BALANCED, STRATEGIC READING INSTRUCTION FOR UPPER-ELEMENTARY AND MIDDLE SCHOOL STUDENTS WITH READING DISABILITIES: A COMPARATIVE STUDY OF TWO APPROACHES

Genevieve Manset-Williamson and Jason M. Nelson

Abstract. **In this study we compared the use of two supplemental balanced and strategic reading interventions that targeted the decoding, fluency, and reading comprehension of upper-elementary and middle school students with reading disabilities (RD). All students had significant delays in decoding, fluency, comprehension, and language processing. Two comparable, intensive tutorial treatments differed only in the degree of explicitness of the comprehension strategy instruction. Overall, there was meaningful progress in students' reading decoding, fluency, and comprehension. Gains in formal measures of word attack and reading fluency after five weeks of intervention translated into grade-equivalent gains of approximately half a school year. Analysis of the trends in the daily informal fluency probes translated into a weekly gain of 1.28 correct words per minute. The more explicit comprehension strategy instruction was more effective than the less explicit treatment. Findings are discussed in light of the question of how to maximize the effects of reading interventions for older children with RD.**

GENEVIEVE MANSET-WILLIAMSON, Ph.D., is associate professor, Department of Curriculum and Instruction, Indiana University.
JASON M. NELSON, M.S., is a doctoral student, Department of School Psychology, Indiana University.

Despite increasing evidence that systematic approaches to teaching phonemic awareness and decoding skills within a "balanced" literacy environment positively affects the reading abilities of primary-grade students, a significant number of students enter the upper-elementary and middle school grades with significant deficits in their ability to read (Chall, 2000; Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1994; Snow, Burns, & Griffin, 1998; Torgesen et al., 2001). Many of these students are subsequently identified for special education services. Specifically, of the approximately 2,887,217 school-age children in the United States who are receiving services for learning disabilities (LD) (U.S. Department of Education, 2002), the majority are identified based on deficits in reading (Lyon et al., 2001; Shaywitz, 2003). Some of these upper-elementary and middle school children are so delayed in reading that they not only have deficient comprehension skills, but also struggle with basic, automatic word identification, decoding, and fluency (Fletcher, Morris, & Lyon, 2003).

Instructing these older children with reading disabilities (RD) in both word identification and comprehension presents unique challenges as well as

opportunities. On the one hand, there is concern that these students have passed the age when reading skills can most easily be gained, and that their reading deficits have become relatively resistant to remediation by the time they reach the upper elementary grades (Francis, Shaywitz, Stuebing, Shaywitz, & Fletcher, 1996; Lyon et al., 2001). There is the additional challenge of overcoming years of inefficient compensatory strategies and discouragement, and in finding text that is age appropriate and yet accessible. On the other hand, older children provide instructors with the opportunity to take advantage of increasing potential in metacognitive and cognitive strategies, and a growing world knowledge. Increased capabilities and knowledge coupled with the depth of their decoding, fluency, and comprehension deficits suggest that meaningful reading interventions for older children with RD will differ in both intensity and quality from those for primary-age students.

In this study we compared the efficacy of two variations of a balanced reading intervention. The treatments were balanced in that they included a compilation of research-based approaches to accelerating gains in decoding, fluency, and comprehension. While both treatments included direct and strategic instruction in phonemic awareness/analysis, decoding, and fluency, they varied in the degree of explicitness in the comprehension strategy instruction used.

Research on Reading Interventions for Students with RD

In isolating elements of reading, the researcher runs the risk of misrepresenting reading to the learner or missing essential instructional features. This is particularly true for students who have deficits in all areas of reading. In this study, we chose to accept the risks inherent in a multidimensional approach and offered a complex and balanced intervention that we deemed as offering the best chance for success for all participants. In doing so, we drew upon the existing research literature in the areas of decoding, fluency, and comprehension interventions for students with RD. This literature is summarized below.

Phonemic awareness/analysis and decoding. It has become evident in recent years that some form of explicit and direct instruction in phonemic awareness/analysis and decoding skills is essential for students at risk for reading failure and those with RD (Chall, 2000; Foorman et al., 1994; Snow et al., 1998; Torgesen et al., 2001; Torgesen & Wagner, 1998). Effective phonemic awareness/analysis interventions tend to incorporate elements of direct instruction, including direct explanation, modeling, guided practice with continual monitoring and feedback, review, and mastery learning.

Most studies have involved intense interventions of up to 50 plus hours, often five times a week, but varying between small group and one-to-one tutorial (Adams & Carnine, 2003). Other interventions, most notably the Orton-Gillingham approach, include multisensory activities, such as voicing a phoneme while tracing (Fernald, 1943; Gillingham & Stillman, 1965). Despite no clear consensus as to why, some evidence suggests multisensory approaches are effective with some children with RD (Thorpe & Borden, 1985). Important differences were found when direct instruction in phonemic awareness/analysis was combined with decoding strategy instruction (Lovett et al., 2000). With decoding strategy instruction, students are taught strategies from which they can choose when they come upon an unknown word. Lovett et al. combined the use of analogous words with other strategies such as peeling off word parts, trying vowel variations, and identifying word parts students already know. These authors compared the combined use of these strategies with direct instruction in phonemic awareness/analysis to instruction in phonemic awareness/ analysis alone. They found superior outcomes when phonemic awareness/analysis was combined with decoding strategy training (Lovett & Steinbach,1997).

Reading fluency. Fluency refers to the reader's degree of speed and accuracy in reading. The greater the degree of automaticity in word recognition and decoding in the context of a passage, the more fluent the reader. An appropriate level of fluency not only allows for the completion of literacy-based tasks in a reasonable time, it is also thought to be related to comprehension. That is, the more fluent the reader, the more cognitive space is allowed for the processing of the meaning of the text (Reynolds, 2000). For this reason, measures of fluency are often used as an index of overall reading growth (Deno, Fuchs, Marston, & Shin, 2001).

Fluency is generally measured by the number of correct words per minute read from a passage (Deno et al., 2001). It is evident from the research that in order for children at risk to improve their reading fluency, they need to practice reading connected text in addition to improving automaticity in word identification and decoding skills (Snow et al., 1998). Guided oral reading, and more specifically passage rereading, has been found to be particularly effective (Rasinski, 1990; Weinstein & Cooke, 1992). One approach to a passage rereading intervention includes students reading a passage alone, reading the same passage again faster with the instructor, and then reading it alone again as fluently as they can. This simple procedure has been shown to significantly increase the fluency of students with RD (Wong, Harris, Graham, & Butler, 2003).

Reading comprehension. Comprehension is reading. Although usually associated with drawing meaning from passages, comprehension occurs at the word, sentence, and passage levels. Students must decode and know the meaning of words in order to comprehend what they read. However, students who can identify words but cannot draw both literal and implicit meaning from sentences and passages are still not reading. A potential danger of focusing heavily and solely on the word level of reading is that children may become relatively fluent word readers without comprehending what they read. That is, they come to believe that decoding is in itself reading. It is this problem that teachers attempt to avoid with the use of a balanced approach to instruction; one that combines decoding and comprehension instruction with ample opportunity for reading and writing whole text. Due, in part, to the difficulties noted earlier in reading instruction for older children with RD, there is a gap in our understanding of how to best teach older children with RD to comprehend what they read.

How Should Strategies Be Taught to Students with RD to Best Improve Their Comprehension?

Students with RD possess inefficient strategies that they use in an inflexible manner (Wong, 1996), are often unaware of the strategies good readers use instinctively (Williams, 2000), and are deficient in the spontaneous use of strategies (Torgesen, 1977). There is general agreement that students with RD need strategy instruction. Thus, two recent reviews of the reading comprehension literature on students with LD have provided strong data suggesting that strategy instruction improves the reading comprehension skills of these students (Gersten, Fuchs, Williams, & Baker, 2001; Mastropieri & Scruggs, 1997). The issue that is not as clear is the level of explicit instruction required for students with RD to maximally benefit their reading comprehension skill. It is this issue that this study was designed to address.

