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Teachers Engaging Parents as Tutors to Improve Oral Reading Fluency

by

Sara S. Kupzyk

A DISSERTATION

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Philosophy

Major: Psychological Studies in Education

Under the Supervision of Professor Edward J. Daly III

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TEACHERS ENGAGING PARENTS AS TUTORS TO IMPROVE ORAL READING FLUENCY

Sara S. Kupzyk, Ph.D.

University of Nebraska, 2012

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This dissertation examined the application of evidence-based tutoring for oral reading fluency (ORF) to a natural setting, using teachers as parent trainers. Measures used to determine the impact of parent tutoring included treatment integrity, student reading outcomes, attitudes towards involvement and reading, and social validity. Six teachers (second through fourth grade) were trained in a 3-hour workshop to develop individualized tutoring programs with parents. Following training, the teachers trained seven parents and students to use individualized tutoring programs. Training followed a behavior skills training model and incorporated video modeling and printed instructions to increase efficiency. A multiple-baseline design was used to evaluate the effect of training on parents' use of evidence-based reading strategies and of tutoring on students' ORF. During baseline, parents were asked to practice reading with their child as they typically do. During intervention, parents used the evidence-based tutoring program developed with the teacher. Multiple dimensions of treatment integrity were measured to provide a comprehensive picture of how the tutoring influenced child outcomes, and to inform future practices. The results showed that teachers' treatment integrity of parent training was high. Six parents showed immediate improvement in their use of evidence-base strategies, but levels of adherence, quality, and dosage varied across parents. Engagement remained high during baseline reading sessions and structured tutoring

sessions. Four out of seven of the students showed significant improvements in ORF. Teachers and parents indicated positive beliefs about parent involvement at baseline and post-intervention. Student attitudes towards reading were also generally high and did not show a systematic change from baseline to intervention. Social validity ratings from teachers, parents, and students were favorable, indicating that they perceived the intervention to be acceptable. Results are discussed in terms of the relationship between treatment integrity, student outcomes, and beliefs about involvement. Discussion also focuses on the need for additional research in natural settings to more closely examine the conditions needed for successful implementation of parent tutoring programs and the effect on student outcomes.

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CHAPTER 1

Introduction and Review of Literature

When reading is inaccurate and laborious, students experience difficulty understanding what they read and thus struggle to achieve (Learning First Alliance [LAF], 1998; National Institute of Child Health and Human Development [NICHD], 2000). Furthermore, students with reading deficits are more likely to be retained, drop out of school, experience emotional and behavioral problems, and have decreased occupational attainment (Bramlett, Murphy, Johnson Wallingsford, & Hall, 2002; Good, Simmons, & Smith, 1998; Juel, 1988; National Center for Learning Disabilities, 1999). Students who do not become proficient readers in elementary school are likely to struggle with reading as adolescents and adults (Shaywitz et al., 1999; Torgesen, Wagner, & Rashotte, 1994). Unfortunately, given that 68% of fourth grade students in the U.S. score below the proficient reading level, many students are likely to experience these poor outcomes (National Center for Education Statistics, 2010).

Oral reading fluency (ORF) is a critical part of learning to read and is defined as the ability to read connected text accurately, quickly, and with proper expression (NICHD, 2000; Torgesen & Hudson, 2006). If students cannot read fluently, their ability to gain knowledge through reading is stifled. Learning to read fluently is essential for academic success, as more than 85% of the curriculum across subjects is delivered via text (e.g., textbooks, worksheets, computer screens; Baker, 2003; Fielding, Kerr, & Rosier, 2007). Fluency is critical to the development of reading, as it supports and facilitates comprehension, the ultimate goal of reading (National Reading Panel discussion, NICHD, 2000; Snow, Burns, & Griffin, 1998). Adams (1990) argues that

when students read accurately and with sufficient speed, they are able to allocate more attention to understanding and constructing the meaning of what is read.

A salient variable to account for poor academic performance that is highly related to skill development is the number of response opportunities (Greenwood, Delquardi, & Hall, 1984). Researchers have found large differences between the number of words read by good and poor readers in and outside of school (Cunningham & Stanovich, 1998; Nagy & Anderson, 1984). In general, poor readers receive less practice within and outside of school than those who read fluently at grade level. Nagy and Anderson (1984) noted large individual differences in the number of words read by good readers and poor readers, ranging from over one million words in a year to 100,000 words in a year. Furthermore, Cunningham and Stanovich (1998) found that the number of words read in a year by fifth-grade students scoring at the 10^{th} percentile in reading was approximately equivalent to the number of words read in two days by students who scored at the 90^{th} percentile in reading ability. Over time, the discrepancy in number of practice opportunities between struggling and proficient readers grows (Stanovich, 1986).

Although unfortunate, this cycle is not surprising, as students who read fluently are better able to derive meaning from what is read, find it easier to read, and gain greater enjoyment from the task, whereas students who have difficulty reading accurately and quickly must allocate more effort and attention to word identification. For these students, the reading process is more effortful and less enjoyable. The ever-increasing achievement gap between good and poor readers as a function of cumulative differences in opportunities to respond has been termed the Matthew effect (Stanovich, 1986). Students who read proficiently enjoy reading and engage in greater amounts of reading,

further increasing their skills while poor readers spend less time reading and fall further behind as reading requirements increase in school. Significant amounts of supported reading practice are probably necessary to close the gap. Careful selection of evidence-based strategies for ORF and skilled tutors appear to be important for increasing students' rates of growth in ORF.

Evidence-based Strategies for Oral Reading Fluency

The goal of instruction for ORF is to make reading more efficient, functional, and meaningful. Effective interventions for students who struggle with ORF provide multiple opportunities for accurate practice with text reading (Torgesen & Hudson, 2006). In a review of 24 studies reporting the effects of fluency interventions for students with learning disabilities, Chard, Vaughn, and Tyler (2002) identified three components of effective ORF instruction: (a) explicit modeling of text, (b) repeated reading of text with corrective feedback, and (c) providing performance feedback.

First, students who struggle with reading fluency benefit from explicit modeling and prompting strategies (Chard, Vaughn, & Tyler, 2002). Modeling and prompting decrease the likelihood the student will make an error and increase the likelihood the student will read words previously modeled correctly (Cooper, Heron, & Heward, 2007; Daly & Martens, 1994; Daly, Lentz, & Boyer, 1996), making practice more effective. Listening passage preview (LPP) is a modeling strategy in which the instructor reads a passage aloud while the student follows along (Daly & Martens, 1994). Daly and Martens (1994) compared the effects of LPP, silent previewing (i.e., students read the passage silently to themselves), and a taped-words condition in which words were modeled on an audiotape for students who then repeated the words. Treatments were

compared using a single-case multi-element design with four elementary-aged students identified with a learning disability. All four students demonstrated the largest gains in ORF and accuracy in the LPP condition relative to the other conditions. Similarly, Rose and Beattie (1986) found greater improvements in ORF for LPP with a live model than for a previewing condition in which the passage was modeled from an audiotape prior to reading the text. However, both previewing procedures were more effective than no instruction.

The second procedure identified by Chard et al. (2002)—repeated reading of text—has received considerable support over the last 30 years (e.g., NICHD, 2000; O'Shea, Sindelar, O'Shea, 1987; Rashotte & Torgesen, 1985; Samuels, 1979). The strategy involves having the student read and reread a short passage at their instructional level to a predetermined criterion level of performance or number of readings with the support of a tutor (Torgesen, Rashotte, & Alexander, 2001). Samuels (1979) first described the use of repeated reading with an elementary student with a developmental disability. The student's reading rate increased and errors decreased following each reading of an individual passage. In addition, the student's initial reading rate on each passage presented to the student was higher than the previous passage. In other words, the student demonstrated generalized improvements in ORF as he read novel passages with greater speed across the course of the study. Following this initial publication, a number of studies have examined the effects of repeated reading on ORF, accuracy, and comprehension with the same finding (e.g., Carver & Hoffman, 1981; Dowhower, 1987; Homan, Klesius, & Hite, 1993; Rashotte & Torgesen, 1985).

A meta-analysis conducted by the National Reading Panel (NICHD, 2000) validated years of research support and recommended repeated readings as a primary strategy for improving fluency. Members of the Panel identified and coded studies published in refereed journals that examined the effectiveness of two approaches for building ORF—guided oral reading and encouraging students to read more independently. The majority of the guided oral reading studies used the method of repeated readings (i.e., 9 out of 14) while the remaining studies used methods such as paired reading and peer guidance in which the instructor assisted the student with reading and provided feedback. Encouraging reading included programs such as Drop Everything and Read and Sustained Silent Reading in which students were asked to read silently and independently for a set amount of time. When the two strategies were compared, results showed no support for programs that encouraged students to read independently; however, guided oral reading approaches—primarily the method of repeated readings—had a positive effect on student reading. Specifically, guided oral reading produced medium effects on fluency (d = 0.55), word recognition (d = 0.55), and full-scale reading scores (d = 0.5), and a small effect on reading comprehension (d = 0.35; NICHD, 2000), using Cohen's 1988 guidelines for interpreting effect sizes.

A more recent review of the repeated readings method by Therrien (2004) also showed the method improved speed and accuracy of reading in novel passages. Evidence suggests that repeated readings practice impacts reading performance by providing multiple exposures to words within a short time period, which leads to increased efficiency in word recognition (Torgesen et al., 2001). In other words, the method of

repeated readings provides the necessary practice for students to learn how to automatically identify words (Samuels, 1979).

The effectiveness of repeated readings is influenced by other variables, including the passage difficulty, number of readings, types of prompts given prior to reading, and types of error correction provided. DiStefano, Noe, and Valencia (1981) examined the effects of text difficulty level and purpose of reading (i.e., overview or detail) on students' reading rates. Three hundred forty students were asked to read an easy passage or a more difficult passage for the purpose of learning the overview or details of the material. The findings showed that students demonstrated higher reading fluency when reading for both purposes (more substantial impact for overview) when given easier passages, or those that more closely approximated their instructional level. Gickling and Armstrong (1978) investigated the effects of three instructional levels on first- and second-grade students' on-task behaviors, task completion, and task comprehension. Instructional levels for reading tasks were categorized as frustrational (i.e., <93% known words), instructional (i.e., 93-97% known words), and independent (>97% of known words). Instructional-level reading tasks produced higher rates of on-task behavior, task completion, and task comprehension than frustrational-level tasks. Independent-level tasks resulted in high rates of task completion and comprehension, but low rates of on-task behavior. More recently, using a multi-element design, Treptow, Burns, and McComas (2007) validated these findings for reading instruction. As with Gickling and Armstrong's (1978) results, instructional-level passages produced the highest rates of on-task behavior when compared to frustrational- and independent-level passages. Students

correctly answered more comprehension questions when given independent- and instructional-level passages than when given frustrational-level passages.

O'Connor et al. (2002) also found benefits for selecting reading material matched to students' instructional level as opposed to grade-level material. Forty-six students were randomly assigned to one of three conditions—tutoring with instructional level materials, tutoring with grade-level materials, and a control condition in which students received no additional tutoring. Following 18 weeks of tutoring, results showed students with initially low fluency levels who were tutored with instructional-level materials made significantly larger gains on fluency in second-grade level texts than those tutored with grade-level materials (effect size $d = 1.36$). Students who received tutoring in grade-level texts did not perform better than those in the control group in second-grade fluency. Therefore, selecting materials of appropriate difficulty level is likely to improve instructional effects.

The number of repeated readings completed is another variable that influences intervention effects. O'Shea et al. (1985) examined the impact of the number of repeated readings of a passage on third grade students' fluency and comprehension. They found that students' reading fluency and comprehension improved as the number of readings increased. Therrien (2004) calculated mean fluency effect sizes for different numbers of repeated readings. Across the 27 studies identified, those that had students reread passages three and four times resulted in large effects on reading fluency ($d = 0.85$, and $d = 0.95$, respectively), whereas those that had students reread passages two times only showed medium effects ($d = 0.57$). Furthermore, Therrien found no added benefits to reading passages seven times compared to four times. Specifically, reading passages

seven times did not produce significantly greater effects on reading comprehension. The additional time required to read passages more than four times does not appear to be justified. Therefore, it is recommended that passages be repeated three to four times during instruction.

Another variable that influences outcomes of repeated readings is the type of cues given to students prior to reading. When students are instructed to read passages to answer overview questions as opposed to questions about details presented in the passage, they demonstrate higher reading rates (DiStefano et al., 1981). In addition, cueing students to attend to meaning leads to greater improvements in speed and retelling of the story than cueing students to attend only to reading speed (O'Shea et al., 1985). Given these results and the primary purpose of reading (i.e., comprehension), it appears that prompting students to read for speed *and* for meaning will probably produce higher rates of reading fluency. In summary, selecting instructional-level passages, having students reread the selected passage three to four times, and prompting students to read for speed and meaning can enhance the effectiveness of the method of repeated readings.

