs. According to Kavale (2001, p. 179–180), "as a statistical process, meta-analysis has several advantages: 1) quantitative-statistical methods are used for organizing and extracting information from large databases; 2) study selection bias is eliminated; 3) study findings are transformed to commensurable expressions of effect magnitude; 4) interactions are detected and their covariance studied; and 5) general conclusions are sought."

DATA-BASED DATA ANALYSIS PLAN

Coding Procedures. Extensive coding procedures were used to organize key information from each data-based study, including age and background of participants, research design, intervention variables, and findings. Participant information was coded using five forced-choice items (socioeconomic status, disability type, disability criteria, gender, ethnicity) and two-open-ended items (age as described in text and disability type as described in the text). Likewise, design information was gathered using a combination of forced choice (e.g., research design, assignment, fidelity of implementation) and open-ended items (selection criteria). The coding form is provided in Appendix C. Intervention comparison information was coded using 10 open items (e.g., site of intervention,

person(s) implementing intervention, duration of intervention). A description of the treatment-comparison group was also recorded.

Information of causal inference was gathered using 6 items for true experimental designs (e.g., sample sizes, attrition) and 11 items for quasi-experimental designs (e.g., equating procedures, sample size, attrition). The precision of outcomes for effect size estimation and statistical reporting was coded using a series of three forced-choice, yes/no questions to determine whether statistical tests were accurately reported.

I relied on code sheets developed for previous intervention syntheses (Kim, Vaughn, Wanzek, & Wei, 2004; Vaughn, Kim, Sloan, Hughes, Elbaum, & Sridhar 2003). Additional revisions were made to assure that the code sheet addressed fundamentals specified in the *What Works Clearinghouse Design and Implementation Assessment Device* (Institute of Education Services, 2003), a document used to evaluate the quality of studies.

Inter-rater reliability was established for accuracy by having the researcher and external expert double-code articles and calculate the percent of agreement (i.e., agreements divided by agreements and disagreements) on one-third of the articles randomly selected for inclusion in this study. An inter-rater reliability of 95% was established. I convened with the expert to resolve ambiguities or disagreements and to reach decisions by consensus on areas where there was disagreement. The studies are summarized in table form. Table 1 provides a summary of intervention characteristics. Table 2 includes information on outcomes by study design and intervention. Effect sizes and *p* values are presented when appropriate data were available.

Effect size calculation. Effect sizes were calculated for studies that provided adequate statistical information. For studies lacking necessary data to compute effect sizes, data were summarized using findings from statistical analyses or descriptive statistics. For treatment-comparison design studies, the effect size, *d*, was calculated as the difference between the mean posttest score of the participants in the intervention condition minus the mean posttest score of the comparison group divided by the pooled standard deviation. For studies in the synthesis that utilized a treatment-comparison design, effect sizes were interpreted as $d = 0.20$ as small, $d = 0.50$ as medium, and $d = 0.80$ as a large effect (Cohen, 1988). When means or standard deviations are omitted from studies that met inclusion criteria, then effect sizes were estimated from *t, F*, *chi square*, or exact *p* values.

A standardized mean-change measure was used to calculate effect sizes for single-group designs (Becker, 1988; Cooper, 1998). Single-subject-design studies in which there was no separate control group (subjects serve as their own controls) were separated from group-design studies for analysis. Outcomes for these studies were calculated as the percent of non-overlapping data (*PND*; Scruggs, Mastropieri, & Castro, 1987). *PND* is calculated as the percentage of data points during the treatment phase that are higher than the highest point from the baseline phase. This was selected because it offers a more parsimonious means of reporting outcomes for single-subject studies and provides a common criteria for comparing treatment impacts.

DATA COLLECTION FOR MULTIVOCAL SYNTHESIS

Focus group. A focus group interview is an interview with a small group of people, usually 6 to 10 people with similar backgrounds, who provide a variety of

perspectives from a structured and facilitated discussion. The object is to obtain high-quality data in a social context where people can consider their own views in the context of the views of others (Patton, 2002). **"**In the focus group interview, the interactions between the moderator and respondents and the interactions between the respondents themselves are recognized as having the potential to add depth and dimension to knowledge gained (Vaughn et al., 1996, p. 16)."

During the fall of 2004, four focus group pilot interviews were conducted with classroom teachers, literacy coaches, and others responsible for reading intervention, and these interviews served as the first phase of my initiation of focus groups. The purpose was to refine the criteria for selection of participants' and interview questions/topics. Information gathered and reviewed from the pilot groups aided my participant selection criteria. Data analyzed from these sessions indicated that first-year teachers or those not fully certified did not have enough experience to meaningfully contribute to the dialogue on intervention practices. Often, they had not yet had training on interventions employed at their schools or were consumed with other issues (e.g., behavior, school procedures and policies) other than reading intervention. The inclusion of general educators stemmed from the participants who indicated that their schools provided all specialized instruction and services within general education, usually by the general educator; a special educator at these schools served in a consultant role, not involved in daily classroom instruction or intervention. Further, several participants reported that general educators were providing reading intervention to students with and without LD in after-school tutorial settings or elective classes. Criteria for participant selection and interview probes used in this study were based on the preliminary results of those pilot focus group interviews.

Initiating a focus group interview. This addressed the second component of my study: to (1) explore the experiences that participants have with secondary reading interventions; and (2) to inform further research so as to increase reading achievement for adolescent struggling readers with LD. The goal of conducting such interviews was to elicit a greater, more in-depth understanding of perceptions, beliefs, attitudes, practices, and experiences from multiple points of view and to document the content from which those understandings were derived (Vaughn et al., 1996). The interview protocol used to guide the focus group interview is located in Appendix D.

INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL

This study was submitted to the Institutional Review Board for consent. Board approval was obtained before the study commenced.

Consent. The consent form (Appendix E) was explained and given to each participant prior to the commencement of our focus group. I explained that participants were under no obligation to join the group and were free to withdraw participation at any time.

SETTING AND PARTICIPANTS

Purposeful sampling (Patton, 2002) aimed at identifying a sample that can offer insight about a phenomenon, not empirical generalization, was used for participant selection. A large urban district was selected from which to conduct a focus group comprising middle school and high school educators. As the nation strives to raise achievement, it is necessary to pay close attention to students enrolled in urban schools, according to Casserly (2005) in his report on how major city school systems are performing on state assessments. Urban educators face unique problems associated with

the challenges of educating inner city children and adolescents in increasingly overloaded and underfunded schools. Issues of poverty, cultural and linguistic diversity, single-family households, and race are intertwined with issues of poor student achievement (Carter, 2001)..

The district selected to serve as a pool from which to draw focus group participants for my study was targeted because it encompasses all the challenges of a typical metropolitan district (filling teaching positions, retaining and recruiting fully credentialed faculty, preventing student dropout, and increasing passing rates on the state's accountability test in reading). In this case, purposeful sampling was appropriate and necessary to investigate representative views and how widely and strongly such views are held (Basch, 1987).

Department chairs at all the middle and high schools were contacted, informed of my study and its purpose, and asked to assist with identifying potential participants by making recommendations of candidates meeting the criteria. Three chairs (one at a high school and two in middle schools) responded to my request and provided contact information for 17 candidates. I attempted to contact each by phone. Ten of the 16 that I contacted expressed interest; however, due to school and family commitments, three candidates could not find time in their schedules to participate. All 10 indicated that they met my criteria and were willing to partake in the group interview. In total, seven people agreed to take part. The seventh candidate had a family emergency and could not attend, leaving a total of six focus group interview participants.

My aim was that the focus group would consist of five to eight persons, small enough for a stimulating discussion and to allow participants to share their point of view

(Vaughn, et al., 1996). Two focus group interviews, one consisting of two participants and four in another were actually conducted due to scheduling issues with participants. As the facilitator, I greeted participants on arrival, offered them refreshments, and introduced myself in order to set a relaxed and comfortable tone. Interviewees began by filling out information sheets (Appendix F). I then reviewed the consent form and had participants review, then sign the form. Participants were informed that their responses were anonymous and that audiotapes of the interview would be secured in a locked file and destroyed after completion of the study. Each interview session was taped and transcribed immediately after each session. Transcriptions were e-mailed or mailed, depending on the individual's preference, to participants for review within a week of the focus group. At the completion of the group interview, participants received a $50 stipend, which served as an incentive to participate in the initial focus group and in the review of the transcriptions of the interviews.

Setting. The urban district from which focus group participants were selected is in a metropolitan central Texas area with a population of 790,000. This district serves 80,000 students on 107 campuses (12 high schools and 17 middle schools for a combined population of 34,232 secondary students). It includes children from all standard economic levels and widely varying backgrounds. Fifty-two percent of the students are Hispanic, 31 percent are Anglo, 14 percent are African American, and 3 percent are Asian. More than half the students come from low-income families, and 20 percent enter as English language learners. According to district 2005 data, 12.4% of the student population is served by special education (5,138 of the total school population with LD).

The language and literacy mission statement of this district is that students will acquire the literacy and communication skills necessary to be productive, successful, and fulfilled citizens. English-language arts is a required course for sixth through eighth graders in middle school and is taught for between 45 minutes and 90 minutes (an individual campus decision). Only sixth graders are required to take a reading elective that addresses reading strategies and study skills. For seventh and eighth graders identified as "struggling readers," reading is offered as an elective on a semester basis. A variety of English course options are offered at the high school level to meet the needs of students and varying graduation options. High school English I-IV is offered, as is Applied English I-IV and Basic English I-IV. Reading is an elective course offered as Reading I-III and Reading Application and Study Skills. The locally developed Language Arts course is an available option for students with disabilities at both middle and high school; however, focus group participants acknowledged that adolescents with LD are typically educated in general education or remedial classes. The length of high school courses is a school-level decision. While some of the participants reported English-language arts classes running anywhere from 50 to 90 minutes, reading classes were 45 to 50 minutes in duration.

Participants. Focus group interview participants were selected based on the following participant criteria: 1) at least three years' experience in teaching reading and providing reading intervention in the secondary classroom; 2) certification in reading and/or English-language arts/reading or special education; 3) current employment in a secondary school involving reading instruction and/or reading intervention (as an interventionist or coach); and 4) a willingness to participate.

Six educators, all employed at schools designated as "low-performing" by the Texas Education Agency, took part in the focus group interviews and review of transcripts. While the majority were classroom teachers (n = 4), two instructional specialists who served as reading coaches, one at a high school campus, the other a middle school, also participated. Participant characteristics (years of experience, type of certification, current assignment, level of education, age, gender, and ethnicity) are presented in Table 3.On average, the participants (all female) had 10 years of experience, ranging from 3 to 19 years, and ranged in age from 24 to 56. Three respondents worked in middle schools, while three others were employed in high schools. All were fully certified in Texas, some in more than one area (generic special education, secondary reading [6–12], English as a second language, English-language arts [4–8 or 8–12], elementary generalist, and master reading teacher). The participants utilized traditional or university paths to certification (n = 3) as well as alternative options (n = 3). The various classroom settings represented included a reading elective (n = 2), inclusion (n = 1), and a general education English-language arts course (n =1). All the educators included in this study either directly taught adolescents with LD or directly affected them through their instructional decisions and support to classroom teachers. Table 4 shows the professional development related to reading, that participants reported attending over the last 2 years. Providers of reading intervention-related professional development, as indicated by participants, included the employing school district (n =7); publisher or vendor of commercially available reading materials and intervention programs (n = 4); the regional education service center (n = 2); neighboring university (n = 2), and English department (n = 1).

Scheduling and Location

Once participants were identified for possible inclusion in the focus group interview, I spoke with each one individually and self-identified myself in my role of the researcher as well as explained my planned research project and need for participants. Times were then established for the interviews based on participants' availability. The first session was scheduled after school on a Monday to accommodate the schedules of three of those willing to participate. Two attended and met for approximately 1.5 hours. The second session was set up on a federally observed holiday at the request of attendees. This group of four met for approximately 2 hours. Both sessions were held in a conference room at a large state university in the heart of downtown.

Data Collection and Procedures

Each participant filled out an information sheet intended for self-disclosure of demographics and professional development attended. Once forms were collected, I turned on the tape recorder and began the interview. Following the interview protocol, I introduced a topic, asked questions, and elicited responses from individuals, taking notes of body language, tone, and other points of interest. After each of my topics was discussed, I summarized participants' responses and asked for feedback, clarification, or additional input. One of the requirements for inclusion in the group was that participants were willing to review transcripts. This was explained to all participants, and I asked them to indicate how they wanted to receive those transcripts (e-mail or mail). Once transcriptions were completed, in order to increase trustworthiness, each participant was sent the transcript and given a week to review and to provide feedback, make corrections, or discuss a topic further. The researcher also reviewed each completed transcript and

compared it with her notes from each session. Member checks were performed, and all participants responded either via e-mail or phone that they had reviewed the transcripts. No additions, edits, or additional feedback was offered. The first session was conducted, transcribed and sent for a member check to each participant before the second session was conducted. These same procedures were followed with the second focus group.

MULTIVOCAL DATA ANALYSIS PLAN

Two focus group interviews were audiotaped, transcribed, and then analyzed using primary readings, open coding (i.e., theme identification), and axial coding (Strauss & Corbin, 1990). This qualitative data gathering method focused on participants' verbatim responses (Patton, 1990). During primary readings, the researcher read the entire set of interviews several times and made notes about repetitive ideas and other critical details. During open coding, the researcher identified salient themes in the data and categorized the data around those themes. During axial coding, the researcher then refined and narrowed the themes by relating them to subcategories and recategorizing that data around the refined/narrow themes. After completing the above steps independently, the researcher met with a fellow graduate student, also trained in this data analysis technique, who volunteered to serve as an external auditor of the multivocal data. This person independently followed the same steps the researcher used to analyze data, then met with the researcher to negotiate categories (Vaughn, et al., 1996). The inclusion of this external auditor served as a reliability check of the coding of data.

The following steps as outlined by Vaughn et al. (1996) were used to analyze data from focus groups: 1) identify the big ideas; 2) unitize the data or identify the units that will become the basis for defining categories; 3) categorize the units or bring together

information that is related; 4) negotiate categories or work together with the participants to negotiate and compare categories; and 5) identify themes and use of theory.

To illustrate how ideas and issues emerge and are categorized and negotiated, an example is provided. First, a big idea was gleaned from an initial review of the multivocal data. One big idea revealed that participants appear "overwhelmed" at the challenges of providing reading interventions. The interview transcripts detail issues involving lack of materials, professional development, time, and support, all issues that I classified as contributors to feelings of being overwhelmed. According to respondents, these issues inhibit their use of effective reading interventions. After further analysis, the researcher characterized these issues as "barriers." Barriers were then analyzed to identify whether participants reported these barriers to be significant enough that the participants must "alter" the reading intervention or "reject" it altogether. Categories, once identified, were then negotiated. While administrators were named as "barriers," my analysis disclosed that they are also considered "facilitators". An administrator, then, is considered to be a barrier if that administrator is not knowledgeable about the reading process or supportive of teachers' efforts to provide reading intervention for those that need it. Conversely, administrators may fit into the "facilitator" category if they are deemed to provide adequate materials, planning time, and are supportive of research-based findings (small group instruction). Finally, themes and theories are identified and negotiated. In the case of the big idea, I began by isolating the unit "feelings of being overwhelmed". Reoccurring statements about insufficient training, materials, and disregard for program guidelines confirmed the legitimacy of reports of being "overwhelmed".

RESEARCHER AS INSTRUMENT

I began to explore this topic because of very selfish reasons. Having served as both a middle school and high school special education and general education teacher, as well as having served as a literacy specialist or coach in a middle school, I saw value in identifying research-based reading intervention that can be implemented in practice with those responsible for implementing those practices with adolescents with LD. From recent experience as a researcher in the field implementing research-based reading interventions, there seemed a disconnect between what occurred in classrooms while I was present and what went on (or to be more exact, what did not occur) once I packed up and left. This piqued my curiosity. Research-based reading interventions, along with support for teachers applying them, are increasingly available (reading coaches, professional development opportunities), yet these research-based practices do not seem to last long past initial implementation. My gut told me there was more to this story than teachers' dissatisfaction with particular interventions or lack of desire to help struggling adolescent readers with LD. My hope is to better understand and validate the experiences of educational professionals who strive daily to provide appropriate interventions for middle school and high school students who were left behind. In order to be able to take some sort of action to propel researchers and practitioners forward into the design and implementation of successful and meaningful reading interventions for struggling adolescent readers who are also LD, the research-to-practice gap must addressed at the secondary level. Thus, my quest began.

TRUSTWORTHINESS AND CREDIBILITY

Unlike quantitative research, which reports on validity and reliability, qualitative

researchers have the task of ensuring that their collection of data is credible and trustworthy (Brantlinger, Jimenez, Klingner, Pugach, & Richarson, 2005). Use of member checks, following appropriate data-collection procedures, researcher reflexivity, use of an external auditor, and the triangulation of data establishes my trustworthiness and credibility and are considered evidence of quality indicators in qualitative research (Brantlinger et al., 2005). Including participants in the review of the summary statements during the initial interviews and then again in reviewing the transcripts served as my member checks. Data-collection procedures as outlined by Vaughn et al. (1996) were explicitly followed, beginning with identifying big ideas and then categorizing units and negotiating themes. As the researcher, I revealed my own beliefs and experiences with reading intervention research and grounded my qualitative research on the hunch that more could be learned about effective adolescent reading intervention research practices from practitioners than could be learned from a review of the empirical data alone. An external auditor was used to independently review and confirm identified themes. Triangulation of multiple data sources was incorporated (empirical data, focus group interviews, and information sheets completed by focus group participants were collected and compared).

Pairing Findings from the Data-based and Multivocal Syntheses

Following is a description of how I paired the various sources (data-based and multivocal) to help clarify my understanding of effective reading intervention practices for adolescents with LD. The ultimate goal, and the objective of the current level of analysis, was to use the multivocal data to confirm underlying themes from the data-based synthesis. I used data from the focus groups to assess what was and was not

effective for teachers and their students with LD and to specify areas in which reading intervention seemed particularly weak. I listened for instances where educators talked about practices that had been implemented but were perceived as ineffective. Finally, I listened for areas about which the focus groups seemed conflicted or confused. Interviews with professional educators and stakeholders' findings were enhanced by comparing them to the synthesis of the 30 intervention studies, which were analyzed for effective treatment outcomes. Additionally, demographic/professional development information from participants was used to compare to the information gathered through the focus group interviews. For example, during the focus groups, participants indicated that they receive the majority of their information on research-based practices from their district. Participants' self-reporting of professional development attended confirmed that districts did in fact provide the majority of training that they attended.

An important feature of a multivocal synthesis is its ability to make comparisons within and among data sources (data-based synthesis findings, interviews, information sheets). In analyzing the various data, I used an interactive process of forming tentative interpretations (e.g., educators are more concerned with student outcomes than with the specific intervention practices), rereading and re-examining features of the studies (e.g., middle school or high school implementation, study design), posing new interpretations (e.g., interventions as a replacement for special education), and looking for corroboration across data sources (e.g., empirical data, qualitative ideas, categories, and themes). Discussion and conclusions are presented in Chapter VI, along with a discussion about implications for conducting future research and improving current practice.

CHAPTER IV: Data-based Synthesis Findings

This synthesis includes an array of study designs and interventions. Several analyses were conducted to explore the data in detail. First, study features were synthesized (e.g., sample size and design) to highlight similarities, differences, and prominent elements across the body of work. Secondly, meta-analyses were conducted on two subsets of treatment-comparison design studies to determine the overall effect of reading interventions on students' reading comprehension. In addition to an overall point estimate of reading intervention effects, I report effects on comprehension by measurement and intervention type. Finally, I synthesized trends and results by intervention across all studies.