Explicit vs. implicit strategy instruction. Explicit instruction may be conceptualized in at least two ways. On the one hand, explicit instruction involves the overt, teacher-directed instruction of strategies, including direct explanation, modeling, and guided practice in the application of strategies. In addition, explicit strategy instruction may include an overt and systematic transference of the control of strategies from teacher to student. There is a current departure from more explicit forms of strategy instruction to instruction in which students with LD are exposed to a "more natural, constructionist, and less transparent modeling of strategies" (Gersten et al., 2001, p. 308). Duffy (2002) found that the current reading literature leans more toward implicit techniques for instructing students in reading comprehension strategies and focuses minimally on the direct explanation of strategies.

Influential within the debate over explicitness of strategy instruction are Fountas and Pinnell (1996), who have argued that strategies cannot be directly taught. Instead, they propose that teachers provide rich literature experiences for students so that reading strategies can be naturally constructed with teacher support, but not explicit instruction. Beck, McKeown, Sandora, Kucan, and Worthy (1996) disagreed, contending that strategies can be taught, but warned that students' attention may be more focused on the strategies themselves rather than on gaining meaning from the text. According to these authors, therefore, strategy instruction may serve to impede natural construction of meaning from text. They argued that a more fluid discussion of text is likely to produce greater comprehension.

Duffy (2002) characterized Fountas and Pinnell's (1996) approach (guided reading) and similar approaches such as K-W-L (Carr & Ogle, 1987) as based on an underlying assumption that with repeated exposure to teacher use of strategies, students will naturally incorporate the strategies within their own repertoires and begin to use them independently. According to Duffy, this assumption is fundamentally flawed because struggling readers do not necessarily pick up on the subtle cues of supportive guidance and implicit instruction. Instead, Duffy claimed struggling readers benefit from explicit teaching of strategies, the reasoning behind using them, and how they work. Duffy et al. (1987) found that readers who were given direct and intentional teaching of strategies made higher gains in reading than a control group who received traditional instruction. Although both Fountas and Pinnell and Duffy have stated that the ultimate goal for readers is for them to use strategies independently, only Duffy has assumed that struggling readers need explicit instruction to achieve this goal.

Along with directly instructing students in strategies and how they work, instruction may also be explicit with regard to how teacher control of the strategies is transferred to student control. Teachers using explicit procedures for instructing strategies usually begin with direct instruction and explanation of strategy use. The next step is often to provide a teacher model of using the strategy, involving teachers making "visible" to the student their cognitive processes by talking aloud when using the strategy. After these procedures, teacher involvement and control begins to "fade." Students are provided guided practice in using the strategy, with the teacher functioning as a scaffold for the student's newly developing skills. Finally, students completely

take over using the strategy as they gain the ability to use it independently. It should be noted that these procedures for transferring control from teacher to student are not simply direct instruction of strategies but also involve an element of implicit self-regulation given the nature of the cognitive modeling conducted by teachers and the collaborative practice to learn to regulate the strategy (Sawyer, Graham, & Harris, 1992). In fact, Graham and Harris (1989) argued that self-regulation is implicit within all meaningful strategy instruction procedures.

Purpose of Study

This study compared the effects of two balanced and strategic reading interventions on the reading skills of upper-elementary and middle school students with RD. More specifically, we examined (a) whether balanced, systematic and intensive reading instruction results in meaningful effects on the reading skills of older children with RD; and (b) whether a greater degree of explicitness in comprehension strategy instruction leads to relatively higher gains in reading comprehension. Findings are discussed in light of how to best maximize the effects of reading interventions for older children with RD.

METHOD

Participants

Principals from local schools recommended students who they thought would meet the inclusion criteria for participating in the study. These criteria included (a) entering grades 4 to 8; (b) grade equivalent (GE) scores on measures of reading fluency and/or reading comprehension (Reading Fluency and Passage Comprehension subtests from the Woodcock-Johnson Tests of Achievement, 3rd Edition [WJ-3]; Woodcock, McGrew, & Mather, 2001) at least two years below their expected grade-level achievement (based on age), with no students' reading fluency above a 3.5 grade level; (c) standard scores on at least one of the three composites (Phonological Awareness, Phonological Memory, and Rapid Naming) of the Comprehensive Test of Phonological Processing (CTOPP; Wagner, Torgesen, & Rashotte, 1999) at least one standard deviation (*SD*) below the mean; and (d) a standard scores on a brief measure of intellectual functioning (Reynolds Intellectual Screening Test [RIST]; Kamphaus & Reynolds, 2002) above 75.

Students who were formally identified through their schools or by other professionals as having an emotional/behavior disorder, autism spectrum disorder, or severe hearing or vision impairment were excluded from the study. In addition, students for whom English was a second language were excluded. Those identified as having attention deficit hyperactivity disorder (ADHD) were allowed to participate as long as they met the study's inclusion criteria. These students were included due to the high comorbidity rate between RD and ADHD established in the research literature (e.g., Dykman & Ackerman, 1991). Only one participant was formally diagnosed with ADHD.

The final sample consisted of 21 participants ranging in age from 9 to 14 years (M = 11 years, 6 months; SD = 1 year, 5 months). Participants were randomly assigned to the two treatment conditions. One participant dropped out of the study within two weeks of implementation. No explanation was given for failure to complete the intervention.

The sample was confirmed to have significant difficulties with reading and reading-related skills despite average intellectual functioning (see Table 1). Participants' overall reading skills and basic reading skills were severely delayed, translating to mean GE scores of 2.5 and 2.6 on the WJ-3 Broad Reading Cluster and WJ-3 Basic Reading Skills Cluster, respectively. Such GE scores are significantly below the average expected grade placement (based on age) of the sample, which was calculated to be sixth grade. The mean CTOPP scores of the sample also represented significant deficits in phonological awareness, phonological memory, and rapid naming.

Setting

The study took place in a community-based reading clinic located at both an independent school for students with RD and a public elementary school identified as qualifying for Title 1 funding. The reading clinic was the result of a collaborative effort between Indiana University and the private school to provide diagnostic and supplemental reading services to students with RD in the community. Instruction took place in classrooms separated by dividers or in the public school library. Participants who attended the clinic were drawn from the community and were not necessarily students at the two schools.

Tutor Recruitment, Training, and Treatment Fidelity

In total, 11 tutors were hired to implement the treatment conditions. Nine of the tutors were graduate students in various fields of education (seven master's students and two doctoral students). The remaining two tutors consisted of a recently graduated baccalaureate student and an advanced undergraduate student in special education. Nine of the tutors completed an intensive graduate-level course on curricular approaches for students with RD consisting of 30 hours of instruction. The remaining two tutors partially completed the course, attending when instruction was given on spe-

Table 1
Participant Characteristics

Variable	Group: Guided Reading	Group: Explicit Comprehension
N	**11**	**9**
Age (in months)	138 (16.8) [a]	141 (19.7)
RIST [b]	92.3 (3.9)	95 (9.8)
Phonological Awareness [c]	82.3 (14.2)	81.7 (7.7)
Phonological Memory [c]	81.2 (14.6)	80.3 (13.1)
Rapid Naming [c]	79.0 (9.4)	71.7 (16.6)
Broad Reading [c]	73.9 (6.3)	66.9 (12.3)
Broad Reading GE [e]	2.7 (.6)	2.3 (.5)
Basic Reading [d]	80.4 (6.2)	74.1 (12.1)
Basic Reading GE	2.7 (.4)	2.4 (.5)
Gender Ratio	7M/4F	8M/1F
Racial Balance	9 White/2 Black	8 White/1 Black

Note. All test scores are standard scores unless otherwise noted.