Repeated practice with unknown or difficult words on flashcards may also be beneficial for building ORF, as it increases student practice with rapid word reading (e.g., Daly, Hintze, & Hamler, 2000; MacQuarrie, Tucker, Burns, & Hartman, 2002). Flashcard procedures improve automatic and accurate word recognition, which is useful for enhancing ORF (Roberts, Turco, & Shapiro, 1991). Students' accuracy and word reading efficiency improves with repeated practice with words in isolation (Torgeson et al., 2001). Incremental Rehearsal (IR) is a popular and effective flashcard instruction method (MacQuarrie et al., 2002). Burns (2007) investigated the effects of preteaching

unknown words to 29 third-grade students with learning disabilities in reading. During brief instructional sessions, unknown words for each student were identified and taught using IR. IR provides students with a model of correct word reading and multiple opportunities to practice reading previously unknown words correctly. Each week, student progress in curriculum-based, grade-level passages was monitored. Students who received instruction in unknown words demonstrated four times the amount of growth in ORF as a control group. The between-groups difference was statistically significant ($p<.05$) and the intervention produced a large effect ($d=1.47$). In addition, students who were pretaught unknown words were more likely to read at an instructional as opposed to a frustrational level. In another study, Shapiro (1992) used IR with four students with learning disabilities to produce average increases of 5.5 correct words per min (CWPM) per week (range = 1.1 to 16.4), as measured in randomly selected classroom passages that were not directly related to the flashcard material.

Use of an error correction strategy also improves ORF by increasing students' accuracy of word reading. In an early case study, Smith (1979) evaluated the added benefits of error correction to teacher modeling of text and repeated readings. Using a single-case experimental design, Smith found that student's ORF and accuracy improved when the teacher began correcting the student's errors. The student demonstrated an increase of 20 CWPM and a decrease of 4 errors per min (EPM) when error correction was added to instruction in comparison to baseline in which the student read a passage aloud and no instruction or feedback was provided.

Nelson, Alber, and Gordy (2004) examined the effects of error correction and repeated readings on ORF and accuracy across four elementary-aged students. Following

a baseline condition, students were systematically exposed to an error-correction-only condition and a repeated-readings-plus-error-correction condition. Upon implementation of error correction, the number of EPM decreased and the number of CWPM increased slightly. When repeated readings were added to error correction, all four students showed improvements in the number of CWPM and continued decreases in EPM. These and other findings support the value of correcting student errors during repeated readings, as it enhances oral reading accuracy (e.g., Alber-Morgan, Ramp, Anderson, & Martin, 2007; Teigen, Malanga, & Sweeny, 2001).

The most common error correction strategies examined in the literature include word supply, word drill, phrase drill, and syllable segmentation. With the word-supply procedure, when a student makes an error during reading, the instructor states the correct word and the student repeats the word prior to proceeding (Jenkins & Larson, 1979; O'Shea, Munson, & O'Shea, 1984). In the word-drill procedure, the instructor uses word supply during reading and returns to the error word after the student finishes the passage to have the student repeatedly read the error words correctly a specified number of times or to a criterion (i.e., number of consecutive correct reading trials; Jenkins & Larson, 1979; O'Shea et al., 1984). Practice with reading the word may be done by pointing to the word in the text or presenting the word on flashcards. Instructors using phrase drill also use word supply during reading. However, after the student reads the passage, the student repeatedly reads phrases containing the error words in the text or on flashcards until error words are read correctly (Begeny, Daly, & Valleley, 2006; O'Shea et al., 1984). Another strategy—syllable segmentation—may be helpful when students repeatedly miss phonetically regular words. The strategy involves having the instructor

model reading of syllables and blending the syllables to form a word and then having the student practice and independently blend the syllables to read the word (Daly, Persampieri, McCurdy, & Gortmaker, 2005).

O'Shea et al. (1984) used an alternating-treatments design to compare the effects of word supply, word drill, and phrase drill on five elementary-age students' ORF. Findings indicated phrase drill was more effective than word supply and word drill for improving word recognition in context (i.e., accuracy) and both word-drill and phrase-drill strategies produced similar improvements in reading fluency (O'Shea et al., 1984). The increased effectiveness of phrase drill for improving accuracy is likely due to the greater number of opportunities to practice correct word reading in context afforded by the procedure (Begeny et al., 2006).

Despite the effectiveness of word drill and phrase drill, some students may need additional practice with deciphering unknown words. Daly, Bonfiglio, Mattson, Persampieri, and Forman-Yates (2005) added syllable-segmentation error correction to an instructional passage for three elementary-aged boys referred for reading concerns. Contingent on repeated errors on consecutive rereadings of the instructional passage, the experimenter administered syllable segmentation by modeling segmenting and blending the word and having the student segment and blend the word. This strategy may be particularly useful when students routinely misread a word or need assistance with applying phonics skills to reading difficult words in context (Daly et al., 2005).

In summary, error correction enhances repeated readings, as it increases accuracy and provides practice with words (see discussion of flashcard methods for word reading). Phrase drill is the most effective error correction strategy for improving accuracy and

fluency, but other strategies may be easier for some instructors to use. For example, word supply requires less effort as the instructor does not have to keep track or return to the error words following reading. Therefore, if instructors demonstrate difficulty or report that phrase drill is too complex to implement, alternative error correction strategies may be more appropriate and ultimately produce larger effects as a result of more consistent application by the instructor. For example, word drill or word supply used consistently during repeated readings might produce greater effects on reading fluency than phrase drill used inconsistently or incorrectly. Furthermore, some students may find phrase-drill error correction aversive or punishing and display problematic behaviors to escape instruction (Jenkins & Larson, 1979). In these situations, it may be beneficial to use an alternative, less aversive strategy to increase compliance and reading practice during repeated readings. The most effective error correction strategy—phrase drill—should be used unless the strategy is a poor match for the instructor or student.

The third procedure identified by Chard et al. (2002) for building reading fluency was providing performance feedback and contingent reinforcement. Performance feedback and contingent reinforcement are particularly useful in enhancing students' motivation to practice reading, as reading tasks may be aversive and laborious for students with fluency deficits (Haring, Lovitt, Eaton, & Hansen 1978). Instructors may give feedback on the number of words read correctly and incorrectly or deliver a reinforcer contingent on the student meeting an established performance criterion goal. In general, fluency develops more quickly when feedback and reinforcement are provided contingent on accurate, fluent reading or a predetermined goal (Chard et al., 2002). Eckert, Dunn, and Ardoin (2006) examined the effect of feedback on both words read

correctly and words read incorrectly. Students demonstrated increases in fluency when provided with feedback on the number of words read correctly or incorrectly in comparison to a no-feedback condition (Eckert et al., 2006).

Delivery of tangible reinforcers can also increase student motivation during tutoring sessions, which is likely to create a more positive and reinforcing tutoring session for parents. Daly et al. (2005) systematically examined the effectiveness of various instructional strategies with two elementary-aged students with ORF deficits. Both of the students demonstrated fluency gains during a reward condition in which they were allowed to select a reward from a bag for exceeding their previous score by 30%. Based on the brief strategy assessment, a reward-only condition was selected for one of the students because the addition of instructional strategies did not increase his performance above and beyond that achieved by reward only. Use of tangible rewards is an efficient and helpful strategy for encouraging students to improve their fluency and participation in tutoring sessions (Shriver & Allen, 2008). Other effective forms of reinforcement also include praise, visual presentation of graphed data, and access to activities or privileges (Daly, Martens, Dool, & Hintze, 1998).

The three intervention procedures for ORF—explicit modeling, repeated readings, and performance feedback—are effective when used individually, but are typically combined to meet student needs. In a review of the effectiveness of different treatment packages, Burns and Wagner (2008) found that the combination of modeling, repeated readings, and performance feedback with and without incentives to improve reading fluency produced larger effects than each procedure in isolation. The combination of

procedures led to average increases of 30 CWPM, which represents a 73% increase over baseline scores in studies examined.

Combinations of these procedures have also been investigated in the context of brief experimental analysis of ORF (e.g., Daly et al., 2005). In these studies, researchers monitored students' ORF following instruction in one or a combination of the procedures until the most effective and efficient program was identified. Using a multiple-baseline-across-stimulus-materials (i.e., reading passages) design, Noell et al. (1998) assessed fourth-grade students' ORF performance while different treatment combinations were applied. This study began with the least intensive procedures (i.e., reward-only) and moved to more comprehensive packages (i.e., modeling, repeated practice, and reward) if students failed to improve with simpler interventions. Two of the students showed the greatest ORF improvements when instruction included modeling, repeated readings, and reward, whereas only modeling and repeated readings appeared to be needed for the third student. Overall, the students' ORF improved by 59% from baseline to the last treatment assessment. These results demonstrate that different combinations of procedures for enhancing ORF may be needed for different students.

Daly et al. (2005) developed individualized tutoring packages for two students—a fourth-grade and a fifth-grade student, each referred for reading difficulties. A brief experimental analysis was conducted with each student. During the analysis, students were briefly exposed to four conditions: instruction plus contingent reward, no instruction, instruction only, and contingent reward only. Instruction included modeling, repeated readings, and error correction. For the reward component, students were allowed to select a tangible reward contingent on meeting a predetermined goal (i.e., 30%

more correctly read words per min). After each condition was administered, ORF was assessed in generalization passages that contained a high percentage of words found in the instructional passage, but arranged to form a unique story. The individualized programs were implemented to validate the initial effects. Based on visual analysis of the data, the students showed significant increases in ORF over time when the individualized tutoring package was delivered. Based on the *No Assumptions Approach* (Busk & Serlin, 1992), the average effect size across assessment sessions for the students was large (d = 1.52). In general, students with fluency deficits benefit from instruction that includes modeling, three to four repeated readings, and performance feedback or contingent reinforcement. Therefore, there are a number of simple strategies that can be used to improve ORF. The question, however, is who will apply them?

Use of Evidence-Based Strategies by Tutors for Building Oral Reading Fluency

The need for structured parent tutoring interventions. Unfortunately, teachers often have difficulty finding time and resources to supplement fluency instruction for struggling readers in the classroom (Chard et al., 2002; Kameénui & Simmons, 2001). Even when educators provide reading practice, poor readers receive less practice than proficient readers, which results in large, cumulative discrepancies between poor and proficient readers in practice opportunities (Allington, 1984; Cunningham, & Stanovich, 1998; Torgesen et al., 2001). Although teachers strive to provide quality instruction to meet students' needs, time constraints may derail their efforts. Yet, if teachers engage parents as partners to enhance student performance, their combined efforts may improve academic proficiency in areas like reading.

Within the last decade, there has been a growing emphasis on the need for home-school partnerships. At the national level, organizations and governmental policies (i.e., No Child Left Behind; Title I) encourage and require teachers to communicate with and involve parents in activities that support student learning (Epstein & Hollifield, 1996). Specifically for reading, the Learning First Alliance (1998) recommended teachers communicate regularly with parents and provide parents with strategies to enhance reading development in the home. These recommendations are well founded, as home and school are the primary environments that influence children's reading development (Griffin & Morrison, 1997; Lee & Croninger, 1994). Lee and Croninger (1994) examined a subsample of the data (n = 6,099) collected as part of the Education Longitudinal Study of 1998. Data were collected on student reading comprehension and home and school characteristics related to reading, such as availability of reading materials in the home, expectations, and school policies. The findings showed that both home and school factors impacted students' reading comprehension. The authors noted that teachers and parents could work together to encourage reading, as the majority of factors presented were modifiable and could enhance reading skills. Unfortunately, despite a common desire by parents to support their children, they often report that they do not know how to help with reading at home (Baker, 2003). When parents and teachers collaborate and have mutually shared beliefs about reading and ways to help, children demonstrate greater reading achievement (Msengi, 2007).

Teachers and parents have the opportunity to create a positive and collaborative relationship that encourages student success. Home-school collaboration goes beyond earlier conceptualizations of parent involvement (e.g., bake sales, PTA, homework

helper). It is defined by Sheridan, Clarke and Burt (2008) as "a relational process between participants by which unique information, expertise, values, and goals are shared, and the insight gleaned from each party is incorporated into a joint intervention and evaluation plan for which all bear some responsibility" (p. 171). Within this framework, teachers and parents share in the development and implementation of the intervention plans. Giving families an opportunity to contribute to the decision making process is essential for establishing a home-school partnership. In addition, parents are provided with an opportunity to learn information, gain skills, and establish ongoing communication with teachers, all of which are cited by parents as important for building a partnership (Blue-Banning, Summers, Frankland, Nelson, & Beegle, 2004).