STUDY FEATURES

Thirty intervention studies reported in journal articles met my criteria for inclusion in this synthesis. A range of journals was represented (as seen from Appendix A) and fairly evenly distributed across the years of interests (9 from 1980s, 11 from 1990s, 10 from 2000s). Each study's design and characteristics are described in Table 2. Eighteen studies (listed in Appendix B) did not meet criteria for this study. Primarily, studies were excluded (n = 10) due to inclusion of participants below age and or/grade criteria with no disaggregating of data (Brailsford, Snart, & Das, 1984; Chan, 1991; Chan & Cole, 1986; Darch & Kameenui, 1987; Fiedorwicz, 1996; Gillon & Dodd, 1997; Johnson, Graham, & Harris, 1997; Lalli & Shapiro, 1990; Lovett & Steinbach, 1997; and White & Pflaum, 1981). Two studies were disqualified because effect sizes could not be calculated from data provided (Simpson, 1992; Wong & Jones, 1982). Two others did

not meet inclusion criteria because data was not disaggregated for students with LD (Allinder, Dunse, Brunken, & Obermiller-Krolikowski, 2001; Dimino, Gersten, Carnine, & Blake, 1990). Three studies did not meet the definition of an intervention study on secondary students (Daly & Martens, 1994; Lynch, Fawcett, & Nicholson, 2000; Stump, Lovitt, Fister, Kemp, Moore, & Schroeder, 1992). Finally, one study (Goldstein & Obrzut, 2001) was excluded because it did not provide an academic intervention, but rather the treatment involved increasing eye movement to improve reading outcomes. Provided in the following sections, I summarized information on study features including sample characteristics, design, duration, and fidelity of the intervention.

Sample characteristics. The 30 studies included 986 participants. Sample size ranged from 2 to 125, with an average of 52 participants for treatment-comparison studies. Only 10 of the studies reported on study participants' ethnicity however, data were not disaggregated across ethnicity. Middle school students were the majority targeted ($n = 20$). Six studies focused on high school age students while 4 studies included both middle and high school age students. All studies included students with identified learning or reading disabilities. In addition to students with LD, two studies also included students with mild mental retardation (Fuchs et. al., 1999; Mastropieri et al. 2001). Participants in Klinger and Vaughn's (1996) study were identified as English as a second language (ESL) learners with LD. Jitendra, Hoppes, and Ping's (2000) population was labeled as having behavior disorders in addition to LD. Study characteristics are contained in Table 1, while descriptive characteristics are in Table 5.

Study design. The corpus of studies included 16 treatment-comparison, 10 single-subject and 4 single-group design studies. The distribution of intervention type by design

is presented in Table 6. The number of treatment-comparison studies with specific design elements that are characteristic of high-quality studies (IE S, 2003, Raudenbush, 2005, Shadish, 2002) is specified in Table 7. The elements indicated in Table 7 were chosen because they strengthen the validity of the study conclusions when appropriately employed. None of the studies in the synthesis reported utilizing all three conditions—that is, randomly assigning participants to a condition, reporting implementation of fidelity, and measuring student outcomes using standardized measures.

Intervention design and implementation. The number of intervention sessions ranged from 2 to 40. For 14 studies, the number of sessions was not reported and could not be determined from information provided. Frequency and length of sessions was inconsistently reported, but included in Table 1 when available. For studies that reported the length and number of sessions (n = 16), participants were engaged in an average of 13 hours of intervention. For treatment-comparison design studies, the average number of intervention hours provided was also 13 (n = 8).

Eleven studies used intervention to improve content area reading with expository text, the focus being on science text (n = 3), social studies text (n = 4), or both (n = 3). One study reported using expository text, but the content area was not reported. Nineteen of the studies incorporated controlled text. For three studies, the type of text used was not discernable and, as would be expected, the word-level studies (n = 3) did not include connected text. One study used both controlled and non-controlled text.

The majority of the studies (n = 24) were conducted in special education settings (resource, self-contained classrooms). One study was carried out in a general education

content area classroom, plus an advisory period. One other took place with students in a general education inclusive setting, although students receiving the intervention were pulled out for intervention into a computer lab. Three interventions were conducted in after-school settings (two in a residential center, one in a tutoring center). One study did not report where the intervention took place and it could not be determined from the description provided.

Teachers implemented just slightly more interventions (n = 17) than researchers (n = 11). One intervention was implemented by both, while the person implementing the intervention could not be determined in two studies.

META-ANALYSES

To summarize the effect of reading interventions on the students' comprehension, I conducted a meta-analysis of two study subsets (subsets consisted of like intervention type studies). One on comprehension (k = 8) included the following studies: Abrahamsen & Shelton, 1989; Darch & Gersten, 1986; DiCecco & Gleason, 2002; Gajria &Salvia, 1992; Jitenda et al., 2000; Snider, 1989; Wilder & Williams, 2001; and Williams et al., 1994). The multi-component subset (k = 5) included: Bos et al., 1989; Bos & Anders, 1990; Fuchs et al., 1999; Hasselbring & Goin, 2004 and Mastropieri et al., 2001. Studies with theoretically similar contrasts and measures of reading comprehension were included in the meta-analyses. All studies compared the effects of a reading intervention with a comparison condition in which the construct of interest was absent. By selecting only studies with contrasts between a treatment condition and a no-treatment condition, I could make certain that the resulting point estimate of the effect could be meaningfully interpreted.

The majority of qualifying studies reported multiple comprehension-dependent variables. Therefore, a composite effect for each study using methods outlined by Rosenthal and Rubin (1986) such that each study contributed only one effect to the aggregate was first calculated. In these calculations, effects from standardized measures were weighted more heavily than effects from research-developed measures. In addition to an overall point estimate of the effect of reading interventions, weighted aggregates were also calculated to highlight effects of certain intervention characteristics (e.g., using narrative versus expository text). When reporting weighted mean effects, only outcomes from studies with treatment-comparison conditions were included. Effects from single-group studies were excluded because only one study (Mercer et al., 2000) provided the information needed to convert the repeated-measures effect size into the same metric as an independent group effect size.

Overall effect on comprehension. The eight treatment-comparison comprehension studies and the five treatment-comparison multi-component studies were included in the meta-analyses because they: (a) had theoretically similar contrasts and measures of reading comprehension and, (b) examined the effects of a reading intervention with a comparison in which the construct of interest was absent. In eight studies the contrast was between the intervention of interest and the school's current reading instruction. In five studies, the comparison condition also received an intervention, but the construct of strategy of interest was absent from the condition. The remaining three treatment-comparison studies in the synthesis were eliminated from the meta-analyses because they did not include a comprehension measure (Bhat et al., 2003; Kennedy & Backman, 1993) or they did not include a no-treatment comparison condition (Klingner & Vaughn, 1996).

Homogeneity of effects was rejected (Q = 18.05, p = .006) for the comprehension subset. Therefore, I analyzed a random effects model with one predictor variable (intervention type) to account for the presence of unexplained variance and to provide a more conservative estimate of effect significance. A weighted average of effects was estimated and the amount of variance between study effects calculated using the Q-statistic (Shadish & Haddock, 1994).Homogeneity of effects was accepted (Q = 9.12, p = .05) for the multi-component subset, indicating that effects did not vary significantly across studies. Average effects for the comprehension subset, after adding a random effects variance component is (*ES* = 1.81, *CI* = .92, 2.92) and (*ES* = .94, *CI* = .26, 1.62) for the multi-component subset. Average weighted effects are presented in Table 8.

To examine whether researcher-developed or curriculum-based measures inflated the effect of reading interventions, I also calculated the effect based on only standardized measures. For this analysis, 2 studies were included; the other 14 studies were eliminated from this secondary analysis because they did not include a standardized measure of comprehension. Studies that included a standardized measure of comprehension yielded a moderate effect (*ES* = .67, 95% *CI* = .29, 1.05 [multi-component subset only]). The comprehension subset included only researcher- developed measures (*ES* = 1.81, 95% *CI* = .92, 2.92). The effect of reading interventions on comprehension in multi-component studies was quite large (*ES* = 1.09, 95% *CI* = .29, 1.67) when researcher-developed measures were used to estimate the effect (k = 3).

I also computed weighted average effects for studies with common characteristics. Whether an intervention was implemented by the researcher (n = 3, average *ES* = 1.65 [comprehension subset]), or the students' teacher (n =3, *ES* = 1.77

[comprehension subset]), the effects were large. In one study where the comprehension intervention was implemented by both, the effect was moderate (*ES* = .75). The multi-component intervention implemented by researchers had a large effect size (*ES* = 1.33), while those implemented by teachers (*n* = 4, *ES* = .84) was also high.

Four of the seven comprehension treatment-comparison studies used connected text as part of their intervention (*ES* = .92; whereas, three of the five multi-component treatment-comparison studies used connected text as part of the intervention (*ES* = .79). When compared to the comprehension studies that did not use connected text (*n* = 4, *ES* = 1.63) and the multi-component study (*n* = 1, *ES* = 1.00), the investigations that did not use connected text had higher effect sizes. An analysis of the three comprehension studies using connected text that focused specifically on expository text (Bos & Anders, 1989; Bos et al, 1990; Mastropieri et al., 2001) showed a large effect size also (*ES* = 1.11). The multi-component study that used connected text demonstrated a moderate effect size (*ES* = .75). Two tested the multi-component effects of vocabulary and comprehension strategy instruction on comprehension. Graphic organizers and the effects reciprocal tutoring were each represented in the remaining two studies.

Of the four comprehension subset studies reporting data on implementation of the intervention fidelity, the effects were high (*ES* = 1.83) compared to the aggregate of those not reporting fidelity (*n* =1.23), which was also high. Two of the multi-component studies reported fidelity (*ES* = .76); whereas, the effect size for those multi-component studies not reporting fidelity was (*ES* = 1.05). All of the comprehension subset studies (*n* = 7) were carried out in special education settings (resource, self-contained). Of the multi-component subset, Hasselbring and Goin (2004) conducted their research with

participants removed from class and taken to a in a computer lab (*ES* = 1.00), while Fuchs et al. (1999) conducted their investigation with students in both a resource setting and in general education remedial classes (*ES* =.34). All other multi-component studies were conducted within special education settings and had overall large effects (*n* = 3, *ES* = 1.11).

An analysis of duration in relation to effect sizes reveals that of the four comprehension studies that reported duration, the mean duration of an intervention in minutes was 606 (*ES* = 1.39). The mean duration for the multi-component subset was 572 minutes (*ES* = 1.11).

INTERVENTION VARIABLES

For this synthesis, I examined findings from treatment-comparison design studies first because the findings from these studies provide the greatest confidence about causal inferences. I then used results from single-group and single-subject design studies to support or refute findings from the treatment-comparison design studies. Findings are summarized by intervention type. Intervention type was defined as the primary reading component addressed by the intervention (i.e., comprehension, fluency, word study, phonics). The corpus of studies did not include any vocabulary interventions, but did include several studies that addressed multiple components in which vocabulary instruction was represented. Within each summary, findings for different reading outcomes (e.g., comprehension, fluency, word reading) are reported separately to highlight the interventions' effects on component reading skills.

Comprehension. Nine treatment-comparison studies (Abrahamsen & Shelton, 1989 Darch & Gersten, 1986; DiCecco & Gleason, 2002; Gajria & Salvia, 1992: Jitendra et al.,

2000; Klingner & Vaughn, 1996; Snider, 1986 Wilder & Williams, 2001; Williams et al., 1994) focused on comprehension. Among these studies, two (Jitendra et al., 2000; Klingner & Vaughn, 1996) examined interventions in which students were taught a combination of reading comprehension skills and strategies, an approach with evidence of effectiveness in improving students' general comprehension (NRP, 2000; RAND Reading Study Group, 2002). One study (Klingner & Vaughn, 1996) employed reciprocal teaching (Palinscar, Brown, & Martin, 1987), a model that includes previewing, clarifying, generating questions and summarizing. It has been shown to be highly effective in improving comprehension (see Rosenshine & Meister [1994] for review). Klingner and Vaughn (1996) reported mixed results when the grouping structure of a reciprocal teaching intervention was manipulated during student application and practice. On a standardized measure of comprehension, cooperative grouping was the more effective model (*ES* = 1.42). On a researcher-developed comprehension measure, the effects were small but favored the peer tutoring group (*ES* = .35). It is likely that the standardized test outcome is more reliable, suggesting greater effects from the use of cooperative grouping structures, at least for English language learners with LD.

Other studies focused on a single comprehension strategy (Gajria & Slavia 1992; Jitendra et al., 2000; Wilder & Williams, 2001; Williams et al., 1994). Three studies of single-strategy interventions showed large effects on measures aligned closely with the intervention but limited examples of transfer to more general comprehension measures. For example, students who were taught to identify main ideas within text outperformed students in the comparison condition on a task of identifying and producing main idea statements (*ES* = 2.23, Jitendra et al., 2000). Although the treatment effects were

maintained on near and far transfer measures (*ES* = 2.23 to 2.57), scores decreased significantly for both conditions on transfer passages, indicating a lack of transfer to novel contexts. Similarly, interventions in which students were taught to identify and apply story themes (Wilder & Williams, 2001; Williams et al., 1994) resulted in large effects on measures of theme identification and application (*ES* = 1.41 to 5.93). Although effects of this intervention on general comprehension tasks tapered over time, they still demonstrated moderate effects (*ES* = .41 to.59, Wilder & Williams, 2001). Gajria & Salvia (1992) compared the direct teaching of summarization against typical instructional methods used to comprehend expository text. Results were high for the treatment group on researcher-developed measures (*ES* = 4.33). A follow-up standardized measure administered to the treatment group four weeks later indicated that maintenance was attained and generalized (*ES* = -1.85).

Multiple baseline designs were employed in three single-subject studies (Clark et al., 1984; Lauterbach & Bender, 1995; Swanson et al., 1987) to examine the effects of instruction in the use of various strategies on comprehension. While the use of visual imagery and questioning (Clark et al., 1984) by participants was shown to improve gains in comprehension, use of prompts was inconclusive. The use of a paraphrasing strategy (Lauterbach & Bender, 1995) proved effective in increasing paraphrasing in two of the three participants. However, only one student increased reading comprehension as a result of the cognitive strategy. Swanson et al. (1987) studied the effect of strategy instruction on the number of idea units recalled. Treatment effects demonstrated mixed results on general comprehension questions (*PND* = 60% to 80%) for the two participants.

Using graphic organizers is another strategy with demonstrated efficacy in improving comprehension (Kim et al., 2004). Two experimental studies (Darch & Gersten, 1986; DiCecco & Gleason, 2002) and two single-subject studies (Gardhill & Jitendra, 1999; Vallecorsa & de Bettencourt, 1997) examined the impact of teaching students to use visual organizers. In Darch and Gersten (1986), the effect of using an advance organizer— in this case, a text outline—when compared to traditional basal instruction demonstrates a large effect (*ES* = 1.08). In DiCecco and Gleason (2002), the effect of a concept relationship graphic organizer intervention on relational statement production was large (*ES* = 1.68). However, the effect was mixed for measures of content knowledge (*ES* = .08 to .50). Other studies also indicated that graphic organizers assisted students in identifying information related to the organizer but were less effective in improving students' overall understanding of text. For example, in a single-subject study of a story mapping intervention, Gardhill and Jitendra (1999) found mixed results on general comprehension questions (*PND* = = 13% to 100%) but consistent improvement over baseline on story retell (*PND* = = 100%). Similarly, all three students in a study of explicit story mapping (Vallecorsa & de Bettencourt, 1997) increased the number of story elements included in a retell (*PND* = = 67% to 100%).

Three studies included information about students decoding abilities (DiCecco & Gleason, 2002; Jitendra et al., 2000; Snider, 1989). In all three studies, students were adequate decoders but poor comprehenders. The average effect of the comprehension interventions was high (*ES* = 1.49). Snider investigated the effects of text structure and levels of prior knowledge on comprehension in comparison to typical instruction and

concluded that controlling for prior knowledge and vocabulary aided in comprehension (*ES* = 1.40).

Abrahamsen and Shelton (1989) demonstrated high effect sizes (*ES* = 1.22) when controlling syntactic and semantic features of content area text. In this study—unlike DiCecco and Gleason (2002), Jitendra et al. (2000) and Snider (1989) —comprehension was achieved without lowering the reading level or reducing the content when compared to the textbook version.

Multi-component. Studies by Bos and Anders (1990); Bos, Anders, Filip, and Jaffe (1989); Fuchs et al. (1999); Hasselbring and Goin (2004); Kennedy and Backman (1993); and Mastropieri et al. (2001) were classified as multi-component when the interventions included instruction in more than one component of reading, such as word study with fluency or fluency with comprehension (*NRP, 2000*). Two multi-component studies (Fuchs et al., 1999; Mastropieri et al., 2001) featured a slightly modified version of a peer-assisted learning (PALS) comprehension and fluency intervention, an instructional model with demonstrated efficacy in the early elementary grades (Fuchs et al., 1997). Results when using this intervention model with secondary struggling readers were mixed. When implemented in an inclusive setting on a biweekly basis, effects on comprehension skills were small (*ES* = .31, Fuchs et al., 1999); yet, effects were quite large when implemented daily in a self-contained resource room (*ES* = 1.18, Mastropieri et al., 2001). It should be noted that the large effect size was computed from data on a researcher-developed measure, whereas the smaller effect was based on data from a standardized measure, which is a more reliable measure of the intervention's effect.

In two treatment-comparison studies (Bos & Anders, 1990; Bos et al., 1989) vocabulary strategies were investigated for effects on reading comprehension and content knowledge. Both studies, one using science text with high school age participants (Bos & Anders, 1990), the other social studies text with junior high school students, demonstrated high effects (*ES* = .83; *ES* = 1.33). The effect sizes are comparable to findings by Abrahamsen and Shelton's (1989) semantic and syntactic interventions, although the latter did not lower the readability level of the text.

In a single-group design study (Bryant et al., 2000), students participated in an enhanced collaborative strategic reading intervention during which they applied word learning, word reading and comprehension strategies and practiced fluent reading. This was the only study that examined the effects of an instructional model with all four components included. Effects on word identification and oral reading fluency were moderate (*ES* = .64 and *ES* = .67, respectively), but effects on comprehension were small (*ES* = .22).

Hasselbring and Goin (2004) implemented a computer-based intervention that provided students with word reading and spelling practice and comprehension support during text reading. Effects on comprehension (*ES* = 1.0) and vocabulary (*ES* = .75) were large. Effects on word-level skills, however, were small (*ES* = .23 to .44). Kennedy and Backman (1993) compared the use of the Lindamood program on word recognition to a remedial program and found no significant gains for either intervention condition on comprehension. This intervention is discussed further under the word study description that follows fluency.

Only three studies featured technology prominently in the instruction. One was the previously discussed multi-component intervention by Hasselbring and Goin (2004). One other was a study that used computers to enhance text to support reading (MacArthur & Haynes, 1995), yielding an effect size in favor of basic text support (word recognition and decoding with vocabulary support) when compared with enhanced text support (additional support that included question windows, glossary, teacher comments, and speech synthesis) for comprehending expository text. The final computer-based intervention, by Farmer, Klein, and Bryson (1992), measured effects of whole-word feedback on fluency and comprehension. Computer-synthesized speech was used to improve word-recognition skills, but findings were insignificant on tests of comprehension (*ES* = .07) and word recognition (*ES* = .16). The researchers speculated that adequate motivation for participants to use the computer feedback may have been absent resulting in the feature being under-utilized. Motivation, according to Biancarosa and Snow (2004), is an important consideration for programs addressing the needs of struggling adolescent learners.