[a] All scores in parentheses represent standard deviation. [b] Reynolds Intellectual Screening Test composite score. [c] Comprehensive Test of Phonological Processing composite score. [d] Woodcock Johnson Tests of Achievement, 3rd Edition, composite score. [e] GE = grade equivalent.

cific interventions relevant to the treatment conditions (approximately 10 hours). In addition, tutors were required to attend, in full, 14 hours of direct training on implementation of the treatment conditions. Prior to training, tutors were randomly assigned to the treatment conditions.

During implementation of the treatment conditions, tutors received frequent supervision and feedback. On at least two occasions, one of the principal investigators observed each tutor during live tutoring sessions to monitor fidelity to treatment. Corrective feedback was given after these observations. In addition, weekly staff meetings were held in which tutors were provided group supervision by one of the principal investigators. Treatment fidelity checklists created to monitor whether the treatment conditions were implemented as designed were completed daily by tutors and during observation sessions by investigators. Tutors perceived themselves as adhering to the treatment procedures approximately 97% of the time. The investigators observed the tutors as adhering to the treatment protocol approximately 93% of the time in both conditions. No significant differences between treatment conditions with regard to treatment fidelity were found.

Testing Materials and Procedures

To evaluate the reading skills targeted by the treatment conditions, we used a variety of measures that were closely tied to the interventions (training measures) and some that were tests of near and far transfer. Additionally, a semi-structured interview was created to evaluate the social validity of the interventions. All measures were administered individually to each participant by either their tutors, graduate students in school psychology, or the principal investigators. For all occasions on which the WJ-3 was used as an indicator for the dependent variables, Form A was used during pretesting and Form B was used during posttesting.

Data reported below on the internal consistency and test-retest reliability of the WJ-3 subtests were taken from the technical manual of the instrument (McGrew & Woodcock, 2001), which provides evidence of concurrent validity for the overall reading composite of the WJ-3. During test development the correlations between the Broad Reading Cluster of the WJ-3 and the reading composites of the Kaufman Test of Educational Achievement and Wechsler Individual Achievement Test were found to be .76 and .67, respectively.

Measures of decoding. The test of near transfer for decoding-related skills was the WJ-3 Word Attack subtest. During this task, participants were required to read nonsense words. The median internal consistency coefficient was .87, and the median test-retest reliability coefficient was .83. The WJ-3 Letter-Word Identification subtest was the test of far transfer. On this subtest, participants' ability to identify real words in isolation was evaluated. The median internal consistency coefficient of the Letter-Word Identification subtest was found to be .94, whereas the median test-retest reliability coefficient was .95.

Measures of fluency. A daily curriculum-based measurement (CBM) probe was used as the near-transfer measure of reading fluency. In each session, participants read a CBM passage at their instructional level, and data were collected on words read correctly per minute and percentage of words read accurately. The passages ranged from 60 to 110 words and were derived from various basal and literature-based readers (e.g., Byars, 1994; Napier, 1985), including both expository and narrative text. Readability levels for all passages were determined by using the Spache readability formula (Spache, 1953). To control for passage effects, half the tutors worked from the back of the CBM passage packet to the front whereas the other half worked from front to back.

Oral reading fluency as measured by CBM probes has been shown to have strong validity given that performance on these measures is highly related to performance on a variety of measures of reading comprehension (Fuchs, Fuchs, Hosp, & Jenkins, 2001). In fact, the relationship between oral reading fluency as measured by CBM and reading comprehension extends to standardized test performance, with Fuchs, Fuchs, and Maxwell (1988) finding a correlation of .91 between oral reading fluency and performance on the Reading Comprehension subtest of the Stanford Achievement Tests. Additionally, CBM has been shown to be an excellent measure of reading outcomes because it is more sensitive to reading growth than traditional, norm-referenced measures (Deno et al., 2001).

The WJ-3 Reading Fluency subtest served as the test of far transfer. During this task, participants read as many sentences as they could within a 3-minute time limit, deciding whether the sentences were true or false. The test developers found the median internal consistency coefficient of the Reading Fluency subtest to be .90. The median test-retest reliability coefficient was .88.

Measures of comprehension. Comprehension was measured both formally with the WJ-3 and informally by having students read expository passages, retell the important ideas in the passage, and then answer multiple-choice questions. Three reading levels were represented by the informal passages – mid-first, mid-second, and fourth grade – with four passages at each reading level. Each passage was approximately 250 words long, and was either about a social studies topic (e.g., the life of John F. Kennedy) or a science topic (e.g., galaxies). Passages were drawn from a nonfiction, high-interest/ low-readability, leveled book series. Participants read two passages during both pretest and posttest. After the participants had finished reading each passage, their tutors stated, "Now tell me all the important parts of the passage," and the passages were then removed from the participants' sight. Participants' oral retells were audio-recorded and later transcribed. To control for passage effects, the passages were counterbalanced across subjects and time of administration. Oral retells of the passages served as the immediate measure of reading comprehension.

Two raters independently scored the oral retell responses based on the quality of response and the number of main ideas included. The raters were blind to whose response they were scoring, the treatment condition from which the responses came, and whether the response was from pre- or posttesting. A rubric to score the quality of response was developed by the first author prior to implementing the interventions. Scores for the quality of response ranged from 0 to 6 using the following criteria for the retell: 0 = has no passage-related supporting details or main ideas; 1 = has no passage-related main ideas and at least one supporting detail; 2 = has at least one main idea; 3 = retell has one main idea and one or more supporting details; 4 = retell has more than one main idea; 5 = retell has more than one main idea and one or more supporting details; and

6 = retell has more than one main idea and one or more supporting details, with at least two of the main ideas and/or supporting details presented in a way that is linked conceptually by the student. Inter-rater reliability was .91 for the quality score and .81 for the main idea score. For both the quality score and the number of main ideas, reliability was established by dividing the raters' agreements by the total number of scores. If the raters disagreed upon the scoring of a particular response, they discussed it in an attempt to reach consensus. When a consensus could not be reached, the participant received the higher of the two scores.

After the participants had given their oral retells of the passages, the tutors administered a multiple-choice test (near transfer) consisting of six items per passage. The items, created by the second author, required the ability to identify the main ideas and supporting details as well as the ability to use inference. Tutors read each item and the four possible answers for each item to the participants. The participants were allowed to look back at the text while attempting to answer the multiple-choice items.

The WJ-3 Passage Comprehension subtest served as the far-transfer measure of reading comprehension. This subtest uses a cloze procedure in which examinees are required to read a sentence with one word missing and fill in the blank with a word that makes sense. The median internal consistency coefficient of the Passage Comprehension subtest was .88, whereas the median test-retest reliability coefficient was found to be .92.

General Instructional Procedures

The study was conducted at the beginning of summer break and lasted six weeks, with approximately one week spent on pre and posttesting. The treatment conditions were delivered on a one-to-one basis. Participants received five weeks of one-to-one tutoring four days per week, for one hour per day, for a total of 20 hours.