There are a variety of benefits of home-school collaboration. In general, when parents are involved, students demonstrate higher achievement, engagement, and better attendance (Christenson, 1995). In fact, when parents work with their children on reading at home, students experience more favorable outcomes than when they receive school-based tutoring alone (Jason, Kurasaki, Neuson, & Garcia, 1993). Promoting home reading programs enhances student achievement because parents can motivate and engage students in structured reading activities outside of school. Parents also benefit from collaboration as they gain a better understanding of the school, improve communication with teachers and their children, and gain confidence in helping with student learning (Christenson, 1995; Sheridan, Taylor, & Woods, 2008). Furthermore, when parents are involved, teachers report greater satisfaction and receive higher ratings on evaluations, and schools are rated as more effective (Christenson, 1995).

Although teachers and parents are important contributors to student reading development, a lack of coordinated efforts across settings often attenuates collaborative efforts to enhance the reading progress of students (Lee & Croninge, 2004; Topping, 1991). Providing training focused on effective tutoring strategies for ORF is one way to meet parents' desires to help and provide students with additional reading instruction. The Task Force on Evidence-Based Interventions in School Psychology (http://www.indiana.edu/~ebi/) found promising evidence in support of parent tutoring for addressing school-based math and reading concerns (Fishel & Ramirez, 2005). Several studies targeting ORF have successfully taught parents how to tutor their children using the three effective procedures identified by Chard et al. (2002) and found corresponding improvements in student reading skills (e.g., Duvall, Delquardi, Elliott, & & Hall, 1992; Erion, 2006; Gortmaker, Daly, McCurdy, Persampieri, & Hergenrader, 2007; Resetar, Noell, & Pelligrin, 2006).

Measuring outcomes in parent-tutoring studies. Both the direct and generalized effects of parent tutoring programs for ORF have been examined in the literature. Measurement of student ORF in tutored passages provides information about the direct effects of parent tutoring. However, as students must generalize improvements to novel texts and situations, researchers have sought for and used various ways to measure generalized effects. For example, Duvall et al. (1992) assessed generalized ORF improvements in reading passages in which the student had not yet received instruction, but which were scheduled for future instructional sessions. Although this method samples responding in novel texts, the passages appearing later in the instructional schedule are likely to be more difficult, as reading curricula are designed to increase in

difficulty level. If passages are not equivalent, changes in student ORF may be a function of text difficulty level as opposed to increases or decreases in actual skill level.

A second way to measure changes in generalized reading proficiency is to use high-word overlap passages (HWO). HWO passages contain many of the same words as those in the tutoring passages, but are rearranged to create a new story (Gortmaker et al., 2007; Persampieri et al., 2006). An advantage of these passages is that they specifically measure transfer of word reading from one story to another. Also, the instructional level of the assessment passages can be engineered to closely match those of the instructional materials. Finally, studies that have used this method have been able to carefully equate difficulty level of measurement materials (Gortmaker et al., 2007; Persampieri, Gortmaker, Daly, Sheridan, & McCurdy, 2006).

A third way in which generalized ORF progress has been measured is through the use of global outcome measures (GOM; Hook & DuPaul, 1999; Gortmaker et al., 2007). To establish a GOM for ORF (e.g., Dynamic Indicators of Basic Early Literacy Skills, AIMSweb), one selects numerous alternate passages (e.g., 20 per grade level) that are of the same approximate difficulty level and are sensitive to student growth, but which are not designed explicitly to overlap with passages used for instruction in the same way as HWO passages. Student progress can be examined over time and changes can be attributed to ORF growth rather than changes in the passage difficulty or differences between curricula used by schools (Kaminski & Cummings, 2008). In addition, student growth and level of performance can be compared to established benchmark goals that indicate the likelihood of student reading success at future time points. Furthermore, rates of growth for a GOM can be compared to established expected and ambitious

growth rates in the literature. Specifically, Fuchs, Fuchs, Hamlett, Walz, and Germann (1993) administered CBM passages monthly to 117 elementary-aged students in five upper Midwestern school districts. Weekly slopes of improvement were calculated for each grade level using least squares regression. In addition to expected rate of growth, the authors estimated ambitious growth rates by adding one standard deviation on the grounds that students who are behind in reading must surpass their peer's average rate of growth in order to catch up (Fuchs et al., 1993; Fuchs, Fuchs, & Hamlett, 1989). The realistic and ambitious weekly growth rates are presented in Table 1. Although these growth rates are limited to the material and population used to create them, they provide at least a rough estimate of the amount of ORF growth one might expect over time. Although this method of measuring generalization is probably less sensitive to growth than use of HWO passages, it probably provides a better overall estimate of generalized ORF improvement. In addition to comparing students' growth to those established by Fuchs et al., researchers can also compare students' level of responding (i.e., CWPM) to national normative data. For example, if AIMSweb probes are used for monitoring performance, the student's performance can be compared to the AIMSweb national grade-level normative data for the appropriate time point during the year (i.e., fall, winter, and spring). The scores for the fiftieth percentile in the spring are also shown in Table 1.

Parent-tutoring study outcomes. Duvall et al. (1992) evaluated a structured parent-tutoring package with four elementary-aged (grades 2-5) children with learning disabilities in reading from two families. The mothers tutored their children using a structured program consisting of repeated readings for a period of 10 min, error correction, and performance feedback (i.e., parent timed the child for 1 min and posted

scores on daily form). The authors measured the direct effects of tutoring in tutored passages using a combined multiple-baseline and reversal design and generalized effects in non-tutored passages from the curriculum. Results indicated clearly discriminable changes in level of reading rate across baseline and tutoring conditions. All students demonstrated higher levels of CWPM at home and at school in tutored passages during the parent tutoring condition (average, 196.1) as compared to the no-tutoring condition (i.e., baseline and withdrawal; average, 127.6). However, only three of the four students showed generalized reading improvements to novel passages that were part of the text from which tutoring passages were drawn (average, 106.8). Unfortunately, the method for measuring generalized improvements may have suppressed possible treatment effects.

Hook and DuPaul (1999) used a similar tutoring program for second- and third-grade students diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD). Second-grade students reading fewer than 40 CWPM and third-grade students reading fewer than 60 CWPM were selected for the study. As students with ADHD are more likely to have difficulty attending to tasks, strategies for managing behavior during tutoring sessions were provided in addition to training in the reading program. Following implementation of tutoring, all four of the students showed increases in ORF in both tutored and GOM passages. However, the number of CWPM was variable for all students across conditions. Weekly growth rates in ORF measured in the GOM passages during tutoring were larger during tutoring (average, .59; range, .26 to .88) than in baseline (average, .23; range, .13 to .43), but did not meet or exceed expected growth rates found in the literature for second- and third-grade students. Researchers have also demonstrated increases in generalized ORF in HWO passages using standardized

programs that include repeated readings, error correction, and contingent reward. Persampieri et al. (2006) found average increases of 30.9 and 52.3 CWPM from pre-tutoring to tutoring conditions across HWO passages for a second- and a third-grade student, respectively.

Resetar et al. (2006) also trained parents to use a structured tutoring program with first grade children referred by teachers as performing poorly in reading. The tutoring program incorporated parent modeling of the passage, repeated readings with feedback, monitoring of student progress, reading silently, and asking the student comprehension questions regarding the text. Notable differences between this program and the one used by Duvall et al. (1992) were that parents were taught to help their child sound out difficult words during reading, prompt students to attend to meaning as they were expected to answer comprehension questions following reading, and monitor reading progress. Four out of five of the participants demonstrated gains in CWPM on tutored passages following three weeks of tutoring (average increase, 21.28 CWPM; range, 14.4 to 30.1 CWPM). Generalized ORF was measured in passages from the classroom reading series. Three of the students demonstrated generalized improvements over the course of the three-week tutoring intervention. The authors noted that two of the students did not appear motivated to engage in tutoring and recommended incorporating a reward contingency to help increase motivation during sessions.

Researchers have created and examined individualized parent tutoring packages based on prior analysis of student response to various combinations of strategies (Gortmaker et al., 2007; Persampieri et al., 2006). Gortmaker et al. (2007) and Persampieri et al. (Experiment 2; 2006) used brief experimental analyses to develop

tutoring programs. Specifically, they administered instructional and motivational strategies in various combinations to identify the most effective and efficient tutoring program for each student participant. The procedures selected for each student differed, as varying combinations of the procedures were effective for the students. For example, some students showed the greatest increases when they received instruction and a reward, whereas other students' ORF decreased when a reward was added to the instructional strategies. Persampieri et al. (2006) validated the individualized tutoring program with parents prior to implementation and found parents produced effects similar to those of the experimenter. The authors then used an adapted alternating treatments design to examine the generalized effects of the individualized tutoring package on three elementary-aged students (grades 1, 3, and 4) across 5 weeks. Experimental control was established, as there was a clear separation of effects between intervention (average, 62.7 CWPM) and control (average, 43.2 CWPM); however, on weeks in which students received fewer tutoring sessions, there was a smaller difference between conditions. Furthermore, the first-grade student demonstrated the smallest difference between conditions, reading only 25% more CWPM in the intervention condition compared to 50% and 40% more CWPM read by the third- and fourth-grade students, respectively. Using a multiple-probe-across-passages design, Gortmaker et al. (2007) reported average increases of 30 CWPM for three fourth-grade students for a 4-week tutoring program. All students showed an immediate increase in level and trend upon implementation of tutoring program across passages. In other words, students' ORF in each passage improved contingent on implementation of tutoring in the passage. These studies indicate that the individualized

tutoring programs were highly effective in improving students' generalized ORF as measured in HWO passages (i.e., Persampieri et al., 2006; Gortmaker et al., 2007).

Gortmaker et al. (2007) also examined the impact of tutoring on generalized ORF measured in GOM passages (i.e., Dynamic Indicators of Basic Early Literacy Skills [DIBELS]; Good & Kaminski, 2002). Students demonstrated a change in level (i.e., baseline average, 47.4 CWPM; intervention average, 59 CWPM) and trend upon implementation of tutoring, but performance remained variable. Although students read more words correctly during the tutoring condition, the effects were not maintained when tutoring ended. Exposing students to a greater variety of texts in multiple contexts may have enhanced the long-term effectiveness of the tutoring program, a generalization strategy that is referred to as training sufficient exemplars (Stokes & Baer, 1977), and which has proven highly effective for Direct Instruction (Gersten, Carnine, & White, 1984). Using varied passages during tutoring and providing students with multiple opportunities to practice reading words may further improve maintenance of generalized ORF.

The results of these studies provide promising evidence that parent tutoring can enhance both direct (i.e., in tutored passages) and generalized (i.e., in untutored passages) ORF. Ongoing, regular measurement of direct effects in tutoring materials and generalization effects in non-tutored materials provides a useful means of evaluating the efficacy of tutoring programs. The types of materials used to measure generalization varied across studies, limiting comparisons between tutoring programs. Use of curriculum materials provided information about how students performed in subsequent passages, but decisions about progress were limited probably because of varying

difficulty levels of the texts. Interestingly, studies that measured CWPM in such passages did not find generalized effects for all students (Duvall et al., 1992; Resetar et al., 2006). The lack of change may have been more a result of changes in story difficulty than changes in student ORF skills. HWO passages also have been useful for examining whether or not the student maintained the words taught in tutoring and transferred word reading to a novel text. However, measurement in HWO passages does not examine ORF in equal-difficulty novel texts that contain a low percentage of words in common with the tutored passages. To obtain an overall indicator of ORF, a GOM should be used. Examining progress using a GOM is also advantageous because the outcomes can be compared to the expected and ambitious growth rates identified by Fuchs et al. (1993). Using the growth rates as a guide provides a way to determine whether or not parent tutoring is effective for an individual student in addition to visual inspection by relevant decision makers. In addition, researchers can use national normative data collected for specific commercially-available GOM (e.g., AIMSweb, DIBELS) to monitor student progress relative to peers. Therefore, researchers should consider measuring direct effects of parent tutoring and generalized effects as measured using a GOM.

Improving parent-tutoring research. In spite of the positive effects achieved in parent-tutoring studies, several shortcomings in the extant studies should be addressed in future studies, including (a) brief length of tutoring phases, (b) identification of students for parent tutoring based solely on teacher referral, and (c) reliance on researchers for training parents. For instance, the length of tutoring phases in the studies discussed earlier averaged 5.75 weeks (range, 3 to 12). Some investigators reported that the length of tutoring might have been too short to show improvements in generalization materials

(e.g., Hook & DuPaul, 1999; Resetar et al., 2006). Providing tutoring for longer periods may enhance the effects of generalized gains in fluency (Gortmaker et al., 2007). Increasing the number of tutoring weeks will also facilitate comparisons to existing growth rates, like those reported by Fuchs et al. (1993). To calculate reliable slope estimates, it is recommended that researchers collect a minimum of 20 data points (Good & Shinn, 1990; Poncy, Skinner, & Axtell, 2005).