Fluency. The studies of fluency included in this synthesis focused on improving oral reading fluency, often through word or phrase reading practice and/or repeated reading. Results were mixed with inconsistent improvements in oral reading fluency over baseline (Freeland et al., 2000; Mercer et al., 2000; Rose & Sherry, 1984; Rosenberg, 1986; Thorne et al., 1984; Valleley & Shriver, 2003). Words read correctly by the 3 participants in the study by Freeland et al.(2000) demonstrated gains when comparing their repeated oral reading performance to their initial words read correctly at baseline with only silent reading practice. Rose and Sherry (1984) reported that the listening preview procedure

was more effective than either no previewing or silently reading the text prior to reading it aloud for 4 of their 5 participants. Valleley and Shriver (2003) reported that their 3 participants made some gains in the number of words read and in the number of comprehension questions asked after repeated reading practice. Studies by Rosenberg (1986) and Thorpe et al. (1981) focused on word reading in isolation and results indicate that for the majority of participants repeated practice with immediate feedback and correction led to increases in words read correctly.

Word study. One of two experimental word-level studies examined the effects of word-reading strategies. The first (Bhat et al., 2003) studied the effects of a phonemic awareness intervention. Results of the phonemic awareness intervention were positive, with large effects on phonemic processing (*ES* = 1.59) as measured by the Comprehensive Test of Phonological Processing (CTOPP). However, the overall effect of improved phonemic processing transferred minimally to improved word identification (*ES* = .15). Kennedy and Backman (1993) studied the effectiveness of the Lindamood Auditory Discrimination program on word recognition. Overall effects using standard measures were small or nonexistent (*ES* = .13) on word recognition and on paragraph reading (*ES* = -.18). Most of the gains occurred during the initial months of implementation when the Lindamood program was intensively introduced and taught; however, improvements were maintained. The authors explained that the severity of participants' disabilities may have required more time than the intervention allotted.

SUMMARY

An examination of the intervention studies with adolescent students with LD indicates that improvements in the area of reading are possible. An analysis of study

findings and effects across intervention types show some gains demonstrated across all areas, although most significant increases resulted from implementation of interventions in comprehension (comprehension skills and strategies, use of graphic organizers) and multi-components (fluency and comprehension; vocabulary and comprehension). Use of content area text was employed in several of the interventions, emphasizing the importance of secondary students' transfer of skills and strategies to the appropriate type of text. Building in opportunities for struggling adolescent readers to establish prior knowledge and vocabulary in reading-related tasks was deemed effective in improving comprehension levels, as was providing peer-to-peer reading activities (reciprocal teaching and peer tutoring).

CHAPTER V: Multivocal Findings

The purpose of the multivocal component in this study was to analyze practitioner and stakeholder insights into secondary reading interventions gathered through focus group interviews. The gathering of this data was necessary so that the data-based findings could be compared to respondents' reading intervention perceptions and practices reportedly occurring in the field. Focus group interviews provided the data and were incorporated as the "voices" of my multivocal synthesis. The perceptions and practices related to reading intervention for students with LD analyzed from the synthesis revealed that regardless of the existing data-based knowledge on reading interventions, there is, as Torgesen (2002, p. 101) has indicated, "A way to go before we researchers rest," due to the limited opportunities educators have to learn about and utilize meaningful secondary reading interventions. Further, interviews reinforced practitioners' feelings of being overwhelmed with administrative and district mandates to implement reading intervention "programs" that they don't always agree meet students' learning needs. The separateness that continues to exist between the research and practice communities is evidenced in the themes that emerged from the focus group interviews provided in detail with supporting quotes throughout this chapter.

The second research question in this study served as the probe for generating focus group interview discussion from six participants employed in urban middle (n = 3) and high schools (n = 3) on how secondary reading professionals perceive and provide reading interventions for students with LD. Topics were categorized into eight

intervention themes(familiarity/usage, knowledge/information, barriers, facilitators, selection, rejection, alteration, and data-based findings) to assist in management and organization of the data (see Appendix G). Additionally, focus group participants vocalized experiences and perceptions related to secondary reading interventions that were unexpected. These have been categorized into five unexpected themes: (1) the district "program" push; (2) the demise of the reading/language arts experience; (3) the interventionist experience as overwhelming; (4) teaching reading in secondary schools and (5) on being "informed by research."

The-knowledge-for-practice perspective—that the more teachers know, the more successfully they will teach—is a widely accepted view on teacher learning (McLeskey & Waldron, 2004). Within this view, educators are considered consumers of knowledge who are expected to use research-based practices to guide their instruction (Cochran & Lytle, 1999). Teachers have even been blamed for the research-to-practice gap, accused of ignoring research in favor of continuing to use familiar, though less effective, intervention practices. The perspectives of the participants captured here indicate that the expectation is not for them to be consumers of research-based intervention knowledge, but rather consumers of published reading intervention programs that often are scripted and allow little teacher input or alteration, even when students' learning needs are not perceived to be adequately addressed.

MULTIVOCAL THEMES

Familiarity/usage. When asked to describe their familiarity and usage of reading interventions, participants (n = 6), all named various reading intervention programs (SRA Corrective Reading, Read 180, Weaver Online, My Reading Coach, Rewards, SIPPS)

adopted by their campuses. All teacher respondents (n = 4) reported having experience in actually using one or more of the above-named programs with students. In the case of the participating instructional specialists (n = 2), their experience lies in coaching teachers in the use of the various programs with students. According to a middle school instructional specialist, " … currently at the school where I work, we use SRA Corrective Reading, and we are implementing Read 180 … We are also in the middle of purchasing Weaver's K–12 Reading Curriculum and My Reading Coach." The consensus of the group was that use of a district-selected intervention program was required. However, limited, inadequate training was cited as the reason for limited familiarity with those programs. As one respondent indicated, "Like Read 180, it's mandatory this year, training was one hour. There's no way that you know what Read 180 is in one hour, unless you take the initiative to research it yourself. I mean, they're showing us slides, that it's proven to work, but that's not enough for most teachers." The respondents did not indicate a disregard for research-based practices, although in one situation where the program was adopted but had not yet made it to the classroom where teachers were expected to implement it, the educator felt the need to experiment. "I'm just doing different things that I have gleaned from different books to get them to try to love, try to like reading … " Rather, the respondents interviewed articulated that their campuses were in need of interventions to help the large number of struggling readers and saw their roles as important and necessary in intervening to address weaknesses in reading.

If the goal of research is to assemble knowledgeable teachers needed to teach well, as is held by the knowledge-for-practice perspective, then the research-to-practice gap is interpreted as teachers' failure to appropriately implement the theories and

research findings verified by researchers. Participants in my study, however, expressed a genuine interest in research-based reading intervention practices, but their knowledge and information related to these practices was often secondhand, filtered from the district level and left to interpretation by administrators and curriculum or instructional specialists who often presented only partial research findings or findings offered by publishing companies themselves.

Knowledge/information. When asked where they obtained knowledge and information about reading interventions, respondents indicated that they searched for information from specialists and other teachers. Further, they alluded to using books and the Internet as a source of information on reading interventions. The group agreed, however, that typical district practice involved choosing specific intervention programs, then sharing knowledge of those selected programs and research-related findings with instructional staff members, who were expected to use those programs with their students. The following quotes highlight this finding:

> The programs I mentioned have all been purchased for our school by the districts, so I did my investigation into those programs after they were already purchased, so it was kind of backwards.
>
> *Respondent 1, 15 years experience/ middle school inclusion teacher*

> It would be a combination because the district is pushing it [the intervention], so they're bringing in stuff all the time it seems like. The instructional specialist, too, is always bringing in stuff, so from both my looking for it and the district bringing it in.
>
> *Respondent 3, 7 years experience/high school interventionist*

> I would say as an instructional specialist, the district is very clear on what they want you to do, and that there is a, there's a certain expectation of what you're, you are using in your class, in, you know, in your program and with your classrooms. Of course there's choice, and we work, we

> work together with the district, but there is an expectation of what we should be using, and if it's not being used, there's questioning to why it's not.
>
> *Respondent 5, 8 years experience/high school instructional specialist*
>
> I think at the high school level because there's no curriculum for reading, that we are having to seek a lot of it on our own, when there's not a program that they want us to use.
>
> *Respondent 6, 3 years experience/high school English*

While the above quotes indicate that respondents possess some knowledge of reading intervention research, the next theme describes what they view as impediments to implementing those research-based practices within their schools.

Barriers. A review of the literature reveals that researchers themselves often share the blame for teachers not readily translating research into practice (Fuchs et al., 1996; Gersten et al., 2000). This is particularly true for educators who have an intervention curriculum imposed on them in the name of "research" disregarding the constraints placed upon educators (insufficient time, resources, materials, and training; improper implementation; lack of teacher buy-in and administrative support; and insufficient scheduling of students into appropriate classes). While scripted lessons and prepackaged programs were described as beneficial, they were seen by participants as only as good as the teacher commanding the script or the program:

> I think that a scripted lesson plan is good, because at least you know it's [instruction is] going to happen, but, I've also seen too many times, a scripted thing will work with one teacher, and they're great at it and they're snappin' (makes snapping sounds with fingers) and the kids are into it. And then, there are teachers who read it, like a sermon, and the kids are going to sleep.
>
> *Respondent 1, 15 years experience/ middle school inclusion teacher*

> Even though there is the perception that anyone can just stand up there and do it, it really still is teacher dependent. Even with the script.
>
> *Respondent 2, 8 years experience/middle school instructional specialist*
>
> I wish all our lessons were scripted and that they could address all the needs of all the kids, at risk populations, and that everybody would love it and do it well. But I don't think that is possible.
>
> *Respondent 1, 15 years experience/ middle school inclusion teacher*

While all participants reported being in schools where intervention programs were adopted to address the needs of struggling readers, including those with LD, few felt that these programs were addressing the needs of those teaching adolescent struggling readers:

> With the purchase of these various programs, that's the training that the secondary teachers are now given, and it's called "reading training," even though there still is not the, the training that's involved if you were to teach in an elementary school where they teach you various phases of learning how to read. And so, I think that's a barrier, because I think what's happened is that instead of really looking at the total picture of how one learns to read, we're just trying to introduce various programs.
>
> *Respondent 2, 8 years experience/middle school instructional specialist*
>
> We think that by presenting a program and providing training in that program we've addressed training people to teach children how to read, and I think that there's a disconnect there.
>
> *Respondent 4, 19 years experience/middle school interventionist*
>
> I think that they also need proper training just in reading period. Because for example, we have a teacher this year who's teaching Read 180 who has no background in reading, and I'm not really sure why he was chosen to teach the class, other than he volunteered maybe, but it has been a constant struggle because he really was sold on the idea that this program was going to run itself, and so he has very ineffective reading groups, he has no whole group instruction. And, , I'm a, charged with this task of trying to fix that, but I have to back up all the way to teaching this person basic skills in the teaching of reading.

Respondent 2, 8 years experience/middle school instructional specialist

The use of pre-packaged intervention programs was also considered a barrier for educators whose teaching philosophy conflicted with intervention mandates administrators or districts imposed, leading to little buy-in at the classroom level. As one teacher put it, "A lot of teachers who love teaching literature and reading, they're now given this canned program, and [the district is] saying, 'this works' without the teacher really believing it."

Improper placement and scheduling of students into these programs without a deeper consideration of whether the program addressed students' needs and interest level were also seen as barriers. Respondents named testing and actually matching students to appropriate programs as other constraints, especially if one program has been deemed the "cure-all" for struggling secondary readers. Intervention implementation not being properly mapped out at the administrative level was reported to have left teachers to try to add programs to existing curriculum midyear, "which does not necessarily make for a smooth transition," according to one teacher still awaiting her intervention program materials in January, six months after being moved into the role of interventionist with a computer-assisted intervention program.

While administrative and district support was seen as key in the success of interventions, participants expressed concern that this was not always the case. As one teacher commented," You know, it goes one way or the other: either they are very supportive of a reading program at the high school level, or they're not very supportive at all and think it is a waste of time, you know?" Apprehension was also expressed in relation to the disregard districts often demonstrated toward intervention program

guidelines. For instance, a respondent indicated that Read 180 specifies that there should be no more than 18 to a class, 6 to group. Yet, according to this educator, a district initiative stated, "Well, go up to 21." Another respondent added, "If you are going to bring in something, you must support it all the way … don't just override it."

Facilitators. Focus group participants specified that prepackaged and scripted intervention programs did in fact pose some benefits (heightened awareness of areas of reading difficulty, appropriate instruction in reading more likely to occur) for teachers, as indicated below:

> When we did have campus wide implementation of SRA, I think that it heightened awareness of what it sounds like when a child truly is struggling to read. And I think that that opened the eyes of a lot of content area teachers, who don't necessarily focus on reading ability. I also think that it opens a discussion. So even if you are just implementing a program, you still have more of a base to discuss with the teachers what some of the problems may be that the child is having as they try to improve their reading.
>
> *Respondent 2, 8 years experience/middle school instructional specialist*

> Without some of the programs, teachers wouldn't be aware [of reading difficulties] at all in some cases.
>
> *Respondent 5, 8 years experience/high school instructional specialist*

> What I saw was, and this is going into classrooms with the teaching going on, observing with some of my students, and I saw this on a day-to-day basis with over 50% of the teachers that were teaching special education. reading, that children were given what they already knew. There was no teaching going on at all. They were given worksheets, and that was a reading language arts class. And, so, even if a teacher is not doing Read 180 to its fullest extent, to the best of it possibilities, it is certainly better than what a lot of the students were receiving as far as the special education. kids were concerned.
>
> *Respondent 1, 15 years experience/ middle school inclusion*

In general, facilitators to successful implementation of reading interventions were described as actually understanding how to teach reading and allowing adequate time to plan for interventions before implementing them and then time to assess interventions once they are underway. As one respondent put it, "People need to take care to make sure they have the right people implementing programs … it's still all teacher dependent." Another added, "Just let me plan. You are teaching me this, and this, and this, and this, but I never have time to do any of it because I am always being taught what I should do."

Behavior and classroom management were other areas participants indicated as facilitating the success of an intervention program. "Good teacher management of the kids will make a huge difference. You know, kids have to be focused," one teacher relayed. Another added that a teacher has to be able to handle the demands of an intervention program (small group instruction, transition time). "If they can't, then the program is not gonna work in that classroom," according to the respondent.

Selection. While the literature cites that teachers tend to make intuitive judgments about what works and does not (Greenwood & Abbott, 2001), the majority of teachers interviewed for this study (n = 5) were thoughtful in considering not only the components of the program to make sure the program addressed what students actually need, but also whether these interventions would match students' interest level (not too juvenile, basic, or boring). Only one of the respondents indicated that she would ask another teacher about an intervention before adopting it. This teacher responded that when her administrator asked whether she would consider becoming a Read 180 teacher the following year, the respondent in turn asked a teacher who was already employing

that intervention whether it worked. Once the second teacher said, "Yes, it raised their scores," the respondent, a special education teacher, said she decided to teach Read 180 the following year.

Rejection. Respondents implied that they do not have much of a voice in rejecting an intervention once a district adopts it. However, reasons they would choose to reject an intervention reflect their fears that an intervention promises to deliver too much for too many learners. Interventions considered too complex or too simplistic were also named as causes for rejection. Quotes that illustrate these findings are as follows:

> I would want to reject an intervention if it was too vague, and/or complex.
>
> *Respondent 3, 7 years experience/high school interventionist*
>
> If it's oversimplified, because reading is such a complex skill, that I think that the programs should at least acknowledge that, you know, this is, if it's something like SRA decoding, acknowledging that this only enhances one component of reading acquisition, as opposed to this will help all your kids learn how to read.
>
> *Respondent 2,8 years experience/middle school instructional specialist*
>
> I think oversimplification, saying, "This is the all be all" if it's not.
>
> *Respondent 1, 15 years experience/middle school inclusion*

Alteration. Woodward (1993) noted that teachers often fail to implement research procedures or that they change the procedures drastically. Although participants stated an awareness of the importance of fidelity to an intervention program, individual student needs were given as a reason to alter an adopted program. One teacher gave an example of the mandated use of Read 180 books that were not at a low enough level for some of the students, so the teacher brought in Dr. Seuss books. One teacher summed it up in this way, "I think that's where the teacher is the professional and knows what needs to be

done within the classroom as opposed to just saying, 'Well, I have to teach the program, 'cause we were told to teach it this way.'" Interviewees expressed that they were trying to do their best to carry out interventions with fidelity within the constraints of school wide schedules that often allotted less time for intervention than programs called for and within the reality that many interventions were implemented during before- or after-school tutorials by any warm body that volunteered for extra-duty pay:

> Because the Read 180 representative did say don't expect these results then cause you're not doing it according to our structure. [50 minutes vs. 90 minutes]" And then you're like, "I know, but we're trying! This is the time we have." So, you know, so it will be interesting to see once it's up and running how that does affect what the results may be.
>
> *Respondent3, 7 years experience/high school interventionist*

> So, then you start ending up with the homemaking teacher is willing to come in for two hours after school. So, then they're going to teach reading intervention, you know? And so, it just starts this whole cycle of you know, well, as long as we have a warm body, and the kid is there for 2 extra hours a day, surely they're going to be able to improve their reading. And, really, they're not.
>
> *Respondent 2,8 years experience/middle school instructional specialist*

Data-based findings. Educators are not credited for possessing an awareness of researched-based practices (Carnine, 1995; Greenwood & Abbott, 2001), but the respondents in this study could indeed see how some of the evidence-based interventions (direct instruction, strategy instruction, small group instruction, the prevalence of comprehension interventions, and computer-assisted instruction) connected with their own classroom practices and struggling students with LD. On the subject of direct instruction and strategy instruction demonstrating moderate to high outcomes for students with LD, participants stated:

> By doing direct instruction and giving them strategies to use, it's amazing how much they are comprehending the stories, so I definitely think that it's a good thing.
>
> *Respondent 6, 3 years experience/high school English*

> I think it's right, it's crucial, because at the secondary level, they're not gonna get that in their core classes. If they were in an English class, they're not gonna get the reading-specific reading strategies that they need because the teacher is trying to move them on in English. Which is why, you know, it's a huge thing I know in the district, that in reading, you need to be teaching reading. It is not an English class. Do not teach English in the reading class. You need to be teaching specific strategies and ways to help these kids tackle a text as opposed to comprehension, and how can we delve further into the story and what is the theme…you know?
>
> *Respondent 3, 7 years experience/high school interventionist*

Five of the 6 interviewees stressed the importance of being able to work with students in need of intervention within small groups. Further, they indicated that large class size, often a given in secondary schools and particularly in compensatory reading classes where struggling students are often enrolled in place of a chosen elective deters teachers from attempting to group students for instruction or on occasion work with a student in a one-on-one situation:

> Class size is key. I mean teacher-student ratio is essential. You go past a certain number, I don't care what you have, it's not going to work.
>
> *Respondent 3, 7 years experience/high school interventionist*

> Yeah, I mean, you're going to buy a program like Read 180, it specifies that there should be no more than 18 in the class, 6 to a group, and yet you know, here comes an initiative from the district to open up to 21. And it makes a difference; from 6 to 7 to a group is a huge difference.
>
> *Respondent 1, 15 years experience/middle school inclusion*

> And now there's this whole switch happening, to where the reading classes really aren't that small anymore, because we have started to target so many kids that need it.

Respondent 3, 7 years experience/high school interventionist

> Last year, when I did SIPPS, like they were researching it, 'cause it's just now starting to go out, and I had very small classes. I think my large class was 12. And I still did the groups with them. So when I did my direct instruction, the maximum direct instruction that I did was 4 kids at a time. And so, of course it worked really well because, you know, classroom management was okay, because there was only12 in there, you know? And then my direct instruction, I could answer questions of 4 kids as opposed to 25. This year, I tried doing the exact same thing with 25 kids in one classroom, and it bombed.