Both treatment conditions incorporated exactly the same training in phonological awareness/analysis, strategic decoding, and reading fluency, referred to as Phonemic Awareness/Analysis, Decoding, and Fluency Instruction (PDF). Only the reading comprehension component (described below) of the instructional packages was manipulated. The two treatment conditions varied with regard to the degree of explicitness with which reading comprehension strategies were taught. For the base PDF component of instruction, tutors administered the daily CBM probe at the beginning of each session. Next, they spent approximately 15 minutes conducting the phonological awareness/analysis training. Using materials from the *Patterns for Success in Reading and Spelling* instructional kit (Henry & Redding, 2003), instruction incorporated multiple sensory modes, including auditory, visual, and kinesthetic, to teach new phonograms. One new phonogram was introduced per session, and all phonograms learned during previous sessions were reviewed. Individual letters and letter combinations were printed on cards. Participants were taught to identify the sound of the letter(s), to write the letter(s) when provided the sound, and to trace the letters. The newly introduced phonogram was further taught by reading a list of words that incorporated the phonogram in each word. In addition, the participants were required to spell words in which the phonogram was embedded.

In both conditions students were also instructed in the use of several decoding strategies, predominantly used during the comprehension component of instruction. Specifically, participants were taught five strategies to use when they encountered a word that they did not know, including "peeling off" the suffix or prefix; identifying familiar chunks of words and sounding out each chunk individually; saying each letter of the word out loud; using context by covering up the word and examining the content that comes before and after it; and using analogy or key words. Tutors provided direct instruction, modeling, as well as guided and independent practice in the use of the decoding strategies. In addition, participants were given a cue card listing the decoding strategies. When reading connected text during the comprehension component, participants were required to use the decoding strategies when they encountered unknown words. They were provided unknown words only after they had attempted all five decoding strategies. Participants were given flexibility with regard to the order in which they chose decoding strategies. Tutors emphasized that one strategy might work particularly well for one student or situation but not another, and that the strategies do not work for all words.

The comprehension component and use of the decoding strategies followed the training in phonological awareness/analysis. Tutors spent an average of 35 minutes per session on strategy instruction for comprehension and decoding. Both treatment conditions incorporated high-interest/low-readability expository text written at or near each participant's instructional reading level, defined as 89-94% accuracy on preintervention passage reading probes and standardized test scores. Although tutors were not given a limit or requirement in terms of the amount of text to be covered per session, participants in both treatment conditions received the same amount of time dedicated to the comprehension component.

The final component of the instructional packages of both treatment conditions was training in reading flu-

ency. Passage rereading was used. During passage rereading, a two-part procedure was used on the passages read during the reading comprehension component. First, the tutor read the passage out loud fluently and with appropriate inflection while the participant "shadow read," meaning she or he also read out loud, imitating the tutor, but following slightly behind. Second, the participant, after shadow reading, read the passage alone in a fluent manner with appropriate inflection. When participants encountered unknown words, tutors waited 3 seconds and then provided the words. Tutors spent an average of 10 minutes per session on the reading fluency component.

Guided Reading Instructional Procedures

The reading comprehension strategy instruction designed for this treatment condition was based in part on techniques used in the various manifestations of guided reading (Cunningham & Allington, 1999; Fountas & Pinnell, 1996), with a more specific strategy focus drawn from the work in reciprocal teaching (Palinscar & Brown, 1984). This condition was named PDF/GR (Phonemic Awareness/Analysis, Decoding, and Fluency Instruction + Guided Reading). Tutors modeled specific comprehension strategies for students, including prediction, summarization, and question generation, to enhance active and strategic reading. Tutors used modeling heavily during the first three to four sessions, and guided practice predominantly during the middle and final sessions. With this type of instructional approach, the assumption is made that students will naturally pick up on the purpose of the strategies and begin to use them independently (Duffy, 2002).

Strategies were presented simultaneously; that is, from the first day of the intervention, participants were exposed to all the reading comprehension strategies. Before reading, tutors and participants made predictions about the content they thought would be included in the day's text. They then read the text in an intermittent fashion, with the tutor reading a paragraph followed by the participant reading a paragraph. During at least two points while reading, the tutor and participant checked their original predictions and made re-predictions if necessary. After reading, the participant summarized the most important parts of the text and asked two important questions related to the content of the text.

Explicit Comprehension Procedures

In this treatment condition, participants received instructional procedures founded on the assumption that students with reading difficulties would benefit from explicit instruction in reading comprehension and self-regulatory strategies. This condition was named PDF/EC (Phonemic Awareness/Analysis, Decoding, and Fluency + Explicit Comprehension). Unlike the PDF/GR condition in which reading comprehension strategies were merely introduced, the PDF/EC condition consisted of direct instruction of each strategy, the purpose behind using it and the value of each strategy for comprehending text.

Within the PDF/GR condition, an assumption is made that self-regulation will occur if students are exposed to the strategies. The PDF/EC condition, in contrast, made training in self-regulation explicit by directly teaching participants the self-regulatory procedures of goal setting and self-monitoring.

The PDF/EC condition also differed from the PDF/GR condition in that the assumption was not made that students would naturally begin to use the strategies independently after repeated exposure. Instead, transfer of control of the strategies was explicitly moved from tutor to participant. The procedures of this treatment condition were founded largely on the self-regulated strategy development (SRSD) model (Graham & Harris, 2003; Harris & Graham, 1999). While the EC condition is not a direct replication of the SRSD model, it includes some of its critical elements such as explicit instruction of strategies and self-regulatory procedures, along with collaborative interaction between teacher and student.

A mnemonic was developed to represent the strategies used during reading comprehension instruction. The mnemonic was "SUPER-G" and stood for: Set Goals, Use prior knowledge, Predict what you think will be in the text, Explain the main idea in your own words, Retell the most important parts of the text, and Give yourself feedback. Unlike the PDF/GR condition, the strategies were introduced sequentially. In addition, adequate understanding and performance of the strategy was criterion- rather than time-based. Therefore, tutors presented the strategies one at a time and allowed students as much time as they needed to master the strategy before introducing a new strategy. Once they had mastered a strategy, students practiced it in conjunction with the introduction of the new strategy. For example, when the prediction strategy was introduced for the first time, participants first independently practiced setting goals and using prior knowledge within the same session. No more than one new strategy was introduced per session.

Newly introduced strategies were taught using the following sequence of procedures: direct explanation, modeling, collaborative practice, and independent practice. A mnemonic worksheet was created to use during each session. It consisted of the mnemonic presented vertically, with small boxes to the left of each letter for checking off whether the strategy was used and large boxes to the right of each letter for writing the outcomes of using the strategy.

Tutors used the worksheet to teach the strategies. When first explaining a new strategy, tutors wrote it out on the worksheet for participants to see. They explained the purpose of using the strategy, how it would likely be beneficial, and the situations in which it could be used. Next, they explicitly modeled using the strategy. During modeling, tutors "thought aloud" the cognitive statements they made to themselves internally when using the strategy. Modeling was followed by collaborative practice in which the tutor and participant worked together in using the strategy. Finally, participants independently practiced the strategy, thus completing the strategy control transfer from teacher to student. Tutors were directed to use further scaffolding and cognitive modeling on an as-needed basis throughout the intervention.

For the goal setting strategy, process goals were emphasized over product goals. According to Schunk and Rice (1991), process goals help students develop understanding and skill, whereas product goals (at least when used alone) often encourage outperforming others or achieving an external criterion rather than skill mastery and understanding. For that reason, students who set process goals are more willing to take risks and engage in challenging tasks than students who set product goals (Schunk & Rice, 1991). Tutors taught participants to set goals to understand the text and to use the strategies for the sake of better understanding the text.

The prior knowledge and prediction strategies were related, but different. When using the prior knowledge strategy, participants simply thought about what they already knew about the topic of the text. This strategy was used to encourage students to link newly acquired knowledge from the text with previously established knowledge schemas. The use of prediction is influenced by prior knowledge; however, prediction is a more specific strategy that uses cues from the text, such as titles, pictures, bold words, and subheadings, to hypothesize what the text will be about.