Second, previous studies have primarily used teacher referral (Persampieri et al., 2006; Resetar et al., 2006) and disability status (e.g., Duvall et al., 1992; Gortmaker et al., 2007; Persampieri et al., 2006) to identify students for intervention. However, adding selection criteria that ensure students have the necessary prerequisite reading skills (e.g., phonemic awareness, basic letter-sound correspondence) to benefit from strategies for building ORF are needed. VanDerHeyden and Witt (2005) raised concerns about the accuracy of teacher referral for selecting students in need of intervention. For example, in Resetar et al. (2006), teachers referred first-grade students for tutoring and found that only two of the five students showed generalized improvements in ORF. However, the students may not have mastered the necessary letter-sound correspondences for decoding the passages. Persampieri et al. (2006) also found that the student who made the least growth during the intervention had the lowest initial fluency rate and was in first grade as opposed to the other students who were in third and fourth grades. The authors noted the intervention might not have been an appropriate match for his skill level. More careful selection of students based on mastery of prerequisite decoding skills should be conducted to assure that the treatments are adapted to students' skill levels and to maximize the potential effects of tutoring that emphasizes practice and feedback.

Students who are proficient with decoding skills (i.e., demonstrate high accuracy), but slow readers are expected to benefit most from parent tutoring for ORF. If students' accuracy on a GOM of ORF is low, phonics skills can be assessed using a GOM such as nonsense word fluency (e.g., DIBELS or AIMSweb; Good & Kaminski, 2002) or diagnostic measures such as the CORE Phonics Survey (Scholastic Red, 2002).

Another limitation of these studies was that parent training in evidence-based fluency-building strategies was only delivered by researchers. A logical next step is to determine whether the same positive effects can be achieved under more natural conditions. If school personnel could serve as parent trainers, treatment effects may be broader and more sustainable. Although other support personnel (e.g., school psychologist, reading specialist, special education teacher, etc.) could train parents, classroom teachers appear to be the best individuals to provide training because they hold primary responsibility for the child's instruction, meet with parents throughout the school year (i.e., parent-teacher conferences), see the student in the classroom daily, and can provide information to parents about the students' progress in the classroom. Teachers play a key role in encouraging parent involvement (Anderson & Minke, 2007; Walker, Wilkins, Dallaire, Sandler, & Hoover-Dempsey, 2005). Specifically, parents are more likely to be involved when they receive invitations from teachers because the invitations respond to two commonly reported desires of parents: to help their students and to become more knowledgeable about what their students are learning (Hoover-Dempsey et al., 2005). Furthermore, teachers are in a natural position to provide training and support to parents because they are knowledgeable about which students are in need of additional support based on data collected in schools and have greater access to parents than

researchers or clinicians. Building a collaborative relationship between the parent and classroom teacher may produce additional benefits such as improved communication and problem solving for general academic and social behavior skills. Providing parent tutor training in schools with teachers as trainers may increase parents' access to training and provide them with more frequent support.

Unfortunately, schools often adopt less structured programs to encourage home reading (e.g., sending books home, reinforcing completion of reading logs, attendance at family nights; Kelly-Vance & Schreck, 2002). General reading programs may help to increase the amount of time devoted to reading, but simply increasing the amount of time spent in reading activities alone does not necessarily improve student reading. In fact, there is no empirical support for use of informal tutoring strategies (e.g., listening to children read, silent reading) in home settings (NICHD, 2000; Toomey, 1993). The National Reading Panel (NICHD, 2000) synthesized the literature on programs such as Drop Everything and Read and Sustained Silent Reading (e.g., Reutzal & Hollingsworth, 1991; Morrow & Weinstein, 1986) that simply encourage students to read more. The results revealed that, although the programs were commonly described in teacher preparation textbooks and popular in U.S. schools, such programs produced no measureable improvements in reading (NICHD, 2000). Without guidance and support, teachers are likely to go only so far as recommending that parents encourage their children to spend more time reading. Although encouraging reading beyond the school day is a good thing, it is not likely to produce ORF improvements for struggling readers and therefore insufficient for meeting their needs. Additionally, these programs typically assume that parents are knowledgeable about how to help with reading at home (Shumow

& Harris, 2000). Yet, parents commonly report a lack of information on how to help with reading at home. So providing materials in the absence of training is not likely to meet the needs of many parents (Epstein & Hollifield, 1996; LAF, 1998; Li, 2006).

If students are expected to achieve higher standards, strategies that have been shown to improve reading fluency should be used to improve tutoring efforts. To enhance reading, the instruction provided during tutoring must be evidence-based, high quality, and matched to parent and student needs, with more intensive and structured assistance provided for students who struggle (Daly, Martens, Witt, & Olson, 2007; Foorman, & Schatschneider, 2003). Parents want their students to be successful, but some may be reticent to facilitate a partnership or engage in tutoring if they perceive that they lack the necessary skills (Hoover-Dempsey et al., 2005; Lynch, 2002). Although teachers have frequent access to parents and are familiar with student reading needs, they do not typically promote parent use of evidence-based strategies for improving ORF when collaborating with parents (McCutchen & Berninger, 1999; Shumow & Harris, 2000; Swap, 1993). To be effective trainers of parent tutors, teachers should receive training themselves in evidence-based strategies and how to collaborate effectively with parents. In order to expand parent-tutoring strategies to schools, efforts should be focused on promoting teachers' and parents' confidence and competence in partnering and tutoring for ORF. If trained, teachers can better assist parents with structuring the home learning environment and give specific suggestions for how to support development of ORF. Helping parents structure and use strategies to improve learning can be done as part of a collaborative process that builds on family and school strengths (Christenson, Rounds, & Gorney, 1992; Drummond & Stipek, 2004; Sheridan et al., 2008).

Training Tutors

Parents who want to help their children by providing effective practice in reading must receive training. Yet, teachers and parents may not have time or resources to participate in long training sessions during or after school hours. Therefore, an efficient training method is needed. One method for teaching new skills that is well supported in the literature is behavioral skills training (BST), and it may be particularly well suited to the circumstances and demand characteristics of tutor training. BST includes four components: (a) verbal or written instructions, (b) modeling, (c) rehearsal, and (d) feedback (e.g., Lafasakis & Sturmey, 2007; Miles & Wilder, 2009; Miltenberger, 2008). Instructions typically include specific descriptions of the skills and rationales for each component of the intervention. Rationales are important and may function to enhance motivation to participate in training and implement the procedures (Shriver & Allen, 2008). In other words, when parents and teachers understand the importance of an intervention procedure and the positive impact it may have for the student, they are more likely to use the procedure. The second component—modeling—allows the trainee to see the skills correctly demonstrated and increases the likelihood of correct implementation of the skills during practice. Rehearsal—the third component—is a critical component of training as the trainee gains experience with the skills and allows the trainer to shape the target skills by differentially reinforcing the trainee's behavior (Shriver & Allen, 2008). For rehearsal to be effective, feedback—the fourth component—must be provided. Specifically, following rehearsal, the trainer corrects the trainee's errors and praises or otherwise reinforces correct performance. It is essential for trainees to accurately practice the target skills and experience success. Training that

includes practice and requires that trainees reach a criterion level of performance prior to implementation is related to greater generalization and higher levels of adherence (DiGennaro, Martens, & McIntyre, 2005; Miller & Kratochwill, 1996; Persampieri et al., 2006; Thurston & Dasta, 1990). Generalization of skills to the home can be improved by simulating the natural context in which tutoring will happen (Shapiro, Miller, Sawka, Gardill, & Handler, 1999; Stokes & Baer, 1977). For example, involving the child in parent training creates a more realistic situation and allows the parent to immediately contact potentially reinforcing contingencies (i.e., seeing their child improve) during the training (Duvall et al., 1992; Law & Kratochwill, 1993). Additionally, parents may be encouraged to include siblings in the training practice, as parents have cited difficulty implementing tutoring due to caring for other siblings (Hook & DuPaul, 1999).

BST has been successfully used to teach diverse individuals a variety of skills including staff safety (Nabeyama & Sturmey, 2010), child abduction-prevention (Gunby, Carr, & LeBlanc, 2010), teacher behavior management (Plavnick, Ferreri, & Maupin, 2010), and parent tutoring (Hook & DuPaul, 1999). For example, Plavnick et al. (2010) used BST to teach educators how to use a token economy in their classrooms. Teachers demonstrated a 27% increase in the percentage of steps completed correctly from baseline to post-training based on a procedural checklist of specific components of the intervention.

BST has also been used to teach parents how to work with their children. Miles and Wilder (2009) used BST to teach parents with little prior experience to use a guided-compliance procedure. Across parents, the baseline percentage of steps completed averaged 34%, whereas after training the percentage of steps completed increased to

96%. Lafasakis and Sturmey (2007) used BST to teach parents to use discrete-trial teaching with their children with developmental disabilities. The discrete-trial teaching targeted gross motor imitation and vocal imitation skills. On average, parents in this study showed an increase of 37% of correct teaching responses from baseline to post-training. Hook and DuPaul (1999) used BST to teach parents how to provide tutoring for ORF. During training sessions, the researcher described tutoring strategies, provided a model of the tutoring strategies, and had parents practice using the skills with their child while providing feedback. Following training, parents correctly implemented at least 85% of the tutoring steps. Resetar et al. (2006) also found high levels (i.e., range, 82 to 100%) of adherence to tutoring procedures following training that included three of the four components of BST—instructions, modeling, and rehearsal. Systematic feedback was not provided, but the researcher and parent discussed the procedures following rehearsal and the researcher answered parents' questions. Although these studies integrate the four components of BST, the training did not require proficiency with the skills before beginning implementation. Prior to asking parents to tutor their children, Gortmaker et al. (2007) required parents to rehearse tutoring skills with feedback until they correctly followed all of the steps. Similar to previous findings, parents completed an average of 89% of the tutoring steps across tutoring sessions following training.

BST can be made more efficient by delivering two of the components—instructions and modeling—via a video. Technology decreases reliance on researcher support and may provide greater training flexibility (Slider, Noell, & Williams, 2006), as trainees can view the video at any time of the day. The use of technology as a method of training has received considerable attention in recent years. Research indicates video

training is an effective and acceptable means for teaching skills to educators and parents (Blom-Hoffman, O'Neil-Pirozzi, Volpe, Cutting, & Bissinger, 2006; Macurik, O'Kane, Malanga, & Reid, 2008). In fact, there are many advantages of incorporating video-based training in BST, including the standardization of training, cost and staff time efficiency, and the opportunity for participants to observe people similar to themselves model the strategies (Blom-Hoffman et al., 2006).

Catania, Almeida, Lui-Constant, and DiGenarro-Reed (2009) used video training that included a description and model of the target skills to successfully improve teachers' use of skills during role-play and generalization sessions with a student. Specifically, adherence improved from 21% of steps completed during baseline to above 85% after teachers viewed a brief video 10 min prior to each session. Similarly, teachers have demonstrated greater adherence when given the opportunity to watch a video model prior to sessions than when they were given only written instructions (Collins, Higbee, & Salzberg, 2009). DiGennaro-Reed, Codding, Catania, and Maguire (2010) also examined the effects of video modeling on teacher implementation of behavioral interventions. Teachers demonstrated immediate increases in implementation, but performance did not stabilize until performance feedback was added. Slider et al. (2006) used a brief self-study training format to provide teachers with professional development in the use of classroom management skills. Following training that included skill steps with definitions, a summary card, a video that included a rationale for and demonstration of classroom management strategies, and a self-test, teachers demonstrated improvements in their skills, but rehearsal and feedback appeared to be necessary for some teachers.

Use of video training with parents has also produced positive findings. Blom-Hoffman et al. (2006) used video instruction to teach parents to use specific reading strategies (e.g., use of page and evaluation prompts, expansion, and repetition) with their preschool-aged children. Following video instruction, parents showed improvements in the use of some, but not all of the strategies, especially those with which parents were less familiar (e.g., expansion, recall, and repetition).

Incorporating video-based training into BST is a promising way to increase the efficiency of BST. Use of video training for the first components of BST—instructions and modeling— would allow teachers and parents to receive standardized and accessible information about parent tutoring. Training videos can be watched at alternative times outside of the regular school day, which allows for greater flexibility in training. The other components of BST—rehearsal and feedback—can then be included during a brief collaborative meeting between the teacher and parent. By viewing an introductory video separately and on their own prior to meeting, more time during the meeting can be devoted to planning for tutoring and practicing selected strategies. Additionally, as video training provides teachers and parents with relevant information about intervention components and rationales for their use, they can more easily engage in shared planning for the intervention. Therefore, BST that incorporates video technology may help to strengthen school-based efforts to train parents to be effective tutors.