Respondent 5, 8 years experience/high school instructional specialist

> Certainly, the person who goes in and is working one-on-one is going to do better than a teacher who's got too many kids.

Respondent 6, 3 years experience/high school English0

While participants agree on the importance comprehension plays in all areas for secondary students, there was some discussion questioning the dominance of comprehension intervention studies (n = 15) in my literature synthesis. While one participant found the number of studies to be appropriate for this age group, another was bothered that components like vocabulary and word study were not given as much attention as comprehension.

> Well, I think comprehension is probably one of the most crucial components, because once they hit the secondary level, then you're asking them to absorb content area knowledge. And so, as we know, that just gets harder and harder, and so if you're behind already, then when you're asked to read academic language in, let's say, history or science, then it becomes even more problematic. Because you're, everybody's used to a story form, but then when you transfer to nonfiction, it's essential that they have comprehension skills

Respondent 5, 8 years experience/high school instructional specialist.

> Yeah, I think what's interesting, actually, is the assumption that once a child gets to secondary school, you don't need to worry about those things. Like, they should know, for example, the basic sight words by then, or

> they should be able to decipher a word by breaking it into parts, you know prefix, you know, root, all that. And I think that that's one of the challenges when you're working in a secondary school that has so many kids that are struggling readers.
>
> *Respondent 2,8 years experience/middle school instructional specialist*
>
> I think that the comprehension needs to be there, but I also think that the other two components [vocabulary and word study] have to be there, too.
>
> *Respondent 3, 7 years experience/high school interventionist*
>
> For me, vocabulary is huge because most of the times for my kids, it's not an issue of whether they can read or not, 'cause I place something in Spanish in front of them and they can zoom through it. But if I place something in English in front of them, you know, it's a whole vocabulary issue.
>
> *Respondent 6, 3 years experience/high school English*
>
> How can you comprehend if you don't have the vocabulary? And if that's what you're going to study, the comprehension, then the comprehension is obviously going to be low if they don't know what the words mean.
>
> *Respondent 5, 8 years experience/high school instructional specialist*

As for the low number of computer-assisted interventions included in my synthesis (n = 3), participants weren't surprised, because my synthesis included many studies conducted before computers became commonplace in classrooms (1980s-1990s). One respondent remarked about the irony: "We're about to have three computer-assisted interventions on our campus." Another remarked on the value of incorporating a computer: "[Students are] not afraid of the computer. They want to interact."

One participant warned against putting too much emphasis on the computer as interventionist:

> I would say, put trust in the teachers as well. That, again, with high turnover rate in the profession, that maybe it's easier to purchase a

> program, but we still, you know, we want well-trained teachers that can, can speak to the needs of every specific student. A computer can't do that.
>
> *Respondent 2,8 years experience/middle school instructional specialist*

Another offered a realistic perspective on what a computer intervention can offer students, "I don't know that they're getting any sort of better training on the computer except for that it … that they're interested in that."

UNEXPECTED THEMES

The district "program" push. Sweeping reform efforts in underperforming schools, as noted by my respondents, have resulted in treatment of the symptoms of student underachievement in reading rather than the causes. The voices of the respondents indicated a concern over what they described as a district "program push":

> It's very interesting to be in a position where you're trying to work with teachers to deliver the best instruction they can deliver, but yet, the district is pushing things that I wouldn't consider always be the best as far as instructional materials.
>
> *Respondent 5, 8 years experience/high school instructional specialist*
>
> [Instructional specialists] were given a menu of items to select, but then, at the same time, when we didn't, like I had not chosen Weaver's for whatever reason, but then I was sent a letter saying that they really strongly suggested that I reconsider that decision. Now we have Weaver's.
>
> *Respondent 2, 8 years experience/middle school instructional specialist*
>
> I feel like, at least speaking about my district … there is this focus on fixing reading problems through programs.
>
> *Respondent 3, 7 years experience/high school interventionist*

> You know, we have to get [students] to a point where they can succeed on their own once they graduate, and I feel like, as far as programs go, you know, "Try this one, try this one, oh, this is the new thing, why don't you try this!" Whereas, it's really the kids that we need to focus on instead of paying money for another program.
>
> *Respondent 5, 8 years experience/high school instructional specialist*

Demise of the reading/language arts experience. Out of the theme of the district program push as a means of addressing struggling readers' needs was heard another distinct theme: the diminishing of the reading/language arts experience. One teacher relates her fears below:

> In our district, Read 180 is an intervention. I mean, its sold as an intervention: however, for some reason, in our district, every year, they add more Read 180 classrooms, and so I guess my concern is that there seems to be this movement towards making that the language arts experience of the students. And more so in schools where maybe we don't have the highest [Texas Assessment of Knowledge and Skills] scores, I just know that my daughter will be in sixth grade next year, and I would be very dismayed to find that her language arts experience was Read 180.
>
> *Respondent 2, 8 years experience/middle school instructional specialist*

The interventionist experience as "overwhelming." Two of the respondents reported that their roles had shifted from classroom teachers to that of interventionists. Both were expected to implement a computer-based intervention full time. Previously, each had fulfilled special education teaching placements (inclusion, self-contained) before being reassigned as interventionists. Ironically, the intervention course at the high school and middle school level is considered to be a general education placement and the teachers (dually certified) are now in the pool of general educators expected to meet not only the needs of the many identified adolescent struggling readers with LD, but also the many unidentified students with significant learning challenges of their own (English

language learners, at-risk, low achievers). The respondents' perceptions of being an interventionist in light of the situations they and their students were placed into was nothing if not, in their words, "overwhelming":

> I think that it is just overwhelming when you get all of these kids, and you see what level they read on you do sort of have this message or something sent to you like, "Ok, you really need to catch them up, they really need to get up to this level!" And it's like, whoa! Look where they are! I'm not the miracle worker! You know? Like, it's, it's a big job, they've got, got a long way to go and, uh, I haven't really quite mastered yet how to integrate, I haven't really worked with the program yet, so I'm just doing different things that I've gleaned from different books to get them to love, try to like reading, but it is a little overwhelming that distance that they have to cross to get from 3rd or 4th grade level to hopefully, you know, passing the TAKS test and reading enough to understand what they're being told, tested on. It's a little overwhelming.
>
> *Respondent 3, 7 years experience/high school interventionist*

Teaching reading in secondary schools. Focus group espondents brought to light varying perspectives about teaching reading. These distinctions involved the preparation (elementary verses secondary training) and actual teaching of reading (components versus reading to learn). Respondents further commented that teaching reading is somehow less prestigious than teaching English courses:

> And, I think again, at the elementary level, reading is expected. But at the secondary level, it's not expected. And it kind of is the, like a stepchild.
>
> *Respondent 3, 7 years experience/high school interventionist*
>
> There's a perception that reading teachers are the ones that couldn't hang with the English.
>
> *Respondent 3, 7 years experience/high school interventionist*
>
> It was acceptable and appropriate to teach reading strategies in middle school,

according to the group. However, they said, in high school, English/language arts/reading is all about the content itself (English and literature). Interestingly, the high school interventionist saw herself as a "helper":

> I'm the one that's supposed to be catching them up on the reading part. You know, I'm the one who's the "catch-up helper" so that they can do those further, higher-level sorts of things … that's why you're in my class so that I can hopefully help you attack some text that you can go further with when you're actually in your literature class.
>
> *Respondent 3, 7 years experience/high school interventionist*

On being "informed by research." Lastly, respondents touched upon the theme of being "informed by research". As one participant put it, "I'm sure being informed of the research must play into what you choose to do." However, participants expressed their desire for researchers to know that the participants found the current state of research to be boring and less than user-friendly. Collectively, the focus group members advised that research should be explained to them in understandable language along with practical applications being explicitly stated, as those in the classroom don't have the time to try to make sense of it all. In the words of a high school teacher, "Explain the research to us. We are English word people, not numbers people".

SUMMARY

The purpose of conducting focus group interviews with practitioners and other stakeholders was to collect data from voices in the field about reading interventions implemented with adolescent students with LD and to compare those findings with findings from the literature synthesis. Eight categories, which also served as themes were used to organize participants' views (familiarity/usage, knowledge/information, barriers,

facilitators, influence, rejection, alteration, and data-based findings). Additionally, five unanticipated themes emerged from the respondents: (1) the district "program" push; (2) the demise of the reading/language arts experience; (3) the interventionist experience as overwhelming; (4) teaching reading in secondary schools; and (5) on being "informed by research." Many of the categories and themes identified, along with participants' own words, dispel the belief that teachers are responsible for the research-to-practice gap. The constraints under which they often attempt to employ reading interventions (lack of materials, overcrowded classrooms, little professional development, and no ongoing support) were identified and will be discussed in Chapter VI.

What I expected to gather from my focus group data were perceptions about reading intervention research and current practices. However, the story I initially chose to tell was based on the ill-conceived idea that the voices I summoned to listen to and record would be engaged and excited by intervention reading research. What I actually heard were stories about the lack of intervention research knowledge that reading educators possessed. This was coupled with tales of how reading intervention programs, touted as "research-based" were being mandated for use with struggling readers (students identified with specific reading disabilities were being included in these school-wide decisions), often at the expense of teacher decision-making and more specialized instruction based on individual student needs.

Chapter VI: Discussion and Conclusions

Included in this chapter is a discussion of what can be learned from this study and suggestions for tentative applications of the findings. Also included is a discussion of comparisons within and among the data sources (data-based and multivocal). Finally, the utility of the study and its subsequent limitations are addressed along with implications for the field.

In this study I sought to extend the work of Swanson et al. (1999) in three crucial ways: (1) focusing on the identification and analysis through a synthesis that focuses on secondary learners, isolating components critical for instruction for this grade group, (2) conducting a focus group to obtain a multivocal component to add to the data-based synthesis involving the integration of practitioner and stakeholder insights into the empirical knowledge base, and (3) adding new studies that were not part of the synthesis Swanson conducted, which did not include, studies after 1998. I will first discuss my conclusions about which reading interventions yield positive outcomes for adolescents with LD. Next, I will discuss conclusions drawn from the perspectives and practices of educators and the extent to which they perceived reading intervention research to be useful. This is necessary as a review of intervention research alone is incomplete without examining the voices and experiences of practitioners in relation to reading intervention research and their understanding and application of it. Educators, as secondary consumers of intervention practices are greatly affected by educational research. The addition of the multivocal component brings to light that even the most effective reading interventions will not make their way into classrooms if the fundamental needs of

teachers are not met (Boardman et al., 2005). Finally, I will discuss the integration of the two bodies of knowledge.

READING INTERVENTION YIELDING POSITIVE OUTCOMES

A primary finding from this synthesis is that adolescents with LD can improve in their reading comprehension when reading comprehension practices are directly taught. Results further indicate that adolescents with LD can benefit from explicit comprehension strategy instruction—that is, modeling and thinking aloud how to self-question and reflect during and after reading and engaging students to become actively involved in monitoring their understanding and processing text meaning. This form of collaboration among students as they read and construct meaning has been well defined by Beck and colleagues in their work on questioning the author (Beck, McKeown, Worthy, Sandora & Kucan, 1997; Beck, McKeown, Hamilton, & Kucan, 1997).

The moderate and large effects on training and near transfer measures did not frequently generalize to measures of broader, more general comprehension. It appears that comprehension and multi-component interventions can result in students becoming more proficient in applying learned strategies and learning taught content, but those interventions often do not result in readers who use the strategies independently and flexibly in novel contexts (e.g., Gajria & Salvia, 1992; Bryant et al., 2000). For single-strategy interventions, students were successful on measures related to the targeted strategy (e.g., identifying the main idea after explicit main idea instruction, Jitendra et al., 2000), but on broader measures of comprehension effects were generally lower and less consistent. These results suggest that secondary struggling readers with LD may need

additional opportunities to apply newly learned strategies to novel text or may need to learn other practices related to text reflection, self-questioning, and engagement.

Based on the mixed results from studies that examined the effects of early reading instructional practices (peer-tutoring), I conclude that educators cannot assume that instructional practices with demonstrated efficacy in the lower grades will be equally as effective when implemented with older struggling readers. There are several possible explanations for this. First, the learning needs of this population may differ from those of younger students. Some of these students may have had extensive interventions addressing word-level skills and few interventions addressing using strategies for comprehending text. This may explain why comprehension interventions for students with LD were associated with exceedingly high effect sizes. It may be that students with disabilities have had relatively limited instruction in this area.

Interventions using expository text demonstrated large effect sizes, an encouraging result considering the reading demands required in the content areas at the secondary level. Also noteworthy is that interventions, when implemented by classroom teachers, had high effect sizes. This evidence suggests that educators can conduct interventions with efficacy, something necessary for sustainability. Further, this demystifies the notion that teachers cannot implement intervention research without confounding it (Woodward, 1993).

In comparing the comprehension effects of studies included in my meta-analyses, the highest effects were derived from studies that taught summarization strategies (Jitendra et al., 2000). Enthusiasm should be tempered, though, when considering that this study employed only research-based measurements, as did the majority of the studies

in the meta-analysis. Investigations into the effects of theme identification were also extraordinary high (William et al., 1994; Wilder & Williams, 2001), although, again, only research-based measurements were used. Snider (1989) demonstrated that building students' prior knowledge and vocabulary made for significant gains in overall comprehension. While an analysis of Bos and Anders' (1989) study revealed large effects when teaching semantic and syntactic mapping with junior high students, a refined study by Bos et al. (1990) confirmed high effects, this time with high school students. Abrahamsen and Shelton (1989) tested the semantic and syntactic effects on reading comprehension of content area materials and found as did Bos and Anders (1989), that intervention with semantic features alone did not improve comprehension. Consequently, semantic and syntactic intervention components when combined yielded high effects.

Peer tutoring was incorporated in studies by Fuchs et al. (1999) and Mastropieri et al. (2001), but results were mixed. Participants in the study by Fuchs and colleagues were from remedial general education classes and resource rooms, while the population Mastropieri and associates investigated were all enrolled in resource special education English classes. Those in the general education setting may have tempered the results because their learning gaps may not have been as extensive as those in the other study.

Interventions involving the use of visual organizers (Darch & Gersten, 1986; DiCecco & Gleason, 2002) showed moderate to high effect sizes suggesting that these graphic displays assist students in organizing information from text. While measures by Darch and Gersten (1986) indicated that participants' use of these organizers transferred to gains in comprehension and recall, the effects were much smaller in the latter study.

DESCRIPTIVE FINDINGS

A review of the descriptive nature of the studies included in this synthesis reveals several important distinctions to keep in mind when making practical decisions about the use of intervention research in classroom settings. First, sample sizes were relatively small, and small sample size equates to less precision of the estimated population. Another factor to consider is that the number of intervention sessions and the intensity varied greatly, if reported at all, so generalizations involving these two areas are improbable. Both effect sizes for high school interventions and middle school were large; however, middle school effect sizes were higher. While older adolescents with LD can make gains in reading ability, their gains may be smaller for a variety of reasons, one being that the gap in their reading is bigger by the time they get to 9th through 12th grade if earlier intervention hasn't been implemented or appropriate for these struggling readers' instructional needs. Lastly, the majority of these reading interventions were implemented in special education settings. Although many of the practices described may be promising for use in more inclusive settings, generalization to those settings should not be made.

PERSPECTIVE FROM PRACTITIONERS AND STAKEHOLDERS

In response to questions on intervention practices and research related to those practices, focus group respondents were often off topic. This would suggest less understanding of reading instruction and intervention. They confused the teaching of literature and helping students build a love of reading with providing a reading intervention. Participants also equated reading interventions with particular programs. While participants were aware that these programs had some research base, they were not

concerned with the research. Respondents had little autonomy in choosing what interventions to use or for which students selected programs were most appropriate, so they continued to muddle through implementation with little support, professional development, appropriate time to deliver the intervention, and, in some cases, materials.

The educators interviewed indicated that they were familiar with some research-based practices (small group instruction, direct instruction, strategy instruction, use of graphic organizers and computer-assisted reading instruction). Nevertheless, the research-based intervention practices they actually implemented and what research recommends bare little resemblance. Participants' responses centered on systemic issues that exist in secondary settings. Student scheduling issues and the amount of time students spend in the intervention/program can influence the effectiveness of the program, according to participants. Their responses indicated that they had control over neither. Good classroom management was cited as an important factor in the success of reading and intervention, while class size was indicated as a reason that interventions cannot be carried out successfully within their classes.

One particularly troubling finding is that intervention programs were described as replacements for special education reading classes in all of the respondents' schools. Educators with specialized knowledge and skills in planning and carrying out intervention for those with LD were being replaced by general education teachers who were being provided with minimum training in these programs (as little as one hour) with virtually no support or additional professional development. While participants indicated an open-ness to research-based findings, they did not generally seek these findings on their own, but rather relied on their districts, curriculum specialists, teachers down the

hall and the Internet to provide knowledge. They indicated that educators seek practical knowledge and that researchers do not provide it. They added that research is "boring and hard to understand."

Comparisons Within and Among the Data Sources

Each synthesis within this study contains relevant information that can inform future reading intervention research design and influence current intervention practices. Findings considered in totality create a much more realistic portrait of intervention in the secondary schools than either could do independently. For instance, the data-based synthesis captures intervention in the form of single strategies, skills, and components, sometimes combined but often taught in isolation within small groups or one-on-one, usually in a specialized setting (resource, self-contained). Respondents tell a very different story about the nature of intervention practices in secondary schools. Interventions, according to focus group participants, largely consist of prepackaged programs that address a variety of reading components (decoding, word study, fluency, comprehension), but not always in a manner sufficient to meet the needs of the learner. Further, educators feel little power over decisions involving altering or rejecting intervention programs, nor are they vested to mandated intervention programs or research, so fidelity is of little concern. Interestingly, they state that district and curriculum officials espouse fidelity of implementation to interventions. These same officials reportedly make contradictory decisions involving fidelity of implementation (increasing class sizes beyond program guidelines; inappropriate placements of students for non-reading-related reasons—i.e., behavior; inappropriate assignment of teachers to role of interventionists).

Overall, effect sizes reported in the synthesis were quite large, indicating the effectiveness of such interventions as utilizing graphic organizers or direct teaching of reading skills. However, the majority of the studies that targeted adolescents with LD took place within specialized settings (resource, self-contained). Focus group participants described district decisions to replace specialized instruction specific to individual student education plans with prepackaged programs implemented within the general education classroom by interventionists who are provided with minimal professional development.

While the analysis of the effects of computer-assisted reading interventions were mixed, respondents described the influx of computer-based reading programs being purchased and implemented as school wide interventions for all struggling readers (low achievers, ELLs, LD). Further, teachers are moving into the role of interventionist with unrealistic expectations, often promoted by district officials and program publishers. One respondent's description of a disappointed educator, overwhelmed with trying to implement his computer-assisted reading program, "He really was sold on the idea that this program was going to run itself."

The knowledge from the data-based synthesis also reveals a large quantity of research involving expository text in the content areas with high effect sizes. Given the weight of secondary content area reading requirements, it is unsettling to hear from respondents that reading strategies and skills are taught only in reading classes ("They won't get them anywhere else." "They're there to study literature and English, you know, what's the theme, blah, blah, blah.").