In the main idea strategy, which was based on the work of Vaughn and Klingner (1999), participants were taught to "get the gist" of the text and to state the main idea in their own words using 10 or fewer words. Tutors made the distinction between the topic as opposed to the main idea of the passage. Participants were taught that the topic is what the text is about and the main idea is the content the author thinks is important. Additionally, participants were taught "secrets" to determining what the author thinks is important by putting themselves in the author's place ("getting inside the author's head") and examining the words and phrases used for clues to what is important.

Tutors also taught the difference between main-idea thinking and retelling (or summarization) by explaining that the former is a search for the single most important idea being conveyed, whereas the latter consists of creating a brief retelling of several important points in the text. Tutors explained that some information in text is more important than other information. The use of question generation helped distinguish between important and unimportant text. Participants were taught to ask two important questions after reading the text.

Finally, participants were taught to give themselves feedback on their use of the strategies and their value in understanding the text. To that end, a mnemonic sheet served as a self-monitoring form for participants to check off whether they had used each strategy. Additionally, tutors used strategy-value feedback, based on the work of Schunk and Rice (1992), to explicitly show participants the link between using the strategies and improved comprehension of the text.

Design and Data Analysis

A randomized comparison group design was used to determine the relative effectiveness of the more explicit PDF/EC and PDF/GR reading interventions. Both tutors and participating students were randomly assigned to treatments. Dependent measures included standard scores on four subtests of the WJ-3 (Letter-Word Identification, Reading Fluency, Passage Comprehension, and Word Attack) and raw scores on informal measures of passage comprehension designed for the study (Oral Retell Quality, Number of Main Ideas Recalled, and Number of Correct answers to Multiple Choice Questions). Number of correct words read per minute on a daily CBM probe was used as an additional measure of reading fluency.

Within-group comparisons. Paired sample *t*-tests were used to investigate whether posttest scores on the dependent measures were significantly higher than pretest scores for each intervention. In addition, ordinary least-squares analysis was used to calculate the average session gain in reading fluency for each group.

Between group (PDF/EC and PDF/GR) comparisons. One-way analysis of covariance (ANCOVA) was used with posttest scores as dependent variables and pretest scores as covariates to determine significant differences between treatments on dependent variables. Effect size was used to assist in determining the practical importance of gains in dependent measures. Effect size was calculated by subtracting the pretest mean of each dependent variable from the posttest mean and dividing by the average, or pooled, standard deviation (Cohen, 1988; Hunter, Schmidt, & Jackson, 1982).

RESULTS

Preliminary Analyses

Preliminary analysis of variance (ANOVA) for continuous variables and chi-square analysis for categorical variables were used to test whether the treatment conditions were comparable at the outset. With alpha set at .05, these analyses indicated no significant differences between the two conditions on gender, ethnicity, age, intellectual functioning, reading skills (on all measures), and phonological processing. Pretest and posttest means and standard deviations for all dependent variables by condition are presented in Table 2.

Is a Balanced and Strategic Approach Effective?: Within-Group Comparisons

Paired sample *t*-tests were used to investigate whether posttest scores on the dependent measures were significantly higher than pretest scores for each intervention. Effect sizes were calculated by subtracting the pretest mean of each dependent variable from the posttest mean and dividing by the average standard deviation.

Decoding and decoding-related skills. Students in the PDF/GR group made significant gains on the measure of near transfer (WJ-3 Word Attack), t (10) = 3.03, $p < .05$, $d = .56$. The effect size for pretest to posttest gain was

Table 2
Outcomes for Reading Measures

	Guided Reading			Explicit Comprehension			
Measure	***Pre***	***Post***	***Gain***	***Pre***	***Post***	***Gain***	***Between Groups*** [a]
Retell Quality	1.5	2.9***	1.4	1.6	4.2***	2.6	4.8**
SD	1.1	(2.9) [b] 1.4	1.2	1.2	(4.1)	1.5	
Main Idea	.5	.9**	.5	.6	1.4***	.9	5.8**
SD	.4	(.9) .5	.5	.6	(1.4)	.7	
Multiple Choice [c]	5.2	6.2	.9	5.8	7.4*	1.7	1.0
SD	1.8	(6.3) 2.2	3.0	1.9	(7.4) 2.7	2.2	
L-W Ident.	77	80.9**	3.9	69.8	70.1	.3	3.6*
SD	7.3	7.5	5.2	13.7	13.2	2.4	
Reading Fluency	74.6	79.5***	4.9	72.1	75.9***	4.6	.02
SD	7.3	6.9	4.6	6.4	8.8	3.9	
Passage Comp.	79.2	78.7	-.5	70.3	75.6*	5.2	3.4*
SD	7.5	8.7	7.7	17.4	14.5	5.6	
Word Attack	85.5	88.7**	3.3	80.2	84.8*	4.6	.32
SD	5.5	6.0	3.6	11.2	6.6	6.4	

Note. Scores from WJ-3 are age-based standard scores.

[a] *F*-scores. [b] Scores in parentheses represent adjusted posttest means for ANCOVA. [c] Multiple-choice scores represent the average items correct out of 12.

* $p < .1$. ** $p < .05$. *** $p < .01$.

medium. PDF/EC participants showed a marginally significant increase in performance on the near-transfer measure, t (8) = 2.14, p = .07, d = .50. This effect size was also medium.

On the WJ Letter-Word Identification subtest, which served as the test of far transfer, the PDF/GR participants made significant gains, t (10) = 2.47, p < .05, d = .53. The effect size for these gains was medium. PDF/EC participants did not make significant gains in word identification, t (8) = -.426, d = -.02.

Reading fluency. Ordinary least-squared regression analyses were used to calculate the average gain in fluency using the CBM probes. A regression line was fit to each participant's daily CBM score. Using the beta value, the slope was determined for each student. Means for predicted growth per session were calculated by intervention group. Participants in both interventions made significant gains in reading fluency as measured by the daily CBM probes (the near-transfer measure). Those in PDF/GR intervention showed daily gains of .35 correct words per minute (cwpm), whereas participants in the PDF/EC intervention showed daily gains of .29 cwpm.

On the measure of far transfer, the WJ-3 Reading Fluency subtest, both groups made significant gains (PDF/GR, t (10) = 3.55, p < .01, d = .69; PDF/EC, t (8) = 3.36, p = .01, d = .49). The effect size for the PDF/GR intervention was medium, whereas the effect size for the PDF/EC intervention was on the borderline between small and medium.

Reading comprehension. Dependent samples t-tests indicated that both groups made significant gains on both tests of training measures, oral retell quality (PDF/GR, t (10) = 3.63, p <.01, d = 1.08; PDF/EC, t (8) = 5.23, p < .01, d = 2.03) and main-idea identification (PDF/GR, t (10) = 3.19, p = .01, d = .94; PDF/EC, t (8) = 3.83, p < .01, d = 1.69). Effects sizes for both interventions on both measures were large.

On the test of near transfer, the multiple-choice test of reading comprehension, the gains at posttest for participants in the PDF/EC intervention approached significance, t (8) = 2.24, p = .06, d = .67. Although not statistically significant, the effect size was medium. Participants in the PDF/GR intervention did not make significant gains on the test of near transfer, t (10) = 1.01, p > .05, d = .45.

Participants in the PDF/EC intervention also made gains on the measure of far transfer, the WJ-3 Passage Comprehension subtest, t (8) = 2.79, p < .05, d = .33. This effect size was small. Those in the PDF/GR intervention did not make significant gains on the measure of far-transfer, t (10) = -.20, d = -.05.