Other Strategies to Enhance Parent Tutoring Implementation

Hagermoser-Sanetti and Kratochwill (2009b) define treatment integrity or fidelity as the "extent to which essential intervention components are delivered in a comprehensive and consistent manner by an interventionist trained to deliver the

intervention" (p. 448). Interventions and research conducted under natural conditions (e.g., schools with teachers, homes with parents) are at higher risk for poor implementation (Dane & Schneider, 1998; McIntyre et al., 2007). Parents have experienced difficulty providing tutoring as frequently as requested by researchers and findings indicate that on weeks when tutoring is not provided or provided with insufficient frequency, ORF gains are smaller (Persampieri et al., 2006). In addition to negative impacts on student outcomes, low levels of treatment integrity result in inefficient use of time and resources (DiGennaro et al., 2005, DiGennaro, Martens, B., & Kleinmann, 2007; Toomey, 1993; Wilder, Atwell, & Wine, 2006).

For parent tutoring to be effective, parents must generalize the skills learned during training to the home setting and maintain implementation long enough for student ORF goals to be met. As high treatment integrity is desirable for interpretation of results (i.e., one is more readily able to attribute changes to the intervention), future research should incorporate practical strategies to enhance implementation of parent tutoring. Several strategies have been shown to increase levels of treatment integrity (e.g., DiGennaro, Martens, & McIntyre, 2005; Hagermoser-Sanetti, Luiselli, & Handler, 2007; Noell, Witt, LaFleur, Mortenson, Ranier, & LeVelle, 2000), including (a) selection of a straightforward and simple tutoring program, (b) collaborative plan development, and (c) performance feedback.

To begin, a simple and efficient tutoring program should be used because as the complexity of the procedure increases, treatment integrity is likely to decrease (Allen & Warzak, 2000). Tutoring procedures that are flexible, simple, clear, manageable, and require little effort are more likely to be used (Friman & Poling, 1995; Topping, 1987).

In addition, the amount of time required for implementation and accessibility to materials and resources necessary may impact treatment integrity (Gresham, MacMillan, Beebe-Frankenberger, & Bocian, 2000). In general, higher treatment integrity is associated with simpler procedures that require less time and resources, and use readily accessible materials (Detrich, Keyworth, & States, 2007; Gresham et al., 2000). In other words, procedures are more likely to be implemented as designed when the procedure is practical and fits the natural context. Providing parents with tutoring materials and carefully selecting individual or combinations of evidence-based strategies that meet student skill needs may decrease the complexity of tutoring programs. Fortunately, strategies such as repeated readings and performance feedback are simple, effective, and require little time to implement. For example, a tutoring session that incorporates multiple instructional strategies (e.g., modeling, repeated readings, etc.) may take no more than 20 min to complete.

Collaborative development of a tutoring plan may also enhance treatment integrity. Parents and teachers are important contributors to student learning and should be given the opportunity to participate in decision making around intervention development (Sheridan & Kratochwill, 2008). Collaboratively developed interventions are more likely to match the implementer's skill level and needs, as well as the environments where the intervention is to be implemented (Kelleher, Riley-Tillman, & Power, 2008). Prescribing the same pre-specified plan may not be appropriate for all parents as skill levels and preferences vary. In general, when the difficulty level of a task approaches or exceeds a parent's skill level, the parent is less likely to provide assistance with the task (Hoover-Dempsey et al., 2005; Lynch, 2002). For example, if a parent has

difficulty (real or perceived) reading aloud, asking the parent to model a passage as part of the tutoring plan is likely to result in low treatment integrity for that component. Involving parents as partners in the development of the tutoring program may eliminate procedures that are aversive or too difficult for the parent to implement.

A recently conducted study suggests that an intervention developed through a collaborative model may also enhance treatment integrity as the parents and teachers engage in the decision-making process and development of the intervention. Kelleher et al. (2008) compared a collaborative consultation model to an expert-driven model on teachers' levels of treatment integrity in the classroom (measured as the percentage of steps completed on a procedural checklist). In collaborative consultation, the consultant and teacher worked together to develop an acceptable and agreed upon intervention that included strategies drawn from a list of evidence-based reading activities. In the expert model, the consultant prescribed the reading intervention to be implemented. Teachers demonstrated higher and more consistent levels of adherence based on a procedural checklist in the collaborative consultation condition compared to the expert-driven consultation condition.

Within the parent tutoring literature, tutoring interventions have been prescribed with little attention given to parental input in the decision making process. In school settings, a status differential is often perceived to exist between parties, with teachers exerting more power (Schulte & Osborne, 2003). Schulte and Osborne (2003) argued that collaborative models may equalize any power differential that exists between the parent and teacher because both parties are seen as valuable contributors. Moving towards development of tutoring plans for ORF within a collaborative setting would be

beneficial, as consultees are more likely to accept information and develop plans that fit their individual contexts (Schulte & Osborne, 2003). Development of an alliance or rapport is often an important component for developing collaborative interventions and is associated with positive outcomes (McLeod, Southam-Gerow, & Weisz, 2009). Hoover-Dempsey and colleagues (Hoover-Dempsey & Sandler, 2005; Hoover-Dempsey, Walker, Jones, & Reed, 2002) have developed several self-report rating scales to examine family-school relationships including parents' perceptions of their ability to help with academic tasks and structure learning activities and teachers' beliefs about the importance of parent involvement and perceptions of parents' ability to help students succeed (see http://www.vanderbilt.edu/peabody/family-school/).

Collaborative plan development provides for choice of intervention strategies, which may increase the reinforcing value of implementing the intervention (Tiger, Hanley, & Hernandez, 2006). Providing choice of tasks has been shown to increase engagement, access to preferred tasks, and decrease escape-maintained behaviors (Dunlap, et al., 1994). Inviting and involving teachers and parents to select tutoring plan components allows them to choose preferred strategies, thus potentially increasing motivation and decreasing avoidance. For example, if a parent has difficulty reading, a packaged program that requires the parent to read passages aloud to his or her child or correct errors may result in an aversive tutoring experience for the parent. In turn, the parent may want to avoid tutoring in the future. Avoidance of tutoring would decrease student exposure and/or parental adherence to the tutoring plan. If, however, instead of giving the parent a packaged program, he or she was given choices of tutoring strategies, the parent could select preferred strategies that are within his or her skill repertoires. For

example, parents may choose to use word-supply error correction as opposed to phrase-drill error correction because they have difficulty remembering errors made and insufficient time to have students repeatedly practice phrases. Parents may also choose strategies they find reinforcing. A parent may select performance feedback and graphing to visually observe how each tutoring session helps, as students may not demonstrate large improvements in generalized ORF immediately following the first tutoring session. Selection of preferred evidence-based strategies may provide a useful way to engage parents and create plans that have a high likelihood of being implemented.

Providing performance feedback to the tutor for appropriate tutoring behaviors also can enhance treatment integrity. Because reading is a complex skill and improvements occur gradually, it is important to incorporate immediate feedback to maintain parental implementation. Performance feedback is the most researched and effective method for increasing treatment adherence (Codding, Feinberg, Dunn, & Pace, 2005; Hagermoser-Sanetti et al., 2007). Performance feedback typically involves an observer (e.g., consultant, researcher) meeting briefly with the implementer after observing implementation of the program to provide verbal, written, and/or graphic feedback on implementation of the plan (Noell et al., 2005). Positive feedback (e.g., praise, graphic depiction of high treatment integrity) is provided for components accurately implemented, and corrective feedback (e.g., review of the components and how to implement, practice components) is provided for components that are missed or not accurately implemented (Codding et al., 2005; Hagermoser-Sanetti et al., 2007; Noell et al, 2000). For example, Persampieri et al. (2006) listened to recorded tutoring sessions

and provided feedback on the steps completed correctly and incorrectly with parents to prompt future adherence to the tutoring steps.

Although useful, directly observing implementation of treatment steps may not be practical or feasible for teachers. Therefore, feedback may be more consistently provided through brief contacts focused on review of procedural checklists completed by the parent (Mortenson & Witt, 1998; Plavnick et al., 2010). In addition to providing a measure of adherence, procedural checklists have been shown to prompt, or set the occasion for, correct implementation of intervention procedures (McIntyre et al., 2007). Plavnick et al. (2010) examined the impact of self-monitoring using a component checklist on their adherence to a behavior management intervention. Upon implementation of the self-monitoring plan, teachers' scores increased from 52% to 89% of the steps completed correctly. The results demonstrate that self-monitoring was easy to implement, required little external support, improved treatment adherence and student performance.

During regular contacts, contingent teacher attention for positive tutoring behaviors as a part of the feedback cycle may promote and maintain parent tutoring. Teachers can be taught to develop rapport with parents and develop a relationship in which the teacher's behavior may become reinforcing to the parent (Shriver & Allen, 2008). Behaviors associated with creating rapport include praising efforts, focusing on strengths, using reflective statements, actively listening, and inviting the parent to be part of the decision making process (Shriver & Allen, 2008). Ongoing communication regarding the tutoring and student performance is important for maintaining rapport and continued collaboration and may take place when parents are picking up their students,

by phone, or by email. If contact with the teacher becomes a conditioned reinforcer for the parent, teacher praise and attention can be used to reinforce tutoring behaviors in the parent until he or she can be naturally reinforced by improvements in the student's reading behavior (Allen & Warzak, 2000).

As low levels of treatment integrity are associated with decreases in student performance and poor outcomes, it is necessary to integrate strategies to enhance treatment integrity in tutoring programs. Strategies that set the occasion for high levels of treatment integrity and provide reinforcement of tutoring behaviors should be used in school settings. Specifically, practical strategies that can be used in schools by teachers include developing a simple and effective tutoring program, collaborating with parents to devise tutoring plans, and providing feedback for tutoring behaviors.

Measurement of Treatment Integrity

Measuring treatment integrity is necessary for accurate interpretation of treatment results and for identification of the circumstances under which an intervention is effective (Greenwood, 2009). Assessment of treatment integrity provides stronger evidence that change or lack of change in the dependent variable is a result of implementation of the independent variable (McIntyre et al., 2007). In other words, treatment integrity data are central to making valid and informed decisions and conclusions about the effectiveness of an intervention (Hagermoser-Sanetti & Kratochwill, 2009b). Examining treatment integrity data concurrently with outcome data is thus likely to lead to better instructional decisions. For example, if a student does not meet an expected goal, one may mistakenly assume that the intervention was inappropriate or did not meet the student's needs. In

this example, it is entirely possible that the student may benefit from the program when implemented with high treatment integrity.

Additionally, treatment integrity data reveal information about the feasibility of implementation, which is particularly useful when examining outcomes in naturalistic settings (Dusenbury, Brannigani, Falco, & Hansen, 2003). In general, without careful specification and measurement of the independent variable, environmental events (i.e., the intervention or extraneous events) responsible for changes in the target behavior of interest are unknown. Therefore, it is recommended that schools collect and use treatment integrity data to make informed instructional decisions for students (National Association of State Directors of Special Education, 2008).

Despite the importance of treatment integrity to objectively establish that the independent variable was indeed delivered as planned, it is measured only infrequently in research. Peterson, Homer, and Wonderlich (1982) described a "curious double standard" (p. 478), as dependent variables in research are closely specified and monitored whereas evidence of implementation is often ignored or it is assumed that interventions or the independent variable is delivered as planned. In a review of school-based intervention studies published in the *Journal of Applied Behavior Analysis* between 1990 and 2005, McIntyre et al. (2007) found that only 30% of the studies reviewed reported treatment integrity data. More recently, Hagermoser-Sanetti, Gritter, Dobey (2011) conducted a review of intervention studies published in four school psychology journals between 1995 and 2008. Results showed that only 50.2% of the coded studies included quantitative treatment integrity data. Although these data are more positive than those reported in earlier reviews (Gresham, Gansle, & Noell, 1993; McIntyre et al., 2007;

Peterson et al., 1982), the lack of evidence that the independent variable was delivered as planned in a sizable portion of the intervention research should cause major concern in a field that claims to strive for increased rigor to meet mandates for evidence-based practice.

Fortunately, within studies examining parent tutoring for ORF, researchers have routinely collected data on treatment adherence and noted impacts of dosage on treatment outcomes. Measurement of adherence, or the ratio of critical treatment components observed to the components specified, is an important and the most frequently used measure of treatment integrity (Schulte, Easton, & Parker, 2009). Adherence provides valuable, objective information about the extent to which the specified treatment is provided (i.e., correctly and incorrectly delivered steps). Researchers have assessed adherence in parent tutoring research by examining the accuracy of implementation according to procedural checklists that include essential steps or components of the intervention (e.g., Duvall et al., 1992; Gortmaker et al., 2007). During implementation of the program, the treatment provider or observer checks whether each step is completed accurately. The number of correctly completed steps is divided by the total number of steps to produce a percentage steps completed correctly.

For example, Duvall et al. (1992) measured adherence by calculating the percentage of accurate tutoring responses made by parents. On average, parents accurately responded to 92 to 99% of child responses. Hook and DuPaul (1999) measured adherence by calculating the percentage of components completed according to a procedural checklist. According to the checklist, treatment integrity was at or above 85% throughout the duration of the study. Similarly, parents taught to deliver a

structured tutoring program and monitor their students' ORF have demonstrated high adherence during the tutoring sessions (range, 82 to 100% of tutoring steps on the procedural checklist). Furthermore, parents trained to deliver individualized tutoring packages have demonstrated high accuracy (i.e., average ranges, 88-89%) across sessions according to a procedural checklist (Gortmaker et al., 2007; Persampieri et al., 2006).