Middle and high school educators require the skills to meet the needs of struggling readers with LD. They also need working knowledge of effective intervention practices and support to implement them effectively. Research can and should play a key role in practitioners' instructional choices and behaviors just as researchers should consider the real word applications and constraints faced by educators when designing reading interventions as well as the ongoing professional development needs of practitioners. Although federal efforts began to turn toward adolescent struggling readers in 2003-04 prompted by NCLB (Striving Readers Initiative, Adolescent Literacy Research Network), much of the initial focus is on the development and demonstration of research-based practices. While this is worthy, educators and interventionists in the field need assistance now in how to recognize research-based practices and how to implement the research-based practices that are in place.

One conclusion that may be drawn from my data-based synthesis is that the research world has identified what to do to narrow the reading gap of adolescents with LD. Why, then does the gap persist? The analysis of the multivocal synthesis is telling. While researchers seemingly have the answers, those answers have not found their way to classrooms in a meaningful, practical fashion that educators can connect with or want to connect with ("It's boring." "Explain it to us."). Although those participating in this research were quick to realize the potential value for student recipients (primary consumers) of research-based reading interventions (pass TAKS, comprehend in content area courses, learn to like reading), the same was not true for them under the current conditions under which they implemented interventions. Educators interviewed, as secondary consumers of reading intervention practices and research, reported little

confidence in practices that they were not fully informed about or trained in, practices that were seen as "the homemaking teacher or any warm body can be hired to do."

Extracted from the data-based synthesis is the knowledge of how to narrow the gap in reading, which is critical. Knowledge alone is not sufficient. Researchers must reflect on the voices of the respondents that indicate the need for active support and for collaboration. The opportunity exists to build practitioners' knowledge and skills so they can choose appropriate reading interventions based on reliable and valid research, adequately assess these practices, and apply them. The knowledge gained from this synthesis, if acted on by researchers and practitioners, will aid in the efficacy and sustainability of reading interventions in secondary schools, so to actually close the gap, but only if educators and other stakeholders actively take part.

UTILITY AND LIMITATIONS

Anticipated outcomes. The result of my syntheses is to facilitate efforts to connect reading intervention research to practice in the secondary schools so as to improve overall implementation of reading interventions for adolescents with LD. Through such research efforts and dissemination of results, it is my hope to help educators see themselves as agents capable of utilizing knowledge from research-based practices and to lessen educators' suspicion of research-based practices and the researchers who generate them. The time has come for researchers to stop lamenting the lack of research-based interventions utilized and to start attempting to effect change by empowering practitioners with appropriate, meaningful knowledge and skills.

Limitations of the research. The use of secondary research is only as good as the primary research available. Although there has been an emphasis since the late 1990s on

standardized reporting of data, older research is inconsistent at best with the type of data reported, making it likely that many of these articles were excluded from a data-based synthesis because they did not meet the inclusion criteria. In spite of efforts to include all articles meeting inclusion criteria, several studies may have been left out if not identified through the database or hand search. Additionally, only published studies were included and published studies can be positively biased [also known as the the "file-drawer problem" which arises from the tendency for researchers to publish experimental results that have a positive results, while not publishing findings where the results are negative or inconclusive] (Swanson, 1999).

Data gathered qualitatively is not done smoothly and neatly. It is fragile work in which relationships must be created and sustained. Therefore, this research is not quick and easy, nor does it avail itself to a large number of participants. The focus group interview requires participants to reflect on their practices, which may prove to be painful for those who uncover deficits in their teaching methods and perhaps even beliefs about particular types of students. Generalization of these results is limited by the very personal nature of the focus group interview. Credibility of both participant findings and interpretations depends upon careful attention to establishing trustworthiness. Sufficient engagement in the research and continued alertness to participant biases as well as ongoing member checks increase credibility.

Finally, the focus groups conducted were made of very small groups all from one district which may represent only a limited view of reading intervention as related to the particular type of district and students that focus group respondents are familiar with. Findings therefore cannot be generalized.

EXPECTED OUTCOMES AND IMPLICATIONS FOR THE FIELD

Information from focus group respondents in relation to their familiarity and knowledge of the research, combined with their reported uses of research, present factors worthy of consideration before any future research design commences. Respondents' feelings of being overwhelmed and undervalued as they struggle to meet the reading needs of adolescents with LD and other struggling students within the secondary school system are captured and analyzed to provide a bigger, broader picture of secondary reading intervention research than can not be captured through extant empirically driven data alone.

This research is expected to renew educators' and researchers' efforts for improving reading intervention practices for struggling adolescents during a time of increased accountability mandates for a wide variety of learners, including those with LD; to improve practitioners' intervention behaviors; and to improve intervention practices themselves while making them more feasible for interventionists to implement within the constraints of the secondary environment. While there are systemic problems in middle and high schools that are not faced at the elementary level (class credit, required courses), educators can and should take responsibility for acquiring and utilizing knowledge and skills of research-based practices. Building the capacity of secondary educators in the area of reading should be a goal at the state and district level if no child truly is to be left behind.

Table 1. Intervention Characteristics

Study	**Study Design**	**Number of Participants**	**Grade**	**Duration**	**Person Imple-menting**	**Type of Intervention**
1. Abrahamsen & Shelton (1989) *Random assignment* *Treatment fidelity: NR*	Treatment-Comparison	92 (LD)	7th-9th	NR (NR)	NR	Comprehension
2. Bhat, Griffin, & Sindelar (2003) *Treatment fidelity: NR*	Treatment-Comparison	40 (LD)	6th-8th	18 sessions (3 days/week, 2 lessons/day)	Teacher	Word Study
3. Bos & Anders (1990) *Random assignment* *Treatment fidelity: NR*	Treatment-Comparison (Multiple Treatment)	61 (LD)	NR (Junior high; mean	8 (7 weeks; 50-minute sessions)	Researchers	Multi-component (vocabulary, comprehension)

Study	Study Design	Number of Participants	Grade	Duration	Person Imple-menting	Type of Intervention
			age-13.8)			
4. Bos, Anders, Filip, & Jaffe (1989) *Treatment fidelity: NR*	Treatment-Comparison (Multiple Treatment)	(50 LD)	NR (High school; mean age 16-2)	2 sessions (115 min. over a 2 day period)	Teacher-researchers	Multi-component (comprehension, content learning)
5. Darch & Gersten (1986) *Random assignment* *Treatment fidelity: NR*	Treatment-Comparison (Multiple Treatment)	17 (LD)	NR (High school)	9 sessions (50 min. sessions)	Teacher-researcher	Comprehension

Study	**Study Design**	**Number of Participants**	**Grade**	**Duration**	**Person Imple-menting**	**Type of Intervention**
6. DiCecco & Gleason (2002) *Random assignment* *Treatment fidelity: Yes*	Treatment/Comparison (Multiple Treatment)	24 (LD)	6th -8th	20 sessions (daily x 4 wks; 40 min.)	Researcher & teacher	Comprehension
7. Fuchs. Fuchs, & Kazdan (1999) *Quasi-experimental* *Treatment fidelity: Yes*	Treatment-Comparison	102 (74 LD, plus 22 struggling readers, 4 with MMR , 2 with other disability)	9th	40 sessions (5 x every 2 weeks for 16 weeks; 30-60 minute sessions)	Teacher	Multi-component (Comprehension & fluency)
8. Gajria & Salvia	Treatment-	30 (LD)	6th-9th	NR	Researcher	Comprehension

Study	Study Design	Number of Participants	Grade	Duration	Person Imple-menting	Type of Intervention
(1992) *Random assignment* *Treatment fidelity: NR*	Comparison			(6.5 to 11 hours; 35-40 minute sessions)		
9. Hasselbring & Goin (2004) *Treatment Fidelity: NR*	Treatment-Comparison	125 (RD & struggling readers)	6^{th}-8^{th}	NR (daily; 30 min.)	NR	Multi-component (Comprehension, word study)
10. Jitendra, Hoppes, & Xin (2000) *Random assignment* *Treatment fidelity: Yes*	Treatment-Comparison	33 (LD & BD)	6^{th}-8^{th}	15 sessions (daily x 15 days; 30-40 min.)	Researcher	Comprehension

Study	Study Design	Number of Participants	Grade	Duration	Person Imple-menting	Type of Intervention
11. Kennedy & Backman(1993) *Quasi-experimental* *Treatment fidelity: NR*	Treatment-Comparison	20 (LD)	NR (11-17 yrs.)	30 sessions (3-50 min. periods per day for 6 weeks)	Teacher and Consultant	Multi-component (Phonological Awareness, phonics)
12. Klingner & Vaughn (1996) *Random assignment* *Treatment fidelity: NR*	Treatment-Comparison (Multiple treatments)	26 (LD/ESL)	7^{th}-8^{th}	27 sessions (daily; 35-40 min.)	Researcher	Comprehension
13. Mastropieri, Scruggs, Mohler, Berabek, Spencer, Boon	Treatment-Comparison	24 (LD & MR)	7^{th}	25 sessions (daily x 5 weeks; 50	Teacher	Multi-component (Comprehension

Study	Study Design	Number of Participants	Grade	Duration	Person Imple-menting	Type of Intervention
& Talbott (2001) *Quasi-experimental* *Treatment fidelity: Yes*				min.)		and fluency)
14. Snider (1989) *Treatment fidelity: NR*	Treatment/Comparison	26 (LD)	NR (Junior high mean age 14 yrs.)	13 sessions (50 min. daily)	Researcher	Comprehension
15. Wilder & Williams (2001) *Quasi-experimental*	Treatment/Comparison (Multiple treatments)	91 (LD)	6^{th}-8^{th}	NR (3x week; 45 min.)	Teacher	Comprehension

Study	Study Design	Number of Participants	Grade	Duration	Person Imple-menting	Type of Intervention
Treatment fidelity: Yes						
16. Williams, Brown, Silverstein, & deCani (1994) *Random assignment* *Treatment fidelity: Yes*	Treatment/Comparison (Multiple treatments)	93 (LD)	7th-8th	NR (4 weeks; 40 min.)	Teacher	Comprehension
17. Bryant, Vaughn, Linan-Thompson, Ugel, Hamff & Hougen (2000) *Treatment fidelity: NR*	Single Group	14 (LD with a specific RD)	6th	NR (4 months, 90 min.)	Teacher	Multi-component (word identification, fluency, comprehension)

Study	Study Design	Number of Participants	Grade	Duration	Person Imple-menting	Type of Intervention
18. Farmer, Klein & Bryson (1992) *Treatment fidelity: NR*	Single Group	14 (RD)	NR (13-18 yrs.)	21 sessions (3 x per week for 7 weeks; 25-30 minute sessions totally 7-10 hours of instruction)	Researcher	Multi-component (fluency, comprehension)
19. MacArthur & Haynes (1995) *Treatment fidelity: NR*	Single Group	10 (LD)	9^{th}-10^{th}	2 sessions	Researchers	Comprehension
20. Mercer, Campbell,	Single Group	49 (LD)	6^{th}-8^{th}	NR	Teacher	Fluency

Study	Study Design	Number of Participants	Grade	Duration	Person Imple-menting	Type of Intervention
Miller, Mercer & Lane (2000) *Treatment fidelity: NR*				(daily; 5-6 min.)		
21. Clark, Deshler, Schumaker, Alley & Warner (1984) *Treatment fidelity: NR*	Single Subject	6 (LD)	8th, 9th, & 11th	NR (5-7 hours)	Teacher	Comprehension
22. Freeland, Skinner, Jackson, McDaniel, & Smith (2000)	Single Subject	3 (LD)	7th-8th, 11th	NR (daily)	Researcher	Fluency
23. Gardhill & Jitendra (1999)	Single Subject	6 (LD)	6th & 8th	NR (14-20 weeks,	NR	Comprehension

Study	Study Design	Number of Participants	Grade	Duration	Person Imple-menting	Type of Intervention
Treatment fidelity: NR				40-50 min.)		
24. Lauterbach & Bender (1995) *Treatment fidelity: NR*	Single Subject	3 (LD, MMR)	9th	NR	Teacher	Comprehension
25. Rose & Sherry (1984) *Treatment fidelity: NR*	Single Subject	4 (LD)	8th-9th	36-40	NR	Fluency
26. Rosenberg (1986) *Treatment fidelity: NR*	Single Subject	4 (LD)	NR (Middle school age 13-14.3	NR	Teacher	Fluency

Study	Study Design	Number of Participants	Grade	Duration	Person Imple-menting	Type of Intervention
			yrs)			
27. Swanson, Kozleski & Stegink (1987) *Treatment fidelity: NR*	Single Subject	2 (LD)	NR (High school, 15 yrs.)	14 sessions (40 min, 4x weekly)	Teacher	Comprehension
28. Thorpe, Lamb, Nash & Chiang (1981) *Treatment fidelity: Yes*	Single Subject	3 (LD)	9^{th}-10^{th}	16 sessions (4 days baseline, 12 days experiment) 40 minutes	Teacher	Fluency
29. Vallecorsa &	Single Subject	3 (LD)	7^{th}	6 sessions	Teacher	Comprehension

Study	Study Design	Number of Participants	Grade	Duration	Person Imple-menting	Type of Intervention
deBettencourt (1997) *Treatment fidelity: NR*				(30 min.)		
30. Valleley & Shriver (2003) *Treatment fidelity: NR*	Single Subject	4 (LD)	9^{th}-10^{th}	30 sessions (3x week for 10 weeks; 20 min.)	Researcher	Fluency

Notes:

* indicates the number of minutes per sessions

ESL = English as a Second Language

MR = Mental Retardation

MMR = Mild Mental Retardation

NR = Not Reported

Study	Study Design	Number of Participants	Grade	Duration	Person Imple-menting	Type of Intervention

LD = Learning Disabled

RD = Reading Disability

BD = Behaviorally Disordered

Table 2. Outcomes by intervention type and design

Intervention	Measure	Findings/results
Comprehension: Treatment/Comparison		
Abrahmsen & Shelton (1989) • *T1 (Syntactic modifications).* Text modified from passive to active (*n* = 23). • *T2 (Semantic modifications).* Multi-meaning words reduced (*n* = 23). • *T3 (Syntactic and semantic modifications).* Text modified from passive to active and multi-meaning words reduced (*n* = 23). • C *(no modification to text)* (*n* = 23).	Reading comprehension test (8 factual, 1 inference, 1 vocabulary)	*T1 vs. C* ES = 1.27 *T2 vs. C* ES = .16 *T3 vs. C* ES= 2.24
Darch & Gersten (1986) • *T1 (Basal pre-reading activities):* Improve comprehension through developing student interest and motivation; connect relevance of the passage to students' past experience; offer a	Multiple choice content Knowledge test (per unit) Unit 1 Unit 2	*T1 vs. T2* ES = -.77 ES = -.65

general introductory discussion (*n* = 12). • *T2 (Advanced organizer):* A text outline designed to help student's process text information (*n* = 12).	Unit 3 Multiple choice content post-test	ES = -1.20 *T1 vs. T2* ES = -1.72
DiCecco & Gleason (2002) • *T (Graphic organizers)*: Direct instruction using a graphic organizer of concept relationships (*n* = 12). • *C (No graphic organizer):* Instruction in the same content using guided discussions and note-taking (*n* = 12).	Multiple choice content knowledge test Fact recall Number of relational knowledge statements essays	*T vs. C* ES = .5 (*ns*) *T vs. C* ES = .08 (*ns)* *T vs. C* ES = 1.68 ($p < .01$)
Gajria & Salvia (1992) • *T (Summarization strategy):* Five rules of summarization taught to students with LD in resource classes (*n* = 15). • *C (s):* School' typical reading instruction provided to students with LD in resource classes *(n* =15).	Gates MacGinitie Reading Comprehension Subtest (*standardized)* Multiple choice comprehension of	*T vs. C* ES = -.45 *T vs. C* ES = 5.98

	expository passages	
	5 condensation questions	*T vs. C*
	5 factual questions	ES = 2.68
Jitendra, Hoppes, & Xin (2000) • *T (Main idea)*: Main idea strategy instruction using prompt cards and self-monitoring (*n* = 18). • *C (Current practices)*: School's typical reading instruction (*n* = 15).	Main idea: trained passages (identification/production of main idea statements)	*T vs. C* ES =2.23*
	Main idea: near transfer (similar narrative passages)	*T vs. C* ES = 2.23*
	Main idea: far transfer (expository passages)	*T vs. C* ES = 2.57*
Klingner & Vaughn (1996) • *T1 (Reciprocal teaching + tutoring):* Reciprocal teaching plus peer tutoring on comprehension strategies (*n* = 13). • *T2 (Reciprocal teaching + cooperative learning):* Reciprocal teaching	Gates MacGinitie Reading Comprehension Subtest (*standardized)*	*T1 vs. T2* ES = -1.42*
	Passage comprehension	*T1 vs. T2*

plus strategy practice in cooperative learning groups (*n* = 13).	test (% correct)	ES = .35*
Snider (1989)	Test of passage	*T vs. C*
• *T (Direct teaching of informational and vocabulary concepts.* Adapted worksheets from *Reading Mastery III* and *IV* were used to teach present information and vocabulary orally; apply as a group; and provide individual written practice of the newly acquired information (*n*= 13).	comprehension (1 multiple choice question for each of the 24 lessons)	ES = 1.40
• *C (Current practices)*: School's typical reading instruction (*n* = 13).		
Wilder & Williams (2001)	Transfer: Story details in	*T1 vs. T2*
• *T1 (Theme identification)*: Scaffolded instruction that included a pre-reading discussion, reading the story, post-reading discussions guided by organizing questions, identifying the story theme and relating the theme to real-life experiences (*n* = 47).	novel text (# recalled)	ES = .41 (ns)
	Transfer: Story	*T1 vs. T2*
• *T2 (Story comprehension)*: Comprehension instruction emphasizing vocabulary and plot through teacher-generated questions and	components in novel text (main ideas)	ES = .59 (ns)
	Theme Concepts	*T1 vs. T2*

discussion (*n* = 44).	(understanding explicitly taught themes)	ES = 1.68 (p<.05)
	Theme identification	*T1 vs. T2* *ES = 5.93 (p<.01)*
	Theme application	*T1 vs. T2* *ES = 1.74 (p < .01)*
	Vocabulary definitions	*T1 vs. T2* ES = -.25
	Using vocabulary in sentences	*T1 vs. T2* ES = -.55
Williams et al. (1994) • *T1 (Themes instruction)*: Scaffolded instruction in prereading discussion, reading the story, participating in discussions guided by organizing questions, identifying the story theme and relating that theme to real-life experiences (*n* = 53).	Theme Concept (understanding explicitly taught theme)	*T1 v. T2* ES = 1.41 (*p* < .001)
	Theme identification	*T1 vs. T2* ES = 2.08* (*p* < .001) *T1 v. T2*

• *T2 (Basal reading instruction)*: Instruction on the same content using a basal reader series adapted to the structure of prereading discussion, vocabulary development, story reading and postreading discussion (*n* = 40).	Theme application	ES = 2.95*
Comprehension: Single Group		
MacArthur & Haynes (1995)	Short answer and matching comprehension test	$T_{enhanced}$ *vs.* T_{basic} ES = .88 (not converted) ($p < .05$)
• *T (SALT: Student Assistance for Learning from Text):* Hypermedia versions of textbooks that provided either *basic* word recognition/decoding and vocabulary support or an *enhanced* version with additional support (question windows, glossary, teacher comments, and speech synthesis) for comprehending expository text (*n* = 10).		

Comprehension: Single Subject

Clark et al. (1984)

PND%

			Baseline		Post-test	
			w/ prompt	*w/o prompt*	*w/ prompt*	*w/o prompt*
• *T1 (Visual imagery strategy followed by self-questioning)*: Required students to read a passage and to create visual images representative of the content of the passage, then participants were taught to form questions as they read to maintain interest and enhance recall (*n* =4).	Visual Imagery	Students 1-4				
		Ability Level	45	32	69	61
		Grade Level	42	55	82	67
• T2 (Self-questioning strategy followed by visual imagery): Participants were taught to form questions as they read to maintain interest and enhance recall, then students to read a passage and to create visual images representative of the content (n= 2)	Self Question	Students 5-6	Baseline		Post Test	
		Ability	53		90	
		Grade level	46		90	

Gardhill & Jitendra (1999)

- *T (Advanced story map construction)*: Explicit instruction in story grammar elements; phases included model, lead, and independent practice (*n* = 6).