Does a Greater Degree of Explicitness in Comprehension Strategy Instruction Lead to Greater Gains?: Between-Group Comparisons

ANCOVA was used with posttest scores as dependent variables and pretest scores as covariates to determine significant differences between treatments on dependent variables. When any of the assumptions for ANCOVA were violated, two-way (treatment condition x pre-post) ANOVA was used. For the analyses using ANCOVA, effect size was calculated by subtracting the adjusted posttest mean of the PDF/EC condition from the adjusted posttest mean of the PDF/GR condition and dividing by the pooled *SD* of the original posttest means. Effect size for the two-way ANOVAs was calculated by subtracting the mean gain scores of the PDF/EC condition from the mean gain scores of the PDF/GR condition and dividing by the pooled *SD* of the gain scores.

Decoding and decoding-related skills. Because the assumption of homogeneity of regression slopes was violated, two-way ANOVA was used to analyze differences between the groups on the Word Attack and Letter-Word Identification subtests. Results indicated no differences in gains between the intervention groups on the Word Attack subtest, F (1, 17) = .323, p > .05, d = .25. On the Letter-Word Identification subtest, the difference between groups approached statistical significance, with participants in the PDF/GR intervention showing greater gains from pretest to posttest than those in the PDF/EC intervention, F (1, 18) = 3.57, p = .08, d = -.88. This effect size was large.

Reading fluency. For the Reading Fluency subtest, the assumption of homogeneity of regression slopes was violated. Therefore, two-way ANOVA was used. It indicated no statistically significant differences between groups on the Reading Fluency subtest, F (1, 17) = .02, d = -.07

Reading comprehension. All assumptions for ANCOVA were met for the oral retell and multiple-choice measures. Participants in the PDF/EC intervention outperformed those in the PDF/GR intervention on oral retell quality, F (1, 17) = 4.792, p < .05, d = .91, and main-idea identification, F (1, 17) = 5.763, p < .05, d = 1.07. Both effect sizes were large. There was no statistically significant difference between groups on the multiple-choice test, F (1, 17) = 1.01, p > .05, d = .44.

The assumption of homogeneity of regression slopes was violated for the analysis of the WJ-3 Passage Comprehension subtest. Two-way ANOVA indicated that differences between the groups approached statistical significance, F (1, 17) = 3.41, p = .08, d = .84. Those in the PDF/EC group showed a tendency toward greater

gains on the far-transfer measure of reading comprehension than did the PDF/GR group.

Social Validity

Overall, students in both treatment conditions responded favorably to the tutoring as measured by the social validity interview. Thus, in response to an open-ended question regarding their general opinion of the summer reading program, 19 out of 20 students responded positively. Several students from both treatment conditions used the following terms to describe their reactions to the program: "fun (8)," "cool (2)," "great/good (6)," and "helpful (8)." When directly asked whether they thought their reading skills had improved as a result of participating in the program, all students responded in an affirmative manner. An illustrative example of a response is the following: "Yeah, a lot. Because I read more and it helps me with the words I don't know. It helps me understand what's going on in the book."

DISCUSSION

In this study, we examined the impact of balanced and strategic reading instruction on the reading skills of upper-elementary and middle school students with RD. We were specifically interested in whether meaningful gains could be made when this approach was used with older children with RD, and whether more explicit comprehension strategy instruction led to greater gains in comprehension. Here we discuss our findings in light of recommendations for practice and future research.

Is a Balanced and Strategic Approach to Reading Instruction Effective for Older Children with RD?

Overall, meaningful progress was found in students' reading decoding and fluency skills given the relatively short intervention time of 20 sessions over 5 weeks. The significant standard-score gains made in the WJ-3 Word Attack and Reading Fluency subtests translated into grade-equivalent gains of approximately half a school year, which far exceeds what would be expected for that period of time in the summer. According to the CBM probes, students were not only reading more quickly but also more accurately. The findings on both the formal and informal assessments suggest that the comprehensive reading intervention generalized to both contrived and contextualized measures of decoding. The analysis of the trends in the daily CBM probes translated into average daily gains of .32 cwpm across both groups or a gain of 1.28 cwpm per four-day week. These gains in fluency are similar to the reported average fluency gains of 1.39 per week for the accelerated instruction of children with LD in intensive treatment programs, in grades 2-6 (Deno et al., 2001). These gains also exceed the "ambitious" target of .65 words per week recommended by Shaywitz (2003) and the "normative" gains of .5 words per week of students with LD in general (Deno et al., 2001).

In addition, students in both treatment groups made gains on the most immediate measure of reading comprehension: passage oral retell. Because the passages used in the retell were controlled for readability (i.e., word and sentence length), this measure provided an opportunity to examine change in passage-level comprehension independent of word-level reading ability. Students demonstrated significant improvement in the number of main ideas in a passage they were able to identify as well as in the quality of their summaries. The large effects suggest that the treatments had a meaningful, positive impact on students' abilities to draw meaning from text. Participants in both groups made significant gains on the retell measure of comprehension, and students in the PDF/EC made gains in the two transfer comprehension measures: multiple-choice questions and the WJ-3 Passage Comprehension subtest. These findings suggest that a balanced and strategic intervention can accelerate the learning of older children with RD over a relatively short time.

Accelerated learning is essential if students with RD are to overcome the cumulative effect of years of falling behind in school. In addition, for upper-elementary and middle school students, intensive instruction that demonstrates some immediate success is necessary to enhance self-efficacy and motivation to continue to work on their reading.

The results provide support for the value of individualized, intensive reading instruction as an essential complement to an inclusive education. It also confirms that students who enter the upper-elementary grades with significant delays in learning to read are still amendable to reading instruction. There is little evidence that instruction in an inclusive classroom that does not include intensive tutorial, or even in traditional resource rooms, would equate to the gains made in a supplemental intensive reading intervention (Manset & Semmel, 1997; Marston, 1996; Moody, Vaughn, Hughes, & Fischer, 2000).

Does a Greater Degree of Explicitness in Comprehension Strategy Instruction Lead to Greater Gains in Reading Comprehension?

There were important differences in the overall impact on comprehension in the two groups. That is, students in the PDF/EC condition made significantly greater gains in the immediate measure of reading (passage oral retell) than those in the PDF/GR condition. These findings have implications for how to best teach older children with RD to read. While it has become increasingly evident that the most effective instruction

is a balance between direct instructional and more constructivist approaches (Chall, 2000; Snow et al., 1998), determining the optimal degree of explicitness in comprehension instruction for students with RD is not a simple task. Providing a highly explicit and structured instructional format for reading comprehension has the potential of introducing new problems. As comprehension instruction becomes more teacher-directed, for instance, with more direct explanation, modeling, guided practice and feedback, and review, the less it resembles authentic reading. Extensive explicitness of strategy instruction may interfere with the constructivist or transactional nature of the construction of meaning from text and the spontaneous development of reading strategies and, therefore, not lend itself to generalization. In addition, the more structured the strategy instruction, the more labor-intensive it becomes for both instructor and student.

It was evident in our observations of the reading instruction that students in the PDF/EC condition covered fewer pages of text and fewer topics during their tutoring sessions than students in the PDF/GR condition. Despite these potential drawbacks, the results suggest that the more explicit the comprehension strategy and self-regulatory instruction, the higher the likelihood that older children with RD will make significant gains in reading comprehension.

Limitations

Several limitations of this study should be noted. First, the lack of a no-treatment control group threatens the internal validity of our conclusions. Without a no-treatment control, it is not possible to determine conclusively whether students made gains purely because of maturation or because of practice effects on the measures.