Adherence has also been assessed by examining permanent products created during the program (e.g., Persampieri et al., 2006; Resetar et al., 2006). For example, Resetar et al. (2006) asked parents to complete and return progress monitoring logs weekly. Each component on the progress monitoring log was scored as complete or incomplete (e.g., "Student scores are filled in," "Indicate whether child beat previous score"). Other permanent products that could be used to examine adherence include weekly calendars, tutoring logs, and graphs showing the number of words read correctly by the student. In general, permanent products produced as part of parent tutoring programs can serve as a method for monitoring adherence, but are limited, as they do not provide a direct, objective measure of integrity (i.e., products can be created even if tutoring does not take place).

Anecdotal reports regarding the recommended and actual dosage of tutoring sessions have also been provided in the tutoring literature (e.g., Duvall et al., 1992; Resetar et al., 2006). Measurement of dosage or exposure to the intervention is critical because development of ORF is highly related to opportunities to respond and instructional time spent reading (Torgesen et al., 2001). Furthermore, providing shorter tutoring sessions spaced across days leads to more learning than longer tutoring sessions across fewer days (Dempster & Farris, 1990). Dosage may be measured through logs,

self-reports or recordings of sessions to determine the amount of the intervention received compared to the amount prescribed (Dusenbury et al., 2003).

Hook and DuPaul (1999) reported anecdotal information about the dosage, or amount of tutoring students received. Parents only delivered tutoring sessions two to four times per week even though they agreed to tutor their children three to four times per week. Similarly, Persampieri et al. (2006) found that some parents did not implement tutoring as frequently as agreed. As noted earlier, when parents did not provide tutoring as frequently as planned, gains in ORF were smaller. Across these studies, the parents reported having difficulty implementing the procedures because younger siblings needed attending and the child's intensity of homework demands. Dosage must be considered, as student outcomes are impacted by the amount of tutoring provided.

These studies show that parents can be trained to implement formal tutoring strategies with high adherence (i.e., above an average of 85%), but parents may struggle to find the time to tutor their children more than three times per week. It is essential for researchers to continue to measure adherence and dosage because low levels of one or the other are likely to produce smaller improvements than expected (Hook & DuPaul, 1999; Persampieri et al., 2006).

Within the last decade, several researchers have recommended extending assessments of treatment integrity to more closely capture the extent to which an intervention is implemented as planned (e.g., August, Bloomquist, Lee, Realmuto, & Hektner, 2006; Dane & Schneider, 1998; Power, Blom-Hoffman, Clarke, Riley-Tillman, Kelleher, & Manz, 2005; Schulte et al., 2009). According to Dane and Schneider (1998), a comprehensive assessment should incorporate multiple dimensions of treatment

integrity including adherence, dosage, quality, and participant engagement. Measuring and reporting on additional dimensions of treatment integrity relevant to parent tutoring is likely to provide additional information about how and under what conditions tutoring programs work. More careful examination of these dimensions of treatment integrity may allow us to better understand the mechanisms that can make parent tutoring more effective. In the remainder of this section, additional dimensions of treatment integrity that are relevant to parent tutoring research are discussed and examined.

Two additional dimensions of treatment integrity may have a substantial impact on the degree to which positive treatment outcomes are achieved—tutoring quality and engagement. For example, if two parents accurately deliver all of the steps of a tutoring program (i.e., high adherence), but one does so with higher quality (e.g., specific and sincere praise, enthusiastic, reading with expression) than the other, the student who receives all of the components of the program with high quality may demonstrate greater gains. In another scenario, if steps of a program are delivered, but the student is not actively engaged in the session, then they are likely to show less progress than those who actively attend to instruction and receive multiple opportunities to respond.

Dane and Schneider (1998) define quality of delivery as "a measure of qualitative aspects of program delivery that are not directly related to the implementation of prescribed content, such as implementer enthusiasm, leader preparedness…" (p. 45). Whereas measurement of adherence is conducted to determine *whether* the program's steps are delivered, measurement of quality provides information about *how well* the steps of a program are delivered. Quality elements important to intervention delivery have typically been assessed along a continuum or Likert scale (Dusenbury et al., 2003).

August et al. (2006) used a 4-point Likert scale to examine quality elements thought to enhance intervention effectiveness in an advanced-stage effectiveness trial (e.g., relationship building, communication, problem solving, goal setting). Importantly, the observers were able to reliably assess quality of implementation. Results showed that the participants delivered the intervention with moderate to high quality across components (means = 3.2, 3.8, and 3.6). Meisinger, Schwanenflugel, Bradley, and Stahl (2004) also used a Likert scale to examine the impact of several variables on the quality of peer interactions (e.g., emotional support, conflict management, and on/off task behavior) during partner reading in a second grade classroom. Relationships between variables such as using heterogeneous student pairings and providing specific initial directions were positively associated with higher quality interactions.

In another study, Harachi, Abbot, Catalano, Haggerty, and Fleming (1999) evaluated an elementary school program aimed at decreasing delinquency and substance abuse and increasing students' social competency. Teachers were taught several strategies to use in their classrooms, including praising students, setting clear procedures, checking for understanding, and providing opportunities for cooperative learning. Researchers conducted classroom observations using a structured observation form that included each of the strategies taught during trainings. For each strategy, teachers were rated on whether or not the strategy was used (i.e., adherence) and how well the teacher implemented the strategy on a three-point scale (i.e., quality). To increase objectivity of the observations, each point on the scale contained a behavioral descriptor. For example, for giving praise, teachers received the highest quality coding value if praise was specific and emphasized students' internal attributions and the lowest value if praise was

nonspecific. The authors then examined the impact of different quality levels on student behavior. Findings indicated that students' social competency improved more when teachers implemented the strategies with high quality. Students whose teachers scored one standard deviation below the average in quality of implementation, on the other hand, demonstrated declines in social competence. Although teachers used strategies described in training, those who did so with higher quality produced better outcomes. Data regarding the quality of implementation were essential to making accurate decisions about the effectiveness of the intervention program and may inform future training and implementation of the intervention.

This researcher has been unable to find existing measures to assess the quality of parent tutoring. However, given that quality of strategy implementation varies among teachers (Harachi et al., 1999), parents are also likely to differ in how well they implement tutoring strategies. Collecting data on the quality of implementation for each component included in a tutoring program may enhance interpretation of student outcomes. To capture quality of implementation, researchers could incorporate a Likert-rating scale into procedural checklists that outline the essential treatment components. Specific behavioral descriptors for each rating should be clearly specified to increase reliability and objectivity of measures. For example, if listening passage preview is included, parents may receive a higher quality rating if they read the story at an appropriate speed with expression and a lower quality rating if they read the story too quickly and without prosody.

Even if an intervention is delivered with high quality, desired outcomes may not be achieved if participants are not actively engaged while the intervention is administered

(August et al., 2006). It is therefore critical to measure participant engagement. Schulte et al. (2009) described engagement as the "extent to which participant engaged with treatment or found it relevant" (p. 463). The amount of time a student is actively engaged in reading is highly related to learning and achievement (Gettinger & Siebert, 2002). In other words, students who are actively engaged during instruction receive more opportunities to practice skills with immediate feedback than students who are not engaged. Opportunities to respond and immediate differential feedback lead to more rapid learning (Belfiore, Skinner, & Ferkis, 1995; Greenwood et al., 1984; Skinner, Fletcher, & Henington, 1996). Active student engagement includes observable behaviors such as reading aloud and answering comprehension questions and can be measured via direct observations.

It is imperative to examine the degree to which parent tutoring is delivered as planned in order to correctly interpret intervention results. Use of a comprehensive model of treatment integrity that includes measurement of adherence, dosage, quality, and engagement would provide a more complete picture tutoring programs and their effects as each component represent an important aspect of intervention delivery (Dane & Schneider, 1998). Specifically, data on adherence show whether or not components of an intervention are delivered, dosage provides information about how frequently the intervention is provided, quality indicates how well the components are delivered, and engagement shows whether or not students actively participate in the intervention. When levels of some or all of the dimensions are low, interventions have been found to produce poorer results than expected (e.g., DiGennaro et al., 2005; DiGennaro et al., 2007; Harachi et al, 1999; Persampieri et al., 2006; Toomey, 1993; Wilder et al., 2006).

However, little is known about how the dimensions interact and levels necessary for interventions, particularly parent tutoring, to be effective. Therefore, extending data collection to include multiple dimensions of treatment integrity may help researchers to more objectively consider the aspects of tutoring programs that may facilitate positive outcomes for students in school settings and allow for more targeted training efforts.

Purpose of the Present Study

Many students struggle to become fluent readers, which negatively impacts school success (LAF, 1998; NCES, 2010; Shaywitz et al., 1999). Although evidence-based procedures for enhancing ORF exist, teachers may not have enough time or resources to use the strategies during the school day (Kameénui & Simmons, 2001). One solution is to involve parents as meaningful partners in developing students' ORF. In fact, parents report wanting to learn more about how to help with reading at home (Baker, 2003). However, the efficacy of parent tutoring when teachers serve as trainers is unknown. Teachers are in a natural position to reach parents, but appear to need support to provide training to parents in the use of evidence-based tutoring programs for ORF. Once trained, teachers will need an effective and efficient model for tutor training, given the time and resource constraints under which they operate. BST is one such model that can be adapted to incorporate instructions and modeling via a video component to provide a potentially effective, yet efficient method for teaching teachers to train parents. To obtain a more complete picture of the effects of training and parent tutoring on ORF, multiple dimensions of treatment integrity should be measured, including adherence, dosage, quality, and student engagement.

The purpose of the current study was to extend the literature base by preparing teachers to engage parents as tutors to improve students' ORF. Specifically, this study: (a) examined the impact of an evidence-based parent tutoring plan that was collaboratively developed by the teacher and parent on students' ORF; (b) identified the degree to which parents delivered tutoring to students along multiple dimensions of treatment integrity (i.e., engagement, adherence, dosage, and quality); (c) determined the extent to which parents' and teachers' perceptions about parent involvement and students' attitudes towards reading changed following parent tutoring; and (d) ascertained the social acceptability of the training and tutoring strategies. As such, this study extended parent tutoring to a more natural context in which teachers and parents collaborated to develop and implement a parent-tutoring plan with students struggling with ORF. Additionally, more stringent selection criteria were used to determine the appropriateness of parent tutoring for ORF prior to implementation. The length of the tutoring period was also extended to examine the effects of parent tutoring using reliable slope estimates. Furthermore, given the importance of treatment integrity, this study more closely considered multiple dimensions of treatment integrity.

Teachers were trained in effective strategies for improving ORF and how to engage parents as tutors. Training for teachers and parents included the four components of BST—instructions, modeling, rehearsal, and feedback. To increase the flexibility and efficiency of training, instructions and modeling were delivered via a video provided by the researcher. In addition to providing high-quality training to a set criterion level of performance, other components were added to increase the likelihood of correct and consistent implementation. To begin, rather than prescribing a specific tutoring program,

parents and teachers collaboratively developed an individualized tutoring package and tutoring plan for implementation based on evidence-based tutoring strategies for ORF. In other words, parents and teachers selected evidence-based tutoring strategies that they felt best fit the needs of the student as well as parents' skills and preferences. Collaborative plan development and selection of simple, clear, and manageable strategies has been shown to enhance treatment integrity (Friman & Poling, 1995; Kelleher et al., 2008; Topping, 1987). Furthermore, parents and teachers arranged for regular, brief contacts in which teachers had the opportunity to provide feedback on implementation based on procedural checklists completed by parents and student ORF data collected in the classroom. The impact of the intervention was examined in terms of student outcomes, perceptions of parent involvement and student attitudes towards reading, and treatment integrity of implementation.

Four research questions were addressed. The first research question was related to treatment integrity:

1. Does teacher-provided BST in an evidence-based and collaboratively developed tutoring program for ORF (including video instructions and modeling) result in high levels of parent-tutoring treatment integrity, including the dimensions of adherence, dosage, quality, and engagement?