Lauterbach & Bender (1995)

- *T (Read, ask and paraphrase strategy)*: Students taught to read the paragraph, identify the main idea and two details, and rewrite them in their own words (n = 3).

Swanson et al. (1987)

- *T1 (Baseline)*: Students recalled main ideas after listening to text on tape and taking notes (*n* = 2).
- *T2 (Cognitive training-strategy instruction and use of visual organizer)*: Students recalled main ideas after listening to text on tape and taking notes using a mapping organizer (*n* = 2)[nonstratigic, visual imagery, access long term memory,

M1: Story retell

M2: Basal comprehension test

	PND%	
	M1	M2
Marvin	100	63
Mark	100	25
Chad	100	25
Mitch	100	13
Tara	100	88
Jack	100	100

Paraphrasing (% correct)

	PND%
A	91
B	92
C	100

Multiple choice comprehension test (7^{th}, 8^{th} and 9^{th} grade leveled materials

	7th	8th	9^{th}
A	33	0	33
B	100	100	100
C	0	0	0

% of idea units recalled

% of strategy verbalizations per unit recalled

% of facts correctly recalled on the transfer (comprehension)

Student	PND %
	Unit recall
Greg	80
Julie	22
	Comp
Greg	22
Julie	20

advanced organization, rehearsal, novel encoding strategies employed also reported by students and recorded]	task		
Vallecorsa & deBettencourt (1997) • *T (Story mapping)*: Explicit instruction in 8 story elements (definitions and multiple examples) and depicting story elements on a story map (*n* = 3).	Retell (# of story elements included in retell)	Student David Jason Nick	PND % 67 100 83
Fluency: Single Group			
Mercer et al. (2000) ▪ *T1 (Great Leaps Reading Program):* Instruction in sight phrases and oral reading with graphing of oral reading fluency for 19-25 months (*n* = 11). ▪ *T2:* T1 for 10-18 months (*n* = 19). ▪ *T3:* T1 for 6-9 months (*n* = 19).	CBM of oral reading fluency	*T1* ES = .37[b] *T2* ES = .13 *T3* ES = .24	

Fluency: Single Subject

Freeland et al. (2000)

- *T (Repeated reading):* Repeated oral passage reading (two reads) with error correction by the teacher (*n* = 3).
- *Baseline (Silent reading):* Silent passage reading (two reads) (*n* = 3).

(Note: PND calculated as the percent non-overlapping data between the baseline and treatment instructional conditions for each student)

CBM – comprehension questions

CBM—fluency rate

		PND%
Jason		71
Bill		29
Chris		86
Jason		14
Bill		57
Chris		57

Rose & Sherry (1984)

- *T1 (Baseline):* Participant read passage without previewing (*n* =5).
- *T2 (Silent reading previewing procedure)*: Participant reads silently the assigned reading passage prior to reading it aloud (*n* = 5).
- *T3 (Listening previewing procedure)*: Teacher reads the

S (silent) WCPM

L (listening)

WCPM

	PND%	
	S	L
S1	42	100
S2	75	100
S3	100	100
S4	15	77
S5	100	92

assigned text aloud with the student following along silently prior to the student reading the passage aloud (*n =5).*

Rosenberg (1986)

- *T1 (Word supply condition-WS)*: As participant made an error, the teacher supplied the correct word and required the participant to repeat it (*n* = 4).
- *T2 (Drill condition).* As participant made an error, the teacher supplied the correct word and required the participant to repeat it. Error words were presented to participant at the end of oral reading and participant was asked to identify each error word. Drill continued until all error words were read correctly from deck of cards without an error for 2 consecutive presentations (*n* = 4).
- T3 (*Phonetic drill rehearsal*): As participant made an error,

Error words		PND%	
		P1	P2
correct in isolation	S1	70	10
	S2	0	0
-Phase 1 (WS vs.	S3	0	0
	S4	0	0
Drill)			
-Phase 2 (Drill vs. DR)			
		P1	P2
WCPM	S1	80	100
-Phase 1 (WS vs.	S2	100	80
	S3	80	30
Drill)	S4	90	80
-Phase 2 (Drill vs. DR			

the teacher supplied the correct word and required the participant to repeat it. Phonetic elements were focused on. Teacher presented error words on cards, first sounding it out, then, sounding it out together with participant. Then, word was sounded out silently, before being read in a whisper by participant. Finally, participant read word on card silently, then out loud at a normal speed. This procedure continued until all cards were read 2 consecutive times with no errors (n = 4).

Thorpe et. al (1981)

- *T 1(Visual-auditory instruction [VA])*: When presented with words, participants were directed to say the isolated vowels or vowel combinations; say all the phonemes in a

	Words read correctly	PND%
S1	-with VA	100
S2		100
S3	-with VAKT	100

left to right sequence; look and say the phonemes rapidly; look and say the word fast; say the sounds in the word 5 times, and then, say the word fast. (*n* = 2).	Words spelled correctly -with VA	S1 S2 S3	8 63 0
• *T2 (Visual-auditory-kinesthetic-tactile instruction [VAKT]*: (*n* = 2). Participants were instructed to mark and say the isolated vowels or vowel combinations; underline and say simultaneously all the phonemes in a left to right sequence; look and say the phonemes; underline and say the word fast; use index finger to write the word on the desk 5 times and say the sounds simultaneously; and underline and say the word fast (*n* = 2).	-with VAKT		

Valleley & Shriver (2003) • *T (Repeated readings): Engage* in repeated readings in which the student rereads the same passage until he/she exhibits three consecutive fluency improvements	Comprehension Questions (# correct, n= 10) Oral reading fluency	S1 S2 S3 S1 S2 S3	6-10 4-10 6-10 PND% 12 24 17
Word Study: Treatment/Comparison			
Bhat et al. (2003) • *T (Great Leaps Reading Program +phonemic awareness)*: Phonological and phonemic awareness lessons from Great Leaps reading program supplemented with additional phonemic awareness activities including phoneme blending, segmenting, reversal and substitutions (*n* = 20). • *C (Current practices)*: School's typical reading instruction (*n* = 20).	CTOPP[e] WRMT-Word identification	*T vs. C* ES = 1.59* (*p < .001)* *T vs. C* ES = .15* (*ns*)	
Multi-component: Treatment/Comparison			

Bos & Anders (1990) ▪ *T1 (Definition instruction activity)*: Directly teaching vocabulary ter*m*s from the content area text with an emphasis on oral recitation; correct and automatic pronunciation; and memorization of precise definitions (*n* = 11). ▪ *T2 (Semantic mapping strategies)*: Construction of a hierarchical relationship map from the vocabulary list on which important ideas of the passage are listed across the top and related vocabulary is listed down the side *(n* = 19). ▪ *T3 (Semantic feature analysis condition)*: Predictions were made about the relationships among concepts using a relationship matrix on which important ideas of the passage are listed across the top and related vocabulary is listed down the side (*n* = 17).	Multiple choice comprehension post-test	*T1 v. T2* ES = -1.33 *T1 vs. T3* ES = -.44 *T1 vs. T4* ES = -1.18 *T2 v. T3* ES -.34 *T2 vs. T4* ES = -.08 *T3 vs. T4* ES = .21
	Multiple choice vocabulary post-test	*T1 vs. T2* ES = -1.27 *T1 vs. T3*

▪ *T4 (Semantic/syntactic feature analysis condition)*: Predictions were made about the relationships among concepts using a relationship matrix and participant predicted the answers for cloze-type sentences using the matrix as a guide (*n* = 14).		ES = -1.03
		T1 vs. T4
		ES = -.64
		T2 vs. T3
		ES = -.04
		T2 vs. T4
		ES = .67
		T3 vs. T4
		ES = .54
	Written recall	*T1 vs. T2*
	post-test	ES = -23
		T1 vs. T3
		ES = .24
		T1 vs. T4
		ES = -.07

		T2 vs. T3
		ES = .63
		T2 vs. T4
		ES = .23
		T3 vs. T4
		ES = -.47
	Scriptal	*T1 vs. T2*
	knowledge recall	ES = -.17
	post-test	*T1 vs. T3*
		ES = .21
		T1 vs. T4
		ES = .01
		T2 vs. T3
		ES = .53

		T2 vs. T4 ES = -24 *T3 vs. T4* ES = -.32
Bos et al. (1989) ▪ *T1 (Semantic feature analysis condition)*: Predictions were made about the relationships among concepts using a relationship matrix on which important ideas of the passage are listed across the top and related vocabulary is listed down the side (*n* = 25). ▪ *T2 (Dictionary method/typical instruction)*: Participants used the dictionary to write definitions of words supplied on their vocabulary list. Teacher first read the words, then students repeated. Finally students used a dictionary to write a definition and sentence using the word as it related to their social studies content (*n* = 11).	Multiple choice comprehension test: vocabulary Multiple choice conceptual knowledge items	*T1 vs. T2* ES = .96 *T1 vs. T2* ES = .70

Fuchs, Fuchs, & Kazdan (1999) ▪ *T (Peer-assisted learning strategies: PALS):* Partner reading, paragraph shrinking, and prediction relay implemented using a dyadic structure (*n* = 52; LD *n* = 35). ▪ *C (Current practices):* School's typical reading instruction with no peer-mediated learning activities (*n* = 50; LD *n* = 39).	Comprehensive Reading Assessment Battery: Oral reading fluency (*standardized)* Comprehensive Reading Assessment Battery: Comprehension questions (*standardized)*	*T vs. C* ES = .05 *T vs. C* ES = .31
Hasselbring & Goin (2004) • *T (Computer-based literacy instruction)*: Instruction in	SDRT[d]: Comprehension	*T vs. C* ES = 1.0*

Peabody Literacy Lab: Reading Lab with videos to support students in building mental models from text; Word Lab with practice reading words on timed tasks; Spelling Lab with practice typing a word that is pronounced, broken into parts and used in a sentence plus additional spelling fluency practice (*n* = 63). • *C (Current practices):* School's typical reading instruction (*n* = 62).	*(standardized)* SDRT: Auditory Vocabulary (*standardized)* SDRT Phonetic analysis (*standardized)* SDRT Structural Analysis (*standardized)*	*T vs. C* ES = .75* *T vs. C* ES = .23* *T vs. C* ES = .44*
Kennedy (1993) • *T (Remedial typical reading and spelling instruction plus Lindamood auditory discrimination in depth program):* Taught through individual tutorial sessions with spelling taught through a combination of a phonetic approach based	LAC[f] -Sept. -Dec. -May *(Standardized)*	*T vs. C* ES = -.59 ES = 1.43 ES = 1.53

on learning patterns, principles, and rules; sight words and common sequences; and word families and homonyms. Plus, Lindamood reading and spelling multisensory approach to develop phonological awareness. Questioning techniques are used to stimulate awareness of motor feedback from articulatory movements. Blocks are used to represent syllables, which in turn helps make the connection between sounds and orthographic symbols (*n* = 10).	SORT[g] -Sept. -Dec. -May *(Standardized)*	*T vs. C* ES = -.26 ES = -.13 ES = .13
	SAT-Sp[h] -Sept. -Dec. -May *(Standardized)*	*T vs. C* ES = -.33 ES = -.08 ES = .57
• *C (Typical remedial instruction)*: Taught through individual tutorial sessions with spelling taught through a combination of a phonetic approach based on learning patterns, principles, and rules; sight words and common sequences; and word families and homonyms (*n* = 10).	GORT[i] -Sept. -May *(Standardized)*	*T vs. C* ES = -.18 ES = -.28
Mastropieri et al. (2001)	Open-ended	*T vs. C*

• *T (Peer Tutoring Condition):* Partner reading with error correction, passage summarization (Get the Gist), and questioning strategies for during and after reading implemented using same-age peer tutoring sessions (*n* = 12). • *C (Current practices)*: School's typical reading instruction (*n* = 12).	comprehension test	ES=1.18 (*p* < .05)
Multi-Component: Single Group		
Bryant et al. (2000) • *T (Collaborative Strategic Reading +word reading strategy and fluency):* Instruction in the four main components of CSR—predicting, word learning strategies (e.g., using context clues), finding the main idea, and summarizing—plus a word identification strategy (DISSECT) and structured partner reading (*n* = 14).	Word Identification Test of Oral Reading Fluency (*Standardized)*	*T* ES = .64 (uncoverted) (*p* < .05) *T* ES = .67 (p<.05)

	Jamestown Timed Reading Passage Comprehension Questions (# correct)	*T* ES = .22
Farmer et al. (1992) • *T (Computer-assisted reading program with synthesized whole word reading)*: Computer-synthesized speech was used in a reading program to improve word recognition and comprehension. Synthesized speech was programmed for use with half of the stories read with even on/odd off (*n* = 14).	Comprehension test	*T* ES = .07
	Word recognition test	*T* ES = .16

a. All measures are researcher developed unless indicated by a parenthetical note (e.g., *standardized)*

b. Repeated measures effect size converted to the metric of Cohen's *d*

c. WRMT = Woodcock Reading Mastery Test; WRMT-R = Woodcock Reading Mastery Test – Revised

d. SDRT = Stanford Diagnostic Reading Test

e. CTOPP = Comprehensive Test of Phonological Processing

f. LAC = Lindamood Auditory Conceptualization Test

g. SORT = Slosson Oral Reading Test

h. SAT-Sp = Stanford Achievement Test -Spelling

i. GORT = Gray Oral Reading Test

* Effect size adjusted for pre-test differences

Table 3. Focus Group Participant Characteristics

Background	**Teachers**	**Instructional Specialists**
Highest degree held		
Bachelor's	4	
Master	1	1
Areas of Certification		
Elementary		1
Secondary	4	1
Special Education	3	
Other specializations (ESL, MRT*)	3	2
University teacher education	2	
Alternative teacher education		1
Years of teaching experience		
1-5	1	
6-10	1	2
11-15	1	
16-20	1	
Secondary Setting		
Middle school	2	1
High school	2	1
Instructional Setting		
English-language arts	1	
Reading elective	2	
Inclusion	1	
Other		2
Self-reported ethnicity		
Mexican American		1
Hispanic/White	1	1
White	3	
Age		
24-29	1	1
30-39	1	1
40-49	1	
50+	1	

*MRT = Master Reading teacher

Table 4. Focus Group Participant Reading Professional Development

Reading related intervention training/professional development attended in last 2 years as reported by participants	**Provider**	**Teachers**	**Instructional Specialists**
Read 180	Publisher/Vendor	3	1
SRA-Master Level reading course	Publisher/Vendor	1	
SRA Corrective Reading	Publisher/Vendor		2
Jim Burke's workshop	District	1	
Literacy Institute	Education Service Center, Region XIII	1	1
Anita Archer vocabulary specific training	Education Service Center, Region XIII	1	1
Study Group *What to do When Kid's Can't Read*	English/LA department	1	
Special education *Reading Recovery*	District	1	
Struggling Reader's Institute	University	2	
Reader's workshop	District	1	
TAKS reading workshops	District		1
Fluency training	Publisher/Vendor	1	1
NCATE*	District	1	1
Kylene Beers	District	1	
*SIPPS***	District	1	

*NCATE = National Council for Accreditation of Teacher Education
**SIPPS = *Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words* by John Shefelbine and Katherine K. Newman

Table 5. Descriptive Characteristics of Studies

Element	Number
Studies conducted in a special education setting	24
Content area reading intervention	8
Researcher implemented	11
Teacher implemented	17
Research and teacher implemented	1
Number of participants	2-125
Sessions	2-40

Table 6. Type of intervention by study design

	Study Design			
Intervention Type	Treatment-comparison	Single group	Single subject	Marginal totals
Comprehension	9	1	5	*15*
Fluency	0	1	5	*6*
Word study	1	0	0	*1*
Multi-component	6	2	0	*8*
Marginal totals	*16*	*4*	*10*	*30*

Table 7. Quality of treatment/comparison studies

Element	Number of studies
Random assignment to conditions	10
Fidelity of treatment reported	8
Standardized dependent measures	6
Random assignment, treatment fidelity, and standardized measures	0

Table 8. Average weighted effects by intervention and measurement type

Intervention Type	Effect Size (95% Confidence Interval)
Multi-component (n = 5)	.94 (.26, 1.62)
Measurement Type	
Standard measures (*n* = 2)	.67 (.29, 1.05)
Researcher-developed (*n* = 3)	1.09 (.29, 1.67)
Comprehension (*n* = 8)	1.81 (.92, 2.92)
Measurement Type	
Researcher-developed (*n* = 8)	1.81 (.92, 2.92)

Appendix A: Studies Selected for Synthesis

Abrahamsen, E. P., & Shelton, K. C. (1989). Reading comprehension in adolescents with learning disabilities: Semantic and syntactic effects. *Journal of Learning Disabilities, 22(*9), 569-572.