We chose to use a contrast group, the PDF/GR intervention, instead of a no-treatment control for two reasons. First, there is clearly an ethical issue (Lyon & Moats, 1997), and we believed that participants in the PDF/GR intervention would benefit from the treatment, while students in a no-control treatment group likely would regress in their reading skills over the summer (Allington & McGill-Franzen, 2003; Schacter, 2003). Second, we believed that the PDF/GR intervention would provide a much more rigorous test of the efficacy of the PDF/EC than a no-treatment control. It was not particularly important for us to determine whether participants in the PDF/EC intervention would outperform a no-treatment control group. We were confident, however, that much of the gains may be attributed to the intervention given that the study occurred over the summer, when students usually regress in their reading skills. As noted earlier, the outcomes on the WJ-3 and the CBM gains exceeded what would be predicted for students in five weeks. In other words, we had no reason to believe that these students, who were so delayed in their reading skills, would make even little progress in reading without an intensive intervention. In addition, the moderate to large effect sizes for students who have historically demonstrated such difficulty in learning to read would preclude the possibility of results being due to practice effects.

The small sample size (N = 20) provided limited statistical power to detect changes resulting from the interventions. Prior to the study's implementation, we were aware that large differences between groups had to be found in order for our findings to be statistically significant. It was thought that the differences in the two interventions were significant enough to produce large effects. The inclusion of a larger sample would have increased the study's power to detect smaller effects between the intervention groups.

Another limitation is the potential for bias in selecting the sample of participants. Although they were randomly assigned to treatments, all students who qualified, volunteered, and attended regularly were included in the study. This limits our ability to generalize to all students with RD. Additionally, the omission of tests of maintenance and generalization prevents us from making statements about whether the interventions had long-lasting effects on the participants and whether their skills were generalized outside the tutoring setting.

Finally, the design of the study inhibits us from making specific statements about the aspects of the PDF/EC condition that may have influenced greater reading comprehension achievement than the PDF/GR condition. We developed the interventions to differ with regard to the degree of explicitness in which strategy instruction was given. However, many aspects make up difference in explicitness. What aspects or combination of aspects of explicitness were at work? Was it the added explicit instruction in the self-regulatory procedures, the explicit explanation of the reasoning behind using strategies, or the explicit feedback on the value of strategy use in aiding comprehension? Was it the explicit transfer of control of strategy use from teacher to student?

We admit that we do not have the answers to these important questions. Despite this limitation, our findings suggest that some aspects of explicitness in strategy instruction are important in maximizing the reading comprehension gains of upper-elementary and middle school students with RD.

Implications for Practice

We were pleased to find that students in both groups made meaningful gains in three important elements

of reading (i.e., decoding, fluency, and comprehension). Still, despite our efforts to work with a group of students who were relatively homogeneous in reading skills, phonological processing deficits, and grade level, the treatment affected individual students differently. Thus, the intervention was much more effective for some students than others. Practitioners should be aware of the need to examine whether elements of comprehensive treatments could be intensified depending on students' reading skill and phonological processing profile.

There also appeared to be differences in the interaction of treatment components with each other and with outcome measures. One particularly striking example of this was with those students who demonstrated a negative growth on the informal measure of fluency as measured by CBM, despite growth in reading accuracy and gains in the WJ-3 Reading Fluency subtest. These students' fluency scores were dropping because they were slowing down to self-correct when they realized that a word they read did not make sense in the context of the sentence. In other words, they become *less fluent* as measured by CBM as a consequence of an increase in their comprehension. While there is a general assumption that an increase in reading fluency contributes to greater comprehension because more cognitive space is left free for drawing meaning from text, this example illustrates that the relationship between fluency and comprehension is much more complex than that. At times it felt as though we were sending mixed signals to students: read faster but think about what you are reading and stop to apply decoding strategies. Again, practitioners should pay attention to comprehensive interventions to know more about how treatment components complement and counteract each other.

This study provides evidence of the benefits of a comprehensive, supplemental reading intervention for older children with RD. Thus, it was evident that when implementing a balanced approach to reading instruction for students with RD, more explicit instruction in comprehension and self-regulatory strategies should be considered. While the feasibility of finding resources to support such intensive services is most likely on the mind of every practitioner who reads this article, it may help to note that we were able to train tutors with a moderate level of resources. That is, the instructors had, for the most part, limited experience working with students and approximately 25 hours of training in this method. This is a far cry from the advanced training in reading that is required for other intensive tutorial reading approaches. To use a standard for determining intervention effectiveness set by Deno and his colleagues (2001), we feel our findings are important not because they replicate typical practice but "because they reveal what is 'possible' for students with learning disabilities to achieve-rather than what is 'likely' that they will achieve" (p. 519).

REFERENCES

Adams, G., & Carnine, D. (2003). Direct instruction. In H. L. Swanson, K. R. Harris, & S. Graham (Eds.), *Handbook of learning disabilities* (pp. 403-416). New York: Guilford.

Allington, R. L., & McGill-Franzen, A. (2003). The impact of summer setback on the reading achievement gap. *Phi Delta Kappan 84,* 68-75.

Beck, I. L., McKeown, M. G., Sandora, C., Kucan, L., & Worthy, J. (1996). Questioning the author: A year long classroom implementation to engage students with text. *Elementary School Journal, 96,* 385-414.

Byars, B. C. (1994). *The Golly sisters ride again.* New York: Harper Collins.

Carr, E., & Ogle, D. (1987). K-W-L plus: A strategy for comprehension and summarization. *Journal of Reading, 30,* 626-631.

Chall, J. S. (2000). *The academic achievement challenge: What really works in the classroom?* New York: Guilford.

Cohen, J. (1988). *Statistical power analysis for the behavior change* (2nd ed.). Hillsdale, NJ: Erlbaum.

Cunningham, P. M., & Allington, R. L. (1999). *Classrooms that work: They can all read and write.* New York: Longman.

Deno, S.L., Fuchs, L. S., Marston, D., & Shin, J. (2001). Using curriculum-based measurement to establish growth standards for students with learning disabilities. *School Psychology Review, 30,* 507-524.

Duffy, G. G. (2002). The case for direct explanation of strategies. In C. C. Block & M. Pressley (Eds.), *Comprehension instruction: Research-based best practices* (pp. 28-41). New York: Guilford.

Duffy, G. G., Roehler, L., Sivan, E., Rackliffe, G., Book, C., Meloth, M., Vavrus, L., Wesselman, R., Putnam, J., & Bassiri, D. (1987). Effects of explaining the reasoning associated with using reading strategies. *Reading Research Quarterly, 22,* 347-368.

Dykman, R. A., & Ackerman, P. T. (1991). ADD and specific reading disability: Separate but often overlapping disorders. *Journal of Learning Disabilities, 24,* 96-103.

Fernald, G. M. (1943). *Remedial techniques in basic school subjects.* New York: McGraw-Hill.

Fletcher, J. M., Morris, R. D., & Lyon, G. R. (2003). Classification and definition of learning disabilities: An integrative perspective. In H. L. Swanson, K. R. Harris, & S. Graham (Eds.), *Handbook of learning disabilities* (pp. 30-56). New York: Guilford.

Foorman, B. R., Francis, D. J., Fletcher, J. M., Schatschneider, C., & Mehta, P. (1994). The role of instruction in learning to read: Preventing reading failure in at-risk children. *Journal of Educational Psychology, 90,* 37-55.

Fountas, I., & Pinnell, G. (1996). *Guided reading: Good first teaching for all children.* Portsmouth, NH: Heinemann.

Francis, D. J., Shaywitz, S. E., Stuebing, K. K., Shaywitz, B. A., & Fletcher, J. M. (1996). Developmental lag versus deficit models of reading disability: A longitudinal, individual growth curves analysis. *Journal of Educational Psychology, 88,* 3-17.

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

Fuchs, L. S., Fuchs, D., & Maxwell, L. (1988). The validity of informal measures of reading comprehension. *Remedial and Special Education, 9,* 20-28.

Hunter, J. E., Schmidt, E. L., & Jackson, G. B. (1982). *Meta-analysis: Cumulating research findings across studies*. Beverly Hills, CA: SAGE.