It was hypothesized that parents would demonstrate high levels of treatment integrity (i.e., adherence, dosage, quality, and engagement), as the training included all of the components of BST, required mastery of the skills prior to implementation, and allowed for collaborative plan development (DiGennaro, Martens, & McIntyre, 2005; Taylor & Miller, 1997). BST has been used effectively across a variety of skills (e.g.,

Gunby, Carr, & LeBlanc, 2010; Hook and DuPaul, 1999; Nabeyama & Sturmey, 2010; Plavnick et al, 2010). Additionally, findings show that video instructions and modeling also lead to skill improvements (e.g., Blom-Hoffman et al., 2006; Catania et al., 2009). Furthermore, parents worked with teachers to collaboratively select tutoring strategies that fit student and parent needs. Choice making within a collaborative framework has been shown to improve treatment integrity, as parents are more likely to select preferred strategies within their skill range (e.g., Kelleher et al., 2008). Providing choice is thought to increase the reinforcing value of implementation of the selected tasks and thereby decrease task avoidance (i.e., not doing the plan), as aversive or burdensome tasks can themselves be avoided by the individual making the choice (Dunlap et al., 1994). Additionally, inclusion of shared decision-making (Christensen, 2004) and frequent communication between the teacher and parent regarding implementation and goal attainment (Noell et al., 2005) have also been shown to improve treatment integrity. Information about treatment integrity is important for making accurate decisions about student outcomes. If tutoring is not provided accurately with high quality and in sufficient dosage, students are less likely to make expected gains in ORF (Persampieri et al., 2006; Hook & DuPaul, 1999).

The second research question was related to student outcomes:

2. Does tutoring provided by parents who are trained by teachers to implement a structured and collaboratively developed program that includes evidence-based tutoring strategies improve students' ORF and comprehension measured using a GOM?

It was hypothesized that students' generalized ORF and comprehension would increase during tutoring because students would be given increased opportunities to practice reading with parental guidance (e.g., Erion, 2006; Fishel & Ramirez, 2005). Additionally, the packaged program included empirically supported procedures for building ORF such as listening passage preview, repeated readings, error correction, and performance feedback (Chard et al., 2002; Erion, 2006; Fishel & Ramirez, 2005). In addition, previous research indicates that students show improvements in ORF when provided with evidence-based parent tutoring (e.g., Gortmaker et al., 2007; Hook & DuPaul, 1999). Furthermore, if students' ORF improves, corresponding improvements in reading comprehension are expected, as students are able to devote more time to understanding what was read (Adams, 1990).

The third research question was related to perceptions and attitudes towards parent involvement in schooling and reading:

3. Do teachers' ratings of beliefs about involving parents, parents' ratings of involvement, and students' attitudes towards reading change following parent training and parent tutoring for ORF?

It was hypothesized that teacher and parent beliefs about involvement would change in the direction of improvement following training and tutoring strategies for enhancing involvement will be used. Specifically, teachers invited parents to be involved in their students' education and provide training to increase parents' skills for helping with reading at home (Anderson & Minke, 2007; Hoover-Dempsey et al., 2005; Walker et al., 2005). Furthermore, it was hypothesized that students' attitudes towards reading would improve if ORF rates increased during parent tutoring. Students who read fluently

are more likely to engage in reading for pleasure as reading is not laborious or aversive and they are better able to gain meaning from what is read (Cunningham & Stanovich, 1998; Stanovich, 1986). Therefore, students who find reading to be effortless and enjoyable are likely to have positive attitudes towards reading.

The final research question was related to social validity:

4. Does teacher-delivered parent training for tutoring lead to favorable social validity ratings for BST training and parent tutoring for teachers, parents, and students?

It was hypothesized that teachers, parents, and students would rate the procedures and strategies as socially valid because the strategies have been shown to be effective and require a short amount of time (i.e., 20 min) to implement (e.g., Gortmaker et al., 2007). Additionally, favorable ratings were expected, as teachers and parents collaboratively developed a plan to meet their needs and individual contexts in which training and tutoring were to be provided (Detrich et al., 2007). Finally, teachers, parents, and students were likely to value the intervention because strong treatment components were used and positive student outcomes were expected.

To answer these questions, teachers requesting assistance with engaging parents as tutors received BST in evidence-based tutoring strategies for ORF and parent training. Once trained, teachers collaborated with parents of students who demonstrated low ORF rates, but were accurate readers and proficient in basic decoding skills. Parents were given a video with instructions and models of each strategy for building ORF and guidelines for developing a strong tutoring plan. During training, the teacher and parent developed a tutoring plan and the parent rehearsed the plan with the student until the

parent met the mastery criterion level of performance. Following training, parents implemented the collaboratively developed tutoring plan with their student for several weeks. The effectiveness of the parent training and tutoring programs was examined using a multiple-baseline-across-participants design. That is, implementation of parent training and tutoring was staggered across participants to determine if the training and tutoring program were responsible for changes in parent and student responding. Treatment integrity of parent tutoring was assessed using a procedural checklist that incorporated a Likert scale to measure adherence and quality of implementation as well as direct observations of student engagement during tutoring sessions. Students' ORF was assessed regularly using a GOM to determine the effectiveness of the collaboratively developed parent tutoring programs.

CHAPTER 2

Method

Participants

Teachers. Six teachers (three second grade, one third grade, and two fourth grade) who expressed concerns about at least one of their students' ORF and a desire to work with parents participated in this study. All of the teachers held a bachelor's degree (average 4.7 years of college education), and four had completed additional hours of post-graduate education (range, 9-24 credit hours). The teachers had been teaching for an average of 18.3 years (range, 5-27) and had been teaching at their current grade levels for an average of 8.2 years (range, 1-21). See Table 2 for individual teacher demographics.

The recruitment process consisted of the following steps. First, school administrators in the two participating private schools provided information about the study to all second-, third-, and fourth-grade teachers in their respective schools. Second, interested teachers met with the researcher who described the study, answered questions, and reviewed the information presented in the consent form (e.g., procedures, time requirements, benefits, risks, etc.). Approval for this study was obtained from the Human Subjects Institutional Review Board (IRB # 10075) and from the school administrators. Prior to participation, teachers and parents were asked to provide consent and students were asked to provide assent (see Appendix A). Teachers received a $60 stipend and parents received a $20 stipend for attending the training and completing the rating scales.

Students. Seven students (four males and three females) enrolled at two private schools in the Midwest participated in this study. At School A, three second-grade students (Carter, Michael, and Laura) and one fourth-grade student (Beth) participated.

At School B, one second-grade student (Alex), one third-grade student (Nichole), and one fourth-grade student (David) participated. Five of the students were White, one was White-Hispanic, and one student was Hispanic. None of the students were receiving special education services. However, Alex demonstrated a slight speech impediment.

Participating teachers referred students who demonstrated difficulty with ORF in the classroom and who had parents that were interested in helping with reading at home. After obtaining parental consent and student assent, the researcher administered three AIMSweb ORF probes to determine the appropriateness of parent tutoring for ORF prior to initiating tutoring plan development and implementation. Students were selected for participation based on the following criteria: (a) the student's grade-level ORF median score on the ORF probes was below the AIMSweb spring 50th percentile, and (b) the student's accuracy on the ORF probe was at or above 95% indicating proficient phonics skills.

Parents. Mothers of the seven referred students who met the inclusion criteria participated. Five of the mothers identified themselves as White, one as White-Hispanic, and one as Hispanic. Education levels of the mothers ranged from some college to completion of a master's degree. Five of the mothers worked outside of the home with hours-per-week ranging from 6 to 41 or more. Michael and David's mothers were stay-at-home mothers. Six of the families had two children, and one family (Michael's) had three children. Individual parent demographics are shown in Table 3.

Setting

Teacher training, parent training, and student assessment sessions were conducted in two private schools in the Midwest. The experimenter provided the teacher training in

the library at one school and in an empty classroom at the second school. Parent meetings took place in the teachers' classrooms in which the teacher arranged a table with at least three chairs. A quiet room or hallway at the school was used for monitoring students' progress throughout the study. Progress monitoring continued into the summer for Laura and Alex and took place in a quiet study room at a local library. An appropriately sized desk or table and two chairs were arranged for each assessment session. Parent tutoring sessions occurred in the participants' homes, generally at the kitchen table.

Materials

Training materials. The materials used for training included a video, handbooks, and a PowerPoint presentation (for teachers only).

Video. The investigator developed an introductory video about ORF and evidence-based strategies for improving the skill (available upon request from the author). The introduction included a definition of ORF, described the importance of the skill, and showed an example of a student reading fluently and non-fluently. Each strategy was then named, described, and an example of a parent implementing the strategy was provided.

Handbooks. The researcher also developed a teacher handbook and a parent handbook that described the evidence-based practices for building ORF and why the strategies are important (Appendix B). The parent handbook (Parents as tutors: Partnering to improve oral reading fluency) included three sections. The first section, effective strategies for ORF, listed the strategies, why each strategy is important, and what it looks like. The second section, collaborating with teachers, noted why working

with teachers is useful, outlined the meeting with the teacher, and provided a planning document for developing the tutoring plan with the teacher. The final section, additional resources, included frequently asked questions and tools to help with behavior (e.g., providing praise, rewards for specific behavior). The teacher handbook included the same sections; however, the second section was titled collaborating with parents and also included the adherence and quality of parent training checklist. One additional section, monitoring and evaluating student progress, was added to the teacher handbook. This section described why monitoring progress is useful, and how to monitor student progress, graph performance, and evaluate progress using visual inspection and expected growth rates for ORF.

Teacher training presentation. A PowerPoint® presentation that followed the handbook and incorporated the video examples for each strategy was developed by the researcher. Each section from the handbook was included within the presentation and was used an outline for the delivery of the training.

Tutoring materials. Tutoring materials included individually selected reading passages, comprehension questions if comprehension was selected as a component of tutoring, and graphs for the feedback component. Each is described in turn.

Tutoring passages. Tutoring passages were individually selected for each student from *Six-Minute Solutions* (Adams & Brown, 2007) reading passages. *Six-Minute Solutions* was chosen because the program includes several non-fiction passages for first- through sixth-grade levels that are aligned with science and social studies standards. Additionally, each passage is an appropriate length for brief tutoring sessions (i.e., 100 to 300 words depending on the grade level) and numbered, thus increasing the ease with

which a tutor can provide performance feedback (i.e., every word does not have to be counted to determine the number of CWPM). Students were initially screened for placement within the graded passages so that the reading material was at the instructional level (i.e., read the passages between 93% and 97% accuracy). After initial placement, passages were provided for tutoring in the order outlined within *Six-Minute Solutions*.

Comprehension questions. Comprehension questions corresponding to each passage were written by the researcher and provided for tutoring if comprehension questions were selected as part of the tutoring plan. The questions were developed by the researcher and included specific questions for the parent to ask before reading (i.e., brainstorming and predicting) and after reading (i.e., summarizing, fact questions, thought questions).

Performance feedback graph. A graph template for providing performance feedback was provided. Parents filled in appropriate numbers on the vertical axis scale. Following the pre- and post-check, the number of words read correctly and incorrectly was colored in by the parent and student (see sample in parent handbook; Appendix B).

ORF and comprehension assessment materials. For this study, AIMSweb R-CBM progress monitoring passages were used. AIMSweb provides a standard set of passages for each grade level that were developed and refined through field testing and analysis of readability scores (Howe & Shinn, 2002). Students' reading comprehension was assessed using AIMSweb Reading Maze probes. Maze has a multiple-choice cloze format in which every seventh word is replaced with a set of three words in parenthesis (i.e., correct word, word of the same part of speech, and one word that does not make sense) and students are asked to identify the correct word (Shinn & Shinn, 2002b).

Measurement of Dependent Variables

Oral reading fluency and accuracy. The primary dependent variable was students' ORF—the number of correct words per min and errors per min. ORF was measured to assess the generalized effects of parent tutoring. For each passage administered, the administrator provided the standardized directions (see Shinn & Shinn, 2002a). Then the student read the passage aloud for 1 min while the administrator followed along and marked any words the student read incorrectly. Words were scored as correct if the student pronounced the word correctly within 3 s or self-corrected an error and words were scored as errors if the student omitted, mispronounced, substituted, or failed to produce a word within 3 s. Following the assessment, the administrator scored the number of CWPM, EPM, and accuracy. Accuracy was calculated by dividing the number of CWPM by the total number of words read and multiplying the result by 100.

ORF is a valid and reliable indicator of reading competence (Fuchs, Fuchs, Hosp, & Jenkins, 2001; Reschly, Busch, Betts, Deno, & Long, 2009). The reported alternate form reliability for AIMSweb R-CBM passages ranges from .81 to .90 and the standard error of measurement ranges from 6.3 to 13.3 (Howe & Shinn, 2002). Concurrent validity ranges from .71 to .82 and predictive validity ranges from .72 to .76 (National Center on Response to Intervention, 2010).

Reading comprehension. For each passage administered, the administrator provided the standardized directions (see Shinn & Shinn, 2002b), then the student read

the passage silently for 3 min while circling the correct word for the sentence. The number of responses correct (RC) in 3 min was recorded.

Shin, Deno, and Espin, (2000) found the maze task had good alternate-form reliability with a mean coefficient of .81. Findings also indicated the task was sensitive to individual student growth over time and growth estimates could be reliably calculated (i.e., 66% of the variance of growth rates was attributed to the true parameter variance). Furthermore, student growth on the maze task was predictive of later reading scores on a standardized reading assessment.