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Appendix B: Studies Disqualified from Synthesis

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Appendix C: Code Sheet

Study Information
Coder:
1. Author:

2. Year:

3. Who funded the study? (p. _____)
   - ❑ U.S. Department of Education
   - ❑ School District
   - ❑ University
   - ❑ National Institute of Health
   - ❑ Foundation
   - ❑ State Funded
   - ❑ Other
   - ❑ Not reported/do not know

Participant Information
4. SES: (p.)
   - ❑ lower
   - ❑ middle-upper; upper
   - ❑ other

5. Are criteria stated for classifying students with disabilities? (p.)
   - ❑ Yes
   - ❑ No

6. Risk Type: (Mark all that apply; (p.)
   - ❑ Learning Disability
   - ❑ Reading Disability –not LD
   - ❑ Dyslexia
   - ❑ Reading Difficulty/Struggling Reader
   - ❑ Speech Language Disability/Disorder
   - ❑ Low Achievers
   - ❑ Other

7. Gender (number of each): (p._____)
_____ Males
_____ Females
   - ❑ Not reported

8. Ethnicity (p._____)
   - ❑ European American
   - ❑ African American
   - ❑ Hispanic American
   - ❑ American Indian
   - ❑ Pacific Islander
   - ❑ Other

9. Age or grades of subjects as described in text: (p._____)

10. Risk Type of subjects as described in text: (p. _)

Design Information

11. Research Design:
   - ❑ Treatment/Comparison
   - ❑ Treatment group (s)
   - ❑ Single Subject (Describe type) _____

12. Assignment/selection of students for intervention: (p._____)
   - ❑ Random
   - ❑ Matched/paired
   - ❑ Other
   - ❑ Not reported/do not know

13. Is a fidelity of treatment check reported? (p. _____)
   - ❑ Yes-
   - ❑ No

14. Are pretest scores on any measure reported? (p.____)
   - ❑ Yes (reported in text_____: reported in table_____)
   - ❑ No

15. Criteria provided for selection of participants: (p._____)

Conditions

	Condition 1	**Condition 2**	**Condition 3**
16. Condition name			
17. Condition Number (ex. T1 and C1)			
18. Age (p.)			
19. Grade (p.)			
20. Site of Intervention –School			

(p.)			
21. Role of Person Implementing the intervention -General Ed T -Special Ed T -Counselor -Speech/Language Therapist -Reading Specialist -Parent -Researcher -Uncertified paraprofessional -Other specialist -Other (p. _____)			
22. Length of each session (in minutes) (p.)			
23. Duration of intervention (time between first and last session), in weeks (p.)			
24. Total number of sessions (p.)			
25. Frequency of sessions (p. _____)			

Clarity of Causal Inference (Are treatment and comparison groups comparable?) (only for multiple group studies)
For studies using random assignment

26. Was there differential attrition between intervention and comparison groups?
- ❑ Yes
- ❑ No

Comments: _____
_____

27. Sample size of intervention group at start of study: (p. ____)
Group 1: Group 2: _____ Group 3_____

28. Sample size of intervention group for the analysis of the outcome measure(s): (p. _____)

Group 1_____ Group 2_____ Group 3_____

29. Sample size of comparison group at start of study: (p. ____)
Group 1_____ Group 2_____ Group 3_____

30. Sample size of comparison group for the analysis of the outcome measure(s): (p. __)
Group 1_____ Group 2_____ Group 3_____

31. Is there evidence groups experience attrition for different reasons?
- ❑ Yes
- ❑ No

Comments:_____
_____

For Quasi-Experimental Designs

32. Did they equate?
- ❑ Yes
- ❑ No

33. What did they do to equate?_____
_____

34. When was equating of groups done? (p. ____)

35. Were equating procedures adequate?
- ❑ Yes
- ❑ No

36. Was there differential attrition between intervention and comparison groups after equating occurred?
- ❑ Yes
- ❑ No
- ❑ N/A

37. Sample size of intervention group at start of study: (p. ____)
Group 1: Group 2: Group 3_____

38. Sample size of intervention group for the analysis of the outcome measure(s): (p. ___)
Group 1_____ Group 2_____ Group 3_____

39. Sample size of comparison group at start of study: (p. ____)
Group 1_____ Group 2_____ Group 3_____

40. Sample size of comparison group for the analysis of the outcome measure(s): (p. ___)
Group 1_____ Group 2_____ Group 3_____

41. Is there evidence groups experience attrition for different reasons?
- ❑ Yes
- ❑ No

Comments:_____
_____

Clarity of Causal Inference (Lack of Contamination) (For all studies)

42. Was there evidence of a local history event?
- ❑ Yes
- ❑ No

43. Were the intervention and comparison groups drawn from the same local pool? (Answer no if no comparison group!)
- ❑ Yes
- ❑ No

If yes, did study participants, providers, data collectors, and/or other authorities (e.g., parents, teachers, case managers) in either the intervention or comparison group, know who was in which condition?
- ❑ Yes
- ❑ No

44. Did the description of the study give any other indication of the plausibility of intervention contaminants?
- ❑ Yes
- ❑ No

Comments:_____

45. Is there evidence that the data was collected by independent data collectors?
- ❑ Yes
- ❑ No

46. Are the measures:
- ❑ Standardized
- ❑ Researcher developed
- ❑ Intervention specific (If teaching spelling and you teach 5 words and then measure on those words)

47. Impressionistic quality of study:
- ❑ High
- ❑ Low

General Findings

48. Did the study measure the outcomes at a time appropriate for capturing the intervention's effect? (within 2 weeks of the conclusion of the intervention)

- ❑ Yes
- ❑ No

49. **Precision of Outcome: Effect Size Estimation** (Were the effect sizes accurately estimated?)

- ❑ Yes
- ❑ No
- ❑ Not reported

Precision of Outcome: Statistical Reporting (Were the statistical tests adequately reported?)

50. Was the assumption of independence met? (p. ____) (observations not paired, dependent, correlated, or associated in any way)

- ❑ Yes
- ❑ No
- ❑ Not reported

51. Was the assumption of normality met? (p. ____) (degree of aymmetry or skewness; kurtosis)

- ❑ Yes
- ❑ No
- ❑ Not reported

52. Was the assumption of equal variance met? (p. ____)(homogeneity of variance: homoscedasticity for bivariate distributions: Hartley's Fmax, Cochran test, Bartlett test, Levene test, Brown-Forsythe)

- ❑ Yes
- ❑ No
- ❑ Not reported

53. Were the sample sizes adequate to provide sufficiently precise estimates of effect sizes?

- ❑ Yes
- ❑ No

Comments:_____

_____

54. **Precision of outcome:** Statistical reporting (Were the statistical tests adequately reported?)

55. Were the sample sizes reported (or estimable) from statistical information present?
- ❑ Yes
- ❑ No

56. Could directions of effects be identified for important measure outcomes?
- ❑ Yes
- ❑ No

57. Could effect sizes be estimated for important measured outcomes?
- ❑ Yes
- ❑ No

If yes, could estimates of effect sizes be computed using a standard formula or its algebraic equivalent?
- ❑ Yes
- ❑ No

58. **Description of treatment as provided in text:** (p.)

59. Commercial or research-based title of intervention (p.___)

60. Nature of Intervention (comprehension, fluency, vocab, etc.)

61. Intervention specific to language arts/reading or content area classroom?

62. Data Collection:

Who collected the data?
- ❑ Researcher
- ❑ Teachers
- ❑ Other
- ❑ Not Specified

63. How long after the intervention were the outcome data collected?
_____weeks
_____ not reported

64. What methods were used to control for order effects or other measurement contaminants? (ex.- counterbalancing)

_____
_____

Effect Size #	Measure Type	Measure Name	Min Score	Max Score	Researcher-designed (y/n)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Measure Type:
1 – Decoding
2 – Comprehension
3-Vocab
4-Fluency

Single Subject Studies

Study Name	Measure used	Descriptive data type (proportion, percentage, raw score)	Data reported	Comments

ES #	PG #	Group 1	Group 2	G1 Mean	G1 SD	G1 (n)	G2 Mean	G2 SD	G2 (n)	Comp Code	P value and alpha level	Comments

Computation Code

1- Unadjusted posttest means and SD's
2- Adjusted posttest means and SD's
3- F-test on unadjusted scores
4- F-test on adjusted scores
5- T-test
6- Nonsignificant p value
7- Chi-square
8- Other test value
9- Percentile scores
10- Z-score

Adapted from Kim, A., Vaughn, S.,Wanzek, J., & Wei, S.(2004); Vaughn, S., Kim, A., Sloan, C. V. M., Hughes, M. T., Elbaum, B., & Sridhar, D. (2003).

Appendix D: Multivocal Interview Protocol

A. Introductions

B. Interventions as related to teaching and learning

C. Intervention issues and why interviewees care about them

D. Research Questions:

1. How do professionals who provide instruction for secondary students with LD perceive secondary reading interventions?

   a. What reading interventions are professionals familiar with?

   b. What reading interventions do professionals report using?

   c. What do professionals report as being barriers/facilitators to implementing reading interventions?

   d. What factors influence the selection, rejection, or alteration of a reading intervention?

   e. What are the differences between the empirical evidence and professionals' perceptions of effective reading interventions?

   f. What differentiates most and least effective secondary reading interventions for students with LD?

Appendix E: Informed Consent to Participate in Research

IRB# 2005-06-0072

The University of Texas at Austin

You are being asked to participate in a research study. This form provides you with information about the study. The Principal Investigator (the person in charge of this research) or his/her representative will provide you with a copy of this form to keep for your reference, and will also describe this study to you and answer all of your questions. Please read the information below and ask questions about anything you don't understand before deciding whether or not to take part. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled.

Title of Research Study:
Reading Intervention Research for Secondary Students with Learning Disabilities: A Synthesis of Treatment Outcomes

Principal Investigator(s) (include faculty sponsor), UT affiliation, and Telephone Number(s):
Colleen Klein, M.Ed., doctoral candidate, Department of Special Education (512) 232-6034
Audrey McCray Sorrells, Ph.D., Advisor, Department of Special Education (512) 471-4161
Sharon Vaughn, Ph.D., Advisor, Department of Special Education (512) 232-2322

Funding source:
Not applicable

What is the purpose of this study?
The purpose of this study is to synthesize findings from the research studies that examined effects of reading interventions on reading performance for secondary students (grades 5-12) with learning disabilities (LD), as well information collected through focus groups interviews of reading professionals in the secondary schools concerning their use and perceptions of effective reading interventions, and to analyze the differences that exist between research findings and actual intervention practices.

Between 15-18 teaching professionals will be sought for inclusion in the focus group interview.

What will be done if you take part in this research study?

Participants will take part in a 2-hour focus group interview where they will be asked to share their experiences with and perceptions of secondary reading interventions for secondary students with LD. Additionally, participants will be asked to review focus group transcripts for accuracy.

The consent form will be explained and given to each participant prior to the commencement of our focus group. I will explain that participants are under no obligation to join the group and are free to withdraw participation at any time. Once the consent forms are signed, I will provide a copy to each participant.

Three separate focus groups will be conducted between **November 2005 and April 2006.** Participants are asked to take part in only one of the three scheduled focus groups. Refreshments will be provided along with a $50 stipend per participant in the intial focus group interview with a brief follow up required.

The focus group interview of approximately two hours will be audio-taped, transcribed, and then analyzed using open coding. This qualitative data gathering method will focus on participants' verbatim responses (Patton, 1990). This will be explained to participants before the first meeting in the form of a consent letter and will be reviewed prior to the initiation of the focus group interview.

Once the initial coding is completed, then axial coding will be used to organize the data into themes, which will be derived by connecting each category to its subcategories (Strauss & Corbin, 1990). As support for these themes, original quotes from participants will be used.

To increase trustworthiness, transcripts of interviews will be shared with participants. Member checks will be performed and participants will be asked to review transcripts and make changes as appropriate to accurately capture their feelings and beliefs. After coding and analyzing the data, participants will be asked to reconvene to further interpret the analysis and generate additional data. The inclusion of all participants in the data gathering and interpretation phases of research strengthens trustworthiness and validity.

What are the possible discomforts and risks?

There are no known risks in this research study. If you wish to discuss the information above or any other risks you may experience, you may ask questions or call the Principal Investigator listed on the front of this form.

What are the possible benefits to you or to others?

The benefits include making a contribution to research, which can enhance reading intervention practices and student success.

If you choose to take part in this study, will it cost you anything?

There is no cost for participants.

Will you receive compensation for your participation in this study?

Participants will review a $50 stipend for participation in one focus group interview.

What if you are injured because of the study?

The study involves no physical risk.

If you do not want to take part in this study, what other options are available to you?

Your participation in this study is entirely voluntary. You are free to refuse to be in the study, and your refusal will not influence current or future relationships with The University of Texas at or any other organization.

How can you withdraw from this research study and who should you call if you have questions?

If you wish to stop your participation in this research study for any reason, you should contact: Colleen Klein at (512) 232-6034. You are free to withdraw your consent and stop participation in this research study at any time without penalty or loss of benefits for which you may be entitled. Throughout the study, the researcher will notify you of new information that may become available and that might affect your decision to remain in the study.

In addition, if you have questions about your rights as a research participant, or if you have complaints, concerns, or questions about the research, please contact Clarke A. Burnham, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (512) 232-4383. You may also contact the Office of Research Compliance and Support at (512) 471-8871.

How will your privacy and the confidentiality of your research records be protected?
If in the unlikely event it becomes necessary for the Institutional Review Board to review your research records, then the University of Texas at Austin will protect the confidentiality of those records to the extent permitted by law. Your research records will not be released without your consent unless required by law or a court order. The data resulting from your participation may be made available to other researchers in the future for research purposes not detailed within this consent form. In these cases, the data will contain no identifying information that could associate you with it, or with your participation in any study.

"(a) interviews will be audio-taped; (b) then the cassettes will be coded so that no personally identifying information is visible on them; (c) they will be kept in a secure place (e.g., a locked file cabinet in the investigator's office); (d) they will be heard only for research purposes by the investigator and his or her associates; and (e) they will be erased after they are transcribed or coded.

If the results of this research are published or presented at scientific meetings, your identity will not be disclosed."

Will the researchers benefit from your participation in this study?

The researcher will not benefit from your participation in this study beyond publishing or presenting the results.

Signatures:

As a representative of this study, I have explained the purpose, the procedures, the benefits, and the risks that are involved in this research study:

Colleen Klein November 2, 2005

Signature and printed name of person obtaining consent **Date**

You have been informed about this study's purpose, procedures, possible benefits and risks, and you have received a copy of this form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights.

_____

Printed Name of Subject **Date**

_____

Signature of Subject **Date**

_____

Signature of Principal Investigator **Date**

Appendix F: Participant Information

IRB# 2005-06-0072

Focus Group Interview Participant Information
Colleen Klein, Researcher

Note to Participants: All identifying information will be kept confidential. Information gathered will be used for descriptive purposes only.

Name _____ Date _____

Address_____

Email_____

Phone_____

Age_____ Gender_____ Ethnicity_____

1.	Total # of years teaching experience	
2.	Total # of years teaching secondary reading/LA	
3.	Current position	
4.	# of years in current position	
5.	Current position in general /special education	
6.	Certification(s) held	
7.	Teacher training: university or alternative cert?	
8.	Highest level of education: bachelor's, master's, Ph.D,	
9.	List types of reading related intervention attended in the last 2 years (university courses, professional development, workshops, program specific training)	

Appendix G: Reading Interventions for Students with LD Interview Coding Sheet

Interview Questions	Themes	Quotes
1. How do professionals who provide instruction for secondary students with LD perceive secondary reading interventions?	*Familiarity/Usage*	*Participant 1:* Ok, well currently, at the school where I work, we use, um, **SRA Corrective Reading**, which is a pretty well known scripted intervention program. And we're also implementing, um, **Read-180** from the scholastic company and in addition to that we are working on **regrouping strategies** so that the teachers are able to have a flexible plan to work with struggling readers within their own classrooms, um using guided reading practices.

We're also in the middle of purchasing the **Weaver's K-12, um, reading intervention**, and um, **"My Reading Coach"** and both of those are computer-based interventions that will be used in a tutorial setting after school.

Participant 2:
Well, it's interesting, I could almost say, "ditto," to that because we did use, however we're not using the **SRA Corrective Reading** this year. But, that was my experience prior to this year. We did a pilot program of **Read-180**, which seems to address some of those things, um, within the same classroom having different levels, having students rotate and they almost seem comfortable doing, we call 'em centers, that, starting in the small group where the teacher can address the special needs do a certain level, and then they go to the computers, and then, um, another group is reading. So we're doing **Read-180, and no longer SRA…**

Participant 1:
Guided reading practices, such as, um, having **leveled groups**, and then going through with **short stories**, I used a lot of short stories 'cause we were **able to read 'em multiple times** for various skilled intervention. And then, um, at [school], I also taught one class of **SRA Corrective Reading**. I have not personally **used Read-180, though I have gone to training, and I work with the teachers,**

Participant 2:
That's, that's pretty much what I do, too. Um, I've, I've, um, done the training [**SRA Corrective Reading** and **Read 180**].

Like Read-180 that's mandatory this year, **our training was one hour**. There's no way that you know what Read-180 is in one hour, unless you take the initiative to research it yourself. I mean, they're showin' us slides, its proven that this works, but that's not enough for most teachers

Participant 3:
SIPPS **[**Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words by John Shefelbine and Katherine K. Newman.

Weaver Online.

Participants 3-6:
Read 180, My Reading Coach.

Participant 4:
We're using that ***Reading Coach***. I'm not using it, but another reading teacher is using it. Um, I've done a lot with ***SIPPS*** and then there's, the, the **audiocassette books that go with those *New Heights.***

Knowledge/information

Participant 2:
I get mine on the **Internet**, uh, **e-mail**, I get e-mail that says, "We're having a seminar on, whatever," and sometimes I go, sometimes I don't. And then, there are times when my, uh, **chairperson or curriculum specialist** says, "you must go to this." And that's how I do it.

Participant 1:

The programs I mentioned have all been purchased for our school **by the districts**, so, I kind of, I did my investigation into those programs after they were already purchased, so it was kind of backwards

I've done a lot of reading of **Patricia Cunnigham's** work, and then I also, um, went through the **Master Reading Teacher** Institute, um, several summers ago now, probably 4 summers ago, and I learned a lot of strategies through that. And

so, when it's just straight strategy, I would say that I try to keep abreast of current literature, but when we're talking about actual programs, those have been purchased by the district**.**

Participant 2:
And I guess that's the same [as participant's] response, that is **from the district**].

Participant 4:
It would be a combination, I mean, because the **district is pushing it,** so they're bringing in stuff all the time it seems like. The **instructional specialist** too is always brining in stuff, so from both my looking for it and the district bringing it in.

Participant 5:
A book, um, the **Kylene Beers** Book, um, we use that (our whole department uses that) and I've also gone to some studies with her, um, so, again, there's a lot out there, you know. And then my higher kids do ***Weaver***.

The *When Kids Can't Read* book **from the department**.
I would say a lot of things **I just like to search out on my own**, and, and, find out you need help from every angle you can find it.

Participant 3:
I would say as an **instructional specialist**, the district is very clear on what they want you to do, and um, um, that there is a, there's a certain expectation of what you're, you are using in your class, in, you know, in your program and with your classrooms. Of course there's choice, and we work, we work together with the **district**, but, I mean, there is an expectation of what is, what should be using, and if it's not being used there's questioning to why it's not.

Barriers

Script only as good as the teacher

- implement ation
- teacher buy-in
- inappropri ate training

Placement doesn't

Participant 6:
I think at the, the high school level, I also think because there's no curriculum for reading that **we are having to seek a lot of it on our own**, when there's not a program that they want us to use. I remember the first year that I taught, you know, I was drug into these reading classes, which I wanted to do, but, I was pullin' stuff from everywhere because it was my first year to teach, and there is no curriculum, and there was no guidelines.

Participant 2:
I think that a scripted, uh, lesson plan is good, because at least you know its gonna happen, but, I've also seen too many times, a scripted **thing will work with one teacher**, and they're great at it and they're snappin' (makes snapping sounds with fingers) and the kids are into it. And then, there are **teachers who read it, like a sermon, and the kids are going sleep.**

I believe it is **implementation**. And, and, uh, does a **teacher buy it**?

Participant 6:
That's kind of a barrier **not to have the actual program** yet, but I know it's coming, um…

Right, it didn't, **it wasn't mapped out real clearly** probably, but we're working with it.

Participant 3:

You know, I would say one more thing, that just made me think: **teacher buy-in.** Because I think that there's so many, again, teachers have so many programs that are required of them. Um, if there's not teacher buy-in, its not gonna work.

And **that's that district**, "we need *Read 180*, here, we're gonna fund this, here

meet student's needs

Lack of administrative support

Scheduling

Materials

were gonna get you this stuff." So it just, but then, you know, this is happening during the course of the year, it wasn't, it wasn't…

So it is, there is the expectation that we're doing it, but we're doing it **mid-year, which does not necessarily make for a smooth transition.**

Participant 4:
And uh, let them [teachers] teach, **focus**, on one area,

Participant 5:
Getting kids **tested and placing** them correctly, I think that's a huge barrier.

Participant 4:
Yeah, the **matching kid to the program** is a barrier I had

Getting support from the administration, um, you know, it goes one way or the other, either they're very supportive of a reading program at the high school level or they're not supportive at all and they think it's a waste of time, you know?

Participant 2:
And a lot of teachers who love teaching literature and reading, they're now given this canned program, and **they're saying, "this works" without the teacher really believing it.**

I wish that all our lessons were scripted by a **fabulous teacher**, and that could address all the needs of all the kids, at risk populations, and **that everybody would love it and do it well. But I don't think its possible.**

[On being assigned to replace the interventionist, "That's where the curriculum specialist told me, that's where the problem originates because they [other

teachers] **don't have that foundation in reading.**

Participant 1:
Even though there are, there is the perception that anybody can just stand up there and do it, it really **is still teacher dependent**. Even with the script, and that was what I found over the 2 years of working with it where **every teacher had to teach it.**
I had started off at the high school level, and what I realized is that, um, so many of the kids in high school, um, were behind in reading. Like, as far as grade-level appropriateness, and so, I sought training to intervene, and to try to help that problem, correct that problem, and **what I found really, is that most of the reading training as far as like acquisition of reading skills is offered at the elementary level.**

With the purchase of these various programs, that's the training that the secondary teachers are now given, and it's called **"reading training," even though there still is not the, um, the training that's involved if you were to, um, teach in an elementary school where they teach you various phases** of, of **learning how to read**. And so, I think that's a barrier because, I think what's happened is that **instead of really looking at the total picture of how one learns to read, we're just trying to introduce various programs**.