Gersten, R., Fuchs, L. S., Williams, J. P., & Baker, S. (2001). Teaching reading comprehension strategies to students with learning disabilities: A review of the research. *Review of Educational Research 71,* 279-320.

Gillingham, A., & Stillman, B. (1965). *Remedial training for children with specific disability in reading, spelling, and penmanship*. Cambridge, MA: Educator's Publishing Service.

Graham, S., & Harris, K. R. (1989). Components analysis of cognitive strategy instruction: Effects on learning disabled students' compositions and self-efficacy. *Journal of Educational Psychology, 81,* 353-361.

Graham, S., & Harris, K. R. (2003). Students with learning disabilities and the process of writing: A meta-analysis of SRSD studies. In H. L. Swanson, K. R. Harris, & S. Graham (Eds.), *Handbook of learning disabilities* (pp. 323-344). New York: Guilford.

Harris, K. R., & Graham, S. (1999). Programmatic intervention research: Illustrations from the evolution of self-regulated strategy development. *Learning Disability Quarterly, 22,* 251-262.

Henry, M. K., & Redding, N. C. (2003). *Patterns for success in reading and spelling: A multisensory approach to teaching phonics and word analysis*. Austin, TX: Pro-Ed.

Hunter, J. E., Schmidt, F. L., & Jackson, G. B. (1982). *Meta-analysis: Cumulating research findings across studies*. Beverly Hills, CA: Sage.

Kamphaus, R. W., & Reynolds, C. R. (2002). *Reynolds intellectual screening test*. Lutz, FL: Psychological Assessment Resources.

Lovett, M. W., Lacerenza, L., Borden, S. L., Frijters, J. C., Steinbach, K. A., & De Palma, M. (2000). Components of effective remediation for developmental reading disabilities: Combining phonological and strategy-based instruction to improve outcomes. *Journal of Educational Psychology, 92,* 263-283.

Lovett, M. W., & Steinbach, K. A. (1997). The effectiveness of remedial programs for reading disabled children of different ages: Is there decreased benefit for older children? *Learning Disabilities Quarterly, 20,* 189-210.

Lyon, G. R., Fletcher, J. M., Shaywitz, S., Shaywitz, B., Torgeson, J. K., Wood, F. et al. (2001). Rethinking learning disabilities. In C. Finn, A. Rotherham & C. Hokanson (Eds.), *Rethinking special education for a new century* (pp. 259-287). Washington, DC: Thomas B. Fordham Foundation.

Lyon, G.R., & Moats, L.C. (1997). Critical conceptual and methodological considerations in reading intervention research. *Journal of Learning Disabilities, 6,* 578-588.

Manset, G., & Semmel, M. I. (1997). Are inclusive programs for students with mild disabilities effective?: A comparative review of model programs. *The Journal of Special Education, 31,* 155-180.

Marston, D. (1996). A comparison of inclusion only, pull-out only, and combined service models for students with mild disabilities. *The Journal of Special Education, 30,* 121-132.

Mastropieri, M. A., & Scruggs, T. E. (1997). Best practices in promoting reading comprehension in students with learning disabilities: 1976 to 1996. *Remedial and Special Education, 18,* 197-213.

McGrew, K. S., & Woodcock, R. W. (2001). *Woodcock-Johnson III technical manual*. Itasca, IL: Riverside Publishing.

Moody, S. W., Vaughn, S., Hughes, M. T., & Fischer, M. (2000). Reading instruction in the resource room: Set up for failure. *Exceptional Children, 66,* 305-316.

Napier, L. (1985). *Nat, the school cat*. Milwaukee, WI: Gareth Stevens Publishing.

Palinscar, A. S., & Brown, A. L. (1984). Reciprocal teaching of comprehension-fostering and monitoring activities. *Cognition and Instruction, 1,* 117-175.

Rasinski, T. V. (1990). Effects of repeated reading and listening while reading on reading fluency. *Journal of Educational Research, 83,* 147-150.

Reynolds, R. E. (2000). Attentional resource emancipation: Toward understanding the interaction of word identification and comprehension processes in reading. *Scientific Studies in Reading, 4,* 169-195.

Sawyer, R. J., Graham, S., & Harris, K. R. (1992). Direct teaching, strategy instruction, and strategy instruction with explicit self-regulation: Effects on the composition skills and self-efficacy of students with learning disabilities. *Journal of Educational Psychology, 84,* 340-352.

Schacter, J. (2003). Preventing summer reading deficits in children who are disadvantaged. *Journal of Early Intervention, 26,* 47-58.

Schunk, D. H., & Rice, J. M. (1991). Learning goals and progress feedback during reading comprehension instruction. *Journal of Reading Behavior, 23,* 351-364.

Schunk, D. H., & Rice, J. M. (1992). Influence of reading comprehension strategy information on children's achievement outcomes. *Learning Disability Quarterly, 15,* 51-64.

Shaywitz, S. (2003). Overcoming dyslexia: *A new and complete science-based program for reading problems at any level*. New York: Knopf

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy of Sciences, National Research Council.

Spache, G. D. (1953). A new readability formula for primary grade reading materials. *Elementary School Journal, 53,* 410-413.

Thorpe, H. W., & Borden, K.S. (1985). The effect of multisensory instruction upon the on-task behaviors and word reading accuracy of learning disabled children. *Journal of Learning Disabilities, 18,* 279-286.

Torgesen, J. K. (1977). The role of nonspecific factors in the task performance of learning disabled children. *Journal of Learning Disabilities, 10,* 33-40.

Torgesen, A. W., Alexander, R. K., Wagner, C. A., Rashotte, K., Conway, T., & Rose, E. (2001). Intensive remedial instruction for children with severe reading disabilities: Immediate and long-term outcomes from two instructional approaches. *Journal of Learning Disabilities, 34,* 33-58.

Torgesen, J. K., & Wagner, R. K. (1998). Alternative diagnostic approaches for specific developmental reading disabilities. *Learning Disabilities Research and Practice, 13,* 220-232.

U.S. Department of Education. (2002). *Twenty-fourth annual report on the implementation of the Individuals with Disabilities Act*. Retrieved October 22, 2004, from http://www.ed.gov/about/reports/annual/osep/2002/execsumm.html

Vaughn, S., & Klingner, J. K. (1999). Teaching reading comprehension through collaborative strategic reading. *Intervention in School and Clinic, 34,* 284-293.

Wagner, R. K., Torgesen, J. K., & Rashotte, K. (1999). *Comprehensive test of phonological processing*. Austin: TX: Pro-Ed.

Weinstein, G., & Cooke, N. L. (1992). The effects of two repeated reading interventions on generalization of fluency. *Learning Disability Quarterly, 15,* 21-28.

Williams, J. P. (2000). *Strategic processing of text: Improving reading comprehension of students with learning disabilities*. Washington, DC: Special Education Programs. (ERIC Document Reproduction Service No. ED449596)

Wong, B.Y.L. (1996). *The ABCs of learning disabilities*. San Diego, CA: Academic Press.

Wong, B.Y.L., Harris, K. R., Graham, S., & Butler, D. L. (2003). Cognitive strategy instruction research in learning disabilities. In H. L. Swanson, K. R. Harris, & S. Graham (Eds.), *Handbook of learning disabilities* (pp. 383-402). New York: Guilford.
Woodcock, R. W., McGrew, K. S., & Mather, N. (2001). *Woodcock-Johnson III tests of achievement*. Itasca, IL: Riverside Publishing.

Requests for reprints should be addressed to: Genevieve Williamson, Wright Education Bldg, 201 N. Rose Ave., Blomington, IN 47405; gmwill@indiana.edu.