Participant 3:
We think **that by presenting a program and providing training in that program we've addressed training people to teach children how to read, and I think that there's a disconnect there.**

I think that **there's not enough done to prepare teachers** to teach programs.

I think that they also need **proper training** just in reading period. Because I, and, for example, we have a teacher this year who's teaching Read-180 who has

no background in reading, and I'm not really sure why he was chosen to teach the class, other than he volunteered maybe, but its been a constant struggle because **he really was sold on the idea that this program was gonna kinda run itself**, and so, he has very ineffective reading groups, he has no whole group instruction. And, um, I'm a, charged with this task of like trying to fix that, but, I have to back up all the way to teaching this person basic skills in the teaching of reading.

Participant 2:
[Describing a student placed in intervention], he was pulled out of his regular reading class, which is a pre-AP. We have only pre-AP and Read-180 in our school right now. And so, he was pulled from there, and put here, not because of his needs, but because of the teachers' needs. [She couldn't handle his behavior.

And I've seen it more than once, **and we have some gifted kids** who are **in** that **Read-180** class who read at higher levels. Which I, you know, its debilitating I think to the child and to the teacher.
Participant 5:
Well, I don't know if it's a barrier, but I **don't actually have the *Read 180* program** yet in my room! Even though, that's the name of my class!

Participant 6:
They're not informed [counselors] and when new kids come in, it is just, because it's considered an elective class, and the PE classes are already all filled up, the choir classes, the band classes "Oh, so let's put you in reading," you know? And that's really not, it is not an elective. It needs to be an elective for the kids who need it to be an elective. But not just to throw them in midway through the year.

Participant 6:
Finding the resources where they're low enough with that high interest is really

hard.

Facilitators

Benefits of "programs"

- heighted awareness
- reading actually being taught
- knowing how to teach reading

Curriculum guides

Participant 1:
When we did have campus wide implementation of SRA, I think that it heightened awareness of what it sounds like when a child truly is struggling to read. And I think that that **opened the eyes of a lot of content area teachers**, who don't necessarily focus on reading ability. I also think that, um, it opens a discussion. So even if you are just implementing a program, you still have more, um, of a base to discuss with the teachers, um, what **some of the problems may be that the child is having as they try to improve their reading.**

Without some of the programs, teachers wouldn't be **aware [of reading difficulties]** at all in some cases.

Participant 2:
Because, being a Special Ed. teacher, I saw what was being taught in the Special Ed. resource classrooms, and it was so far behind, so far from reaching the needs of the students. What I saw was, and this is um, going into classrooms with um, the teaching going on, observing with some of my students, and I saw this **on a day to day basis with over 50% of the teachers that were teaching Special Ed reading, that children were given what they already knew. There was no teaching going on at all. They were given worksheets, and that was a reading-language arts class.** And, so, even if, uh, even if a teacher is not doing Read-180 to its fullest extent, to the best of its possibilities, **it is certainly better than what a lot of the students were receiving as far as the Special Ed kids were concerned, and the SRA as well.**

Participant 1:
There's a teacher who teaches Read-180, and he's great. I mean, its great. Because **he's really, he knows reading**, he has an MRT certification also, and he's really able to get in there with his small groups, and like, teach.

Planning

Variety

Class time

Behavior management

One issue is that people aren't taking enough care to make sure that they have the right people, implementing the programs. Or implementing any intervention… its still all teacher dependent.

Participant 3:
It's kind of the mentality of professional development. Where, you know, teachers, and I felt like this as a classroom teacher as well, you know. **Just let me plan**! You're teaching me this and this and this and this, but I never have time to do any of it because I'm always being taught what I should do.

Participant 1:
We have all this state money for, um, 6th grade interventions for kids who failed TAKS, and that's all gonna be used in after school tutorial programs, however, most of the teachers are so tired, they don't wanna teach after school tutorials. So then **you start ending up with, you know well, you know, the homemaking teacher is willing to come in for two hours after school. So then they're gonna teach reading intervention, you know?** And so, it just starts this whole cycle of you know, well, as long as we have a warm body, and the kid is there for 2 extra hours a day, surely they're gonna be able to improve their reading. And, really, they're not.

I think that, I think that's another issue that I would add. Not only that the **teacher's aware of reading, you know, the phases of reading acquisition**, but, that the **kids are also in the right place**.

Participant 2:
Making sure that **they're in the right class**, and, and I don't know, I think its good in a way that we're doing it by **grade level**.

Well, I suppose it's what our curriculum specialists are saying: **consistency**. You've got to do it the way. If the program research is correct the program works, but in order for it to work it has to be done correctly. And I think a lot of **money is not being spent on training**. And that's, that's the understatement of the year.

Participant 3:
I think they're [**administration**] supportive in concept, but they're not supportive of the work that it truly takes, um, and they don't understand. If, if you're not a reading teacher, you don't understand the differences, um, that are required to run a strong reading program.

Participant 5:
Guides for reading teachers, specifically for the secondary level.

Participant 2:
Prior planning.

Participant 6:
I, I think there has to be um, **change**, I, like as she was saying about the *My Reading Coach*, because they're gonna get so bored on it. There needs to be stations. I know *Read 180* does that where they will be on the computer one day, listening to a station the next day, something like that. I think that there has to be a silent reading component to it, whether it is reading along in a book and listening, or whether it is reading alone by themselves. I think that is crucial.

Time.

Making the big component be: we need the time. Or, make the school districts, that go ahead and buy this program, that say, right from the get-go, say, "Ok,

we're gonna give you that right amount of time."

Participant 4:
The lack **of high interest below read-ability** because there really is a huge gap.

Because the *Read 180* person, representative, did say, like, "well don't expect these results then cause **you're not doing it according to our structure**. [50 minutes vs. 90 minutes]" And then you're like, "**I know, but we're trying**! This is the time we have." So, you know, so it will be interesting to see once it's up and running how that does affect what the results may be.

Participant 5:
Good teacher **management** of the kids cause that will make a huge difference, you know, kids have to be focused.

Participant 4:
And, just having that, **whether if a teacher can handle that** kind of situation, then that's great, but if they can't then program is not gonna work in that classroom.

Influence

- testimonials
- reading

Participant 2:
I would **ask a teacher that's already taught it**. [When asked, a teacher who began implementing the program mid-year] said, "Yeah, it works, it raised their scores." And, and that's why I said ,"Yeah, I'll teach Read-180 next year,"

Participant 1:
I think I would mainly look at the **components of the program** to make sure that they actually **address the needs of the student.**

component s	I think they [components] just really have to be **matched with the needs of the students.** But, um, I just think that the **components need to be varied** as well so that you have room for growth.
• needs of the students	I think that the main thing I look for is that it's actually **compatible with the needs of the campus.** *Participant 3:* What skill level, what's, what they're missing. **Do they have the ability, can they comprehend or are we talking about** um, real basic phonics that they're missing. So we, we did as a department try to figure out which students needed which intervention. I mean, I think **interest level** is real important, and we're finding that with *My Reading Coach* right now, um, the students are, while it seemed like a very good program, the students really not, they're not very interested in it.
Reasons to reject Promising too much/offering too little Doesn't meet students' needs	*Participant 1:* I would want to reject an intervention if it was **too vague**, and/or **complex**. Um, if its over simplified, because **reading is such a complex** skill, that I think that the programs should at least acknowledge that, you know, this is, if its something like SRA decoding, acknowledging that "this only enhances one component of reading acquisition", as opposed to "this will help all your kids learn how to read." *Participant 2:* I think **oversimplification**, saying, "**this is the all be all"** its not.

Alteration

Teacher as professional

Participant 2:
We have kids who were reading at a first grade level and the Read 180 books **didn't go low enough** for some of the kids. The teacher had to bring in Dr. Seuss books for them.

Participant 1:
I think that that's where the **teacher** then is the **professional** and knows what needs to be done within the classroom as opposed to just, you know, saying, "Well, I have to teach the program, cause we were told to teach it this way."

Databased findings

- strategy instruction
- explicit instruction
- extended time
- small group

Participant 1:
Well, I agree with that just based on my own teaching of reading when I taught fifth grade. Because I had a very large group of below level kids in my class and so I had to have like the **very explicit**, you know, let's say spelling patterns or that type of thing as they acquired the language, but then because they were in 5th grade I was very worried about them going on to middle school so I also did a lot of **strategy**, you know, **work with them just so they would be able to help themselves** because I know that there is less support once they go into secondary school than when they are in the elementary setting. And for a lot of my kids, they had been in the bilingual program and this was their first experience in just an English only quote unquote setting, so I feel that both of those components are very important.

Because I think a lot of people buy into the extended time notion without really providing a sound structure. So it's like what I was talking about earlier with the tutorials. **Just because a kid comes to a tutorial doesn't mean that anything is going to happen.**

instruction

- focus on comprehension
- lack of vocabulary and word study
- CAI instruction

But, I don't know. I don't know what the answer is to tutorials. I don't think it's effective at this point. It's the same at our school. We have a lot of money for after school program and I don't think it's, well I can speak for math. **We've had after school math academies for three years now, and our scores are just as low as they've ever been. So, you know, I don't think it would be any different in reading.**

Participant 5:
By doing **direct instruction and giving them strategies to use it's amazing how much they're comprehending the stories**, so I definitely think that it's a good thing.

Participant 6:
I think it's, right, its crucial because at the secondary level, because **they're not, they're not gonna get that in their core classes**. If they were in an English class, they're not gonna get the reading specific reading strategies that they need because the teacher is trying to move them on in English. Which is why, you know, it's a huge thing, um, I know in the district, that in reading, you need to be teaching reading. It is not an English class. Do not teach English in the reading class. You need to be teaching specific strategies and ways to help these kids tackle a text as opposed to comprehension, and "how can we delve further into the story" and "what is the theme" and "la la la" you know?

Participant 2:
I think that's key. I think teachers have known that for centuries**, that size matters**. And when you give a, when I sit with the kids and have them read to me, rather than modeling. We've got a sixth grade class that's got almost 30 and that Read 180 probably should be at 18. Don't you know?

Participant 4:
Class size is key. I mean teacher/student ratio is essential; you go passed a

certain number, I don't care what you have, it's not gonna work.

Yeah, I mean, you're gonna buy a program like *Read 180*, it specifies that there should be no more than 18 in the class, 6 to a group, and yet you know, here comes an initiative from the district, "Well, go up to 21." **And it makes a difference, you know like you were saying, 6 to 7 to a group is a huge difference.**

Participant 3:
So, you know, if you're gonna bring in something, you **must support it all the way through, like what the research is stating, don't just override it.** Cause, "Oh, what's 3 more kids?" But it's a huge difference

Participant 6:
And now there's this whole switch happening, to where the **reading classes really aren't that small anymore, because we have started to target so many kids that need it.**

Can I say something about that? Last year, when I, I, I did *SIPPS*, as a, um, like they were researching it to see how it was, cause it's just now starting to go out, and, um, I had very small classes. I think my large class was 12. And I still did the groups with them. So when I did my direct instruction, the maximum direct instruction that I did was 4 kids at a time. And so, **of course it worked really well** because, you know, classroom management was okay, because there was only12 in there, you know? And then my direct instruction, I could answer questions of 4 kids as opposed to 25. This year, I tried doing the exact same thing with 25 kids in one classroom, and it bombed. You know? It didn't, I have one group that has 8 kids in it, and you can't spend the time that you need or keep the focus there even when there's only 8 of them, I know it doesn't sound like there's very many, but then you're having to make sure that this group over here is doin' what their supposed to do, that this group is doin' what they're

supposed to do. And so I think it's very crucial to have those smaller numbers.

Participant 2:
Certainly the person who goes in and is working **one-on-one** is going to do better than a teacher who's got too many kids.

Participant 1:
Well, I think comprehension is, um, probably one of the **most crucial components**, because, **once they hit the secondary level, then you're asking them to absorb content area knowledge. And so, as we know, that just gets harder and harder,** and so if you're behind already, then when you're asked to, um, read academic language in lets' say, history or science, then it becomes even more problematic. Because your, everybody's used to a story form, but the when you transfer to non-fiction, it's essential that they have comprehension skills.

Yeah, I think what's interesting actually, is that, and I don't know why, but I think that there's always this, or not always, but often, **the assumption that once a child gets to secondary school, you don't need to worry about those things.** Like, they should know, for example, the basic sight words by then, or they should be able to decipher word, um, by breaking it into parts, you know prefix, you know, root, all that. And I think that that's one of the challenges when you're working in a secondary school that has so many kids that are struggling readers.

Participant 2:
Our school is really pushing on the **word wall**. Like they did in grade school. And we're doing **vocabulary words**.

Participant 3:
I don't think you can, I think that the comprehension needs to be there, but I also think that the other 2 components [vocabulary and word study] have to be there

too.

Participant 5:
For me, **vocabulary is huge** because most of the times for my kids, it's not an issue of whether they can read or not, 'cause I place something in Spanish in front of them and they can zoom through it. But if I place something in English in front of them, you know, it's a whole vocabulary issue.

How can you **comprehend if you don't have the vocabulary**? And if that's what you're gonna study, the comprehension, then the comprehension is obviously going to be low if they don't know what the words mean.

Participant 1:
That's interesting [2 CAI studies in synthesis].. Especially because we're about to have three computer assisted interventions on our campus.

Participant 3:
I would say, **put trust in the teachers** as well. Um, that, again, with high turnover rate in the profession, that maybe **it's easier to purchase a program, but we still, you know, we want well trained teachers that can, can speak to the needs of every specific student. A computer can't do that.**
Participant 4:
So, you know, I think the one's I've seen [CAI] with **using the technology combined with books is in a positive direction.**

Participant 5:
I think **this group of kids** that we have now are, you know, **technology**, technology, technology.

Participant 4:

They're not afraid of the computer…**they wanna interact**.

Yeah, they're being raised with more technology, so **they interface with it quite a bit easier.**

Participant 3:
I think that's about **interest level**, I mean, I don't know that they're getting any sort of better training on the computer except for that it… that, they're interested in that.

And it also allows them to **move on their own, to move at their own pace** opposed to having to wait…

Participant 5:
It **pulls them in**…

Reading/LA experience being diminished

Participant 1:
In our district, Read-180, is an intervention. I mean, its sold as an intervention, however, for some reason, in our district, every year, they add more Read-180 classrooms, and so I guess my concern is that there seems to be this movement towards making that the Language Arts experience of the students. And um, more so in schools where maybe we don't have the highest TAKS scores, I just know that my daughter will be in 6th grade next year, and **I would be very dismayed to find that her Language Arts experience was Read-180.**

Participant 3:
My concern is **some of the ways that we're attempting to fix reading, we're not creating readers, we're not creating, we're, we're almost taking away**

the love of reading. Um, so that's been one of my impressions in terms of all the methods of fixing reading problems.

District program push

Participant 1:
It's very interesting to be in a position where you're trying to work with teachers to deliver the best instruction they can deliver, but yet, **the district is pushing things that I wouldn't consider always be the best** as far as instructional materials.

We [curriculum specialists] were given a menu of items to select, but then, at the same time, when we didn't, like I had not chosen Weaver's, um, for whatever reason, but, then I was sent a letter saying that they really **strongly suggested that I reconsider that decision**. Now, we have Weavers.

I would like for them to represent their product accurately. I don't think that companies need to feel, or developers need to feel that when they are trying to sell a program or endorse a program, I think **there's a tendency to say that it does all these things when really it doesn't**.

Participant 3:
I feel like at least speaking about my district is that there is **this focus on fixing reading problems through programs.** Um, Read-180 you know, what, all, you know also my reading coach. All sorts of programs.

You know, we have to get them to a point where they can succeed on their own once they graduate, and I feel like, **as far as programs go, you know, "try this one, try this one, oh, this is the new thing, why don't you try this!" Whereas its really the kids that we need to focus on instead of paying money for**

another program.

Participant 5:
I think there needs to be a **fine line between a program and then, other things that you're doing to make them love [reading]**, I think that you can integrate it, um, to where you do use a program, but then you have time, that they are able to choose a book that they wanna read.

Participant 6:
I just wish they would stay **consistent** with one. Let us try it, you know, for five years and see, and if its not working at the end of those five years, then lets move on to something else. I think we have too many resources out there and so it's hard.

Perception about being the interventionist

Participant 5:
I would just say that, I'm the, I'm the new Read-180 teacher at, at their school. Um, I think that it is just **overwhelming** when, when, you get all of these kids, and you do see what level they read on you do sort of have this, um, message or something sent to you like, "Ok, you really need to catch them up, they really need to get up to this level!" And it's like, "Woah! Look where they are! I'm not the miracle worker!" You know? Like, it's, it's a big job, they've got, got a long way to go and, uh, I haven't really quite mastered yet how to integrate, I haven't really worked with the program yet, so I'm just doing different things that I've gleaned from different books to get them to love, try to like reading, but it is a little **overwhelming** that distance that they have to, uh, cross to get from 3rd or 4th grade level to hopefully, you know, passing the TAKS test and, um, reading enough to understand what they're being told, tested on. **It's a little overwhelming.**

Participant 6:
Well in the English classes I would imagine also they don't have the district

telling them, **you know, "rigor" and all this stuff, and "blah blah blah." That they don't, that's what I'm supposed to be, I'm the one that's supposed to be catching them up on the reading part, you know, I'm the one who's the "catch-up helper"** so that they can do those further, higher level sorts of things…that's why you're in my class so that I can hopefully help you attack some text that you can go further when you're actually in your literature class.

Participant 5:
And, I think again, it is at the elementary level, reading is expected. But at the secondary level, it's not expected. And it kind of is the, like step child, it's the one that gets pushed. Oh, and I know, when we, when I first started teaching, like, I applied to be a reading teacher at the secondary level but another reading teacher that was there, that's what she got placed at. She wants to teach English, but she got placed at the reading level, and so she feels that reading is always the one that gets second. Like English is first, but reading, and then there was also this perception **that reading teachers are the ones that couldn't hang with the English. They're not the ones who are at the secondary level.**

High school vs. middle school

Participant 3:
In my experience because I've taught high school and middle school, in high school, the focus in English is truly content. Um, where in middle school you are still teaching strategies that are similar to what you're teaching in a reading class. Um, again, I think, **we do push the strategies still, but I don't know that that's always the case in high school.**

Participant 6:
I mean it's obviously a very important thing, it's just not seen as that sometimes because you think in high school, **"they're there to study literature and English…" But reading is the sort of cornerstone of being able to do that**.
Participant 4:
I think that a lot of the times at the high school level that they are **trying to take**

programs that would be used at maybe the Elementary level and turn them around and fix them for the high school kids, and um, I still think they're too low as far as interest levels go. Um, and I think that, I agree with (Respondent 1) where, especially at the high school level, **we can't give them a program only and expect them to succeed outside of high school once they graduate** reading because sure they can do the things that we're asking them to do in the classroom, but once they get outside of the classroom are they able to read?

On being informed by research

Participant 3:
I'm sure that **being informed of the research must play into what you choose to do.**

Participant 3:
Explain the research to us. We are English "word" people, not numbers people.

Participant 5:
Make it user-friendly. Make it **interesting**.

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