Treatment integrity of parent training. Two dimensions of treatment integrity—adherence and quality—were measured to determine the level of integrity at which teachers provided training to parents. Procedural checklists specifying the critical components of the training were used to assess the percentage of steps completed by teachers (i.e., *adherence*) during parent training sessions (see Appendix C for the procedural checklist and ratings). Additionally, quality of training was assessed by rating each component on the checklist using a 3-point Likert scale. Trained scorers listened to audio recordings of the meetings and gave a rating of "2" for steps completed as written with high quality, "1" for steps completed as written, and "0" for steps omitted or incorrectly completed. The percentage of steps completed per session was calculated by dividing the number of steps completed with a rating of 1 or 2 by the total number of steps and multiplying the result by 100. The level or percentage of quality was calculated by dividing the sum of the ratings by the total score possible and multiplying by 100.

Treatment integrity of parent tutoring. Four dimensions of treatment integrity—adherence, quality, dosage, and engagement—were measured to determine if

parents delivered tutoring as planned. Parents audio-recorded all home session and an impartial scorer scored 40% of the sessions using the procedural and quality checklist (see Appendix D for a sample checklist). Only the strategies selected as part of the individualized tutoring plan were included. To measure *adherence* and *quality*, scorers listened to the recordings and gave a rating of "2" for the strategies completed as written with high quality, "1" for strategies completed as written, and "0" for steps omitted or incorrectly completed, and recorded N/A for no opportunity to observe the step. For example, if a student made no errors, error correction could not be delivered and therefore the item was not scored. In addition to listening to the recordings for adherence, permanent products were reviewed. If a parent received a "0" for a strategy that could produce a permanent product (i.e., discussion and performance feedback), the product was reviewed. If there was evidence of completion (i.e., written answers to comprehension questions, completed graphs of performance), a rating of "1" was assigned, as quality could not be determined. The percentage of strategies completed per session was calculated by dividing the number of strategies completed correctly with a rating of 1 or 2 by the number of strategies the parent had the opportunity to implement and multiplying the result by 100. The level or percentage of quality was calculated by dividing the sum of the ratings by the total score possible and multiplying by 100.

In addition to adherence, *dosage* was measured by asking parents to complete a weekly tutoring record, indicating the days they engaged in tutoring with their child and the length of each reading session. The recordings returned by the parents were used to validate parent reports, as each recording was stamped with the date and time of sessions.

Engagement was assessed using a 10-s momentary time-sampling format (see Appendix E for the observation form). Trained observers listened to recordings of tutoring sessions, and recorded whether or not the pair (i.e., student and parent) was engaged in tutoring at the end of each 10-s interval. Engagement in tutoring was defined as reading aloud, correcting mistakes, asking questions about the text, discussing text, counting words during performance feedback, and making statements regarding graphed performance. Non-examples of engagement included problematic behavior such as talk unrelated to text or program, whining, no response or no talking, and disruptions (e.g., answer the phone, going to get materials). The percentage of intervals engaged in tutoring was calculated by dividing the total number of intervals in which the behavior occurred by the total number of intervals and multiplying the result by 100.

Teacher beliefs about parent involvement. Teacher beliefs about parent involvement were assessed prior to meeting with teachers and at the end of the study using the Teachers Involving Parents (TIP) scales (Hoover-Dempsey et al., 2002). The following six scales were administered: (a) teacher beliefs about the importance of specific involvement practices, (b) teacher attitudes toward parent involvement (c) teacher perceptions of parent efficacy for helping children succeed in school, (d) teacher invitations to parental involvement, (e) teacher reports of parents' involvement, and (f) teacher self-efficacy for teaching. For each scale, teachers rated several statements on a 6-point Likert scale, ranging from 1 (depending on the scale: disagree very strongly, important, none, never) to 6 (depending on the scale: agree very strongly, important, all, 1+ times each week). Across the scales, reported alpha reliabilities range from .64 to .94 (Family-School Partnership Lab, 2010).

Parent beliefs about involvement. Parent beliefs about involvement in schooling were assessed prior to the meeting with teachers and at the end of the study using 12 scales compiled as part of the Parent Involvement Project (Hoover-Dempsey & Sandler, 2005). The first 3 scales—valence toward school, parent role construction for involvement in child's education, and parent self-efficacy for helping the child succeed in school—examined parent personal motivation for involvement. The next 3 scales—general invitations from the school, specific invitations from the teacher, and specific invitations from the child—examined parents' perceptions of invitations for involvement. Two additional scales focused on parents' life context—parents' knowledge and skill and time and energy. Another scale measured parent choice of involvement in activities. The final group of scales measured parent mechanisms of involvement. In this area, the following scales were administered: (a) parent report of encouragement, (b) parent report of modeling, (c) parent report of reinforcement, and (d) parent report of instruction. For each scale, parents rated several statements on a 6-point Likert scale, ranging from 1 (depending on the scale: disagree very strongly, never, not at all true) to 6 (depending on the scale: agree very strongly, daily, completely true). Across the scales, reported alpha reliabilities range from .78 to .96 (Family-School Partnership Lab, 2010).

Student attitudes toward reading. The Elementary Reading Attitude Survey is a 20-item, two-factor survey used to assess children's attitudes toward recreational and academic reading (McKenna & Kear, 1990). Students indicated how they felt about a series of briefly worded statements about reading using a pictorial scale (i.e., Garfield displaying different emotions). Prior to administration, the researcher explained the scale and discussed the emotions that were shown in each one of the pictures. Each of the

items was read aloud to student and the student marked the response. Items were assigned a rating from 1 (very upset Garfield) to 4 (very happy Garfield) and scores were summed to provide a score for recreational (items 1-10), academic (items 11-20), and overall (items 1-20) reading attitude. Raw scores were converted into grade-level percentile ranks. The established internal consistency of the attitude scale ranges from .64 to .89.

Social validity. The Intervention Rating Profile-15 (IRP-15; Martens, Witt, Elliott, & Darveaux, 1985) and the Child's Intervention Rating Profile (CIRP; Witt & Elliott, 1985) were used to assess the acceptability of the tutoring procedures after the last recorded tutoring session. The instructions and target behavior of the questionnaires were modified to reflect the tutoring program (i.e., *treatment* was replaced with *tutoring program*, behavior problem was replaced with reading problem, classroom was replaced with home for the parent version).

The IRP-15 is a 15-item, one factor questionnaire that assesses perceptions of the general acceptability of interventions. Parents and teachers rated each statement on a 6-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree). Negatively worded items were reverse coded and then mean item ratings were calculated by dividing the sum of the ratings by the total number of items administered. The internal consistency of the IRP-15 is reported to be .98 (Kratochwill, Elliott, & Busse, 1995; Martens et al., 1985).

The CIRP is a 7-item, one factor questionnaire that assesses children's perceptions of the acceptability of interventions using a 5-point point Likert scale, ranging from 1 (disagree) to 5 (agree). The researcher read the CIRP aloud to the

participants and clarified questions from the participant. Negatively worded items were reverse coded and then mean item ratings were calculated by dividing the sum of the ratings by the total number of items administered. The reported internal consistency of the CIRP ranges from 0.79 to 0.89 (Turco & Elliott, 1986; Witt & Elliott, 1985).

Research Design

A multiple-baseline design (Bailey & Burch, 2002) was used to examine the effects of the parent training and tutoring. Specifically, this design was used to determine the effectiveness of the parent training on parents' use of evidence-based practices for improving ORF and the effectiveness of parent tutoring on improving students' ORF. For multiple-baseline designs, experimental control is demonstrated when there is a change in the dependent variable (e.g., increase in tutoring skills, ORF) upon implementation of the independent variable (e.g., training or tutoring) while other baselines remain stable.

Across conditions, 40 percent of home reading sessions were randomly selected (i.e., one per week when possible), and scored for integrity of parent tutoring. In addition, students' ORF was assessed twice per week using AIMSweb R-CBM progress-monitoring passages and parents' use of evidence-based practices for ORF was assessed using the corresponding procedural and quality checklist. There were two conditions—baseline and parent tutoring. Each is described briefly in this section. Specific procedures are described in the next section.

Baseline. During baseline, a systematic tutoring program was not implemented, but parents were asked to practice reading with their child as they normally would three days per week. No materials, feedback, or training were provided to parents. Parents

were asked to audio record reading practice and keep a log of the number of days reading was practiced and the length of the reading practice (Appendix F).

Parent tutoring. Once parent training was complete, the parent was asked to implement the individualized tutoring plan for at least three days per week. A binder with two copies of the reading passages for each week was provided as well as other materials needed for the tutoring plan, depending on the components selected (e.g., comprehension questions, a graph for providing feedback). Parents were only given written feedback from the researcher regarding questions or comments they wrote in the binder.

Procedures

Prior to training and assessments, the researcher met with interested classroom teachers to review the purpose of the study, discuss participation, and answer questions. Teachers who were interested in working with parents and who had at least one student in their classroom that they believed might benefit from participation were provided with the teacher consent form. Participating teachers contacted at least one parent to provide information about the study. When a parent expressed interest in participating, a letter describing the project and a parent consent form were sent home with the student. After obtaining parent consent, the researcher met individually with the referred students to discuss the study and to ask the students to sign a child assent form if they agreed to participate.

Students who provided assent were then screened to determine whether or not they met criteria for inclusion. Specifically, the researcher administered three grade-level ORF AIMSweb probes, scored the probes, and then recorded the median number of

words read correctly and number of errors made in 1 min. The raw scores were converted to percentiles based on AIMSweb aggregate normative data. The student's accuracy of reading was also calculated by dividing the number of words read correctly by the total number of words read. If the student's percentile rank was below the 50th percentile and their accuracy of reading was 95% or higher, they were included in the study. Students who scored above the 50th percentile were not included in the study, but the parents were given the opportunity to work with their child's teacher to learn strategies to assist with reading.

ORF and comprehension assessment. Students' ORF was assessed twice each week using one grade-level AIMSweb ORF probe. The number of words read correctly and incorrectly in 1 min were recorded. Students' comprehension was also assessed, but less frequently. Bi-weekly, the researcher administered one grade-level AIMSweb Maze probe. For all assessments, the researcher met individually with the student and administered the probes following standardized directions (see Shinn & Shinn, 2002a; Shinn & Shinn, 2002b).

Teacher skills training. Teachers were provided with a handbook and video describing the evidence-based tutoring strategies for building ORF, guidelines for devising a tutoring program, and working with parents. Teachers also participated in one structured, 3-hr training focused on two skills—tutoring procedures for building ORF and parent training. Training was delivered by the researcher using BST. Specifically, components of the training included didactic instruction, written instructions, video modeling, rehearsal, and feedback. The content covered three primary content areas: (a) ORF and evidence-based strategies for improving fluency, (b) collaborating with parents

to devise a tutoring plan, and (d) progress monitoring and presentation of results. Each is discussed in turn.

ORF and evidence-based strategies. ORF was discussed as an essential element of reading development and an example of fluent and non-fluent reading was shown via the training video. Next, the evidence-based strategies were presented including listening passage preview, repeated reading, error correction, flashcards, performance feedback, and incentives (see Table 4 for descriptions of each strategy). Specifically, the teachers viewed a video that described essential (i.e., repeated readings, error correction, and feedback) and optional strategies (i.e., listening passage preview, flashcard word practice, and discussion of text) for tutoring to improve ORF, explained the rationale for why each strategy is helpful, and provided a model of each strategy implemented by a parent. A rationale and description of each strategy follows.

Listening passage preview (also termed "Show" in this project) provides modeling of fluent, accurate reading (Daly & Martens, 1994). The parent read the passage as the student followed along with his or her finger. As the student listened to the story, the parent monitored to ensure the student was following along and guided the student to the correct location if he or she was not following along accurately.

Repeated readings is an integral component of fluency interventions because it increases student's opportunities to respond to reading in context (Rashotte & Torgenson, 1985). During repeated readings, the student read the same passage aloud three to four times while the parent followed along. The parent assisted the student with difficult words by supplying the word if the student failed to read a word within 3 s or read a word incorrectly.

Error correction is necessary to decrease the number of errors students make and increase opportunities for correct reading practice. Three types of error correction strategies were presented: word drill, phrase drill, and syllable segmentation. Providing parents with choices allowed them to select a procedure that more closely approximated strategies already in use or that they found to be acceptable. Word drill and phrase drill error correction provided students with additional opportunities to practice unknown words (i.e., words not read or read incorrectly) during reading. For word drill error correction, the parent pointed to the error word, read the word correctly, and had the student reread the word three times. Phrase drill error correction is similar, but the parent had the student read the word and then the phrase containing the error word three times instead of the word in isolation. Both procedures are more effective than word supply error correction (student reads the word one time) and have similar effects on ORF (O'Shea, Munson, & O'Shea, 1984). For syllable segmentation, the parent read each syllable of the word to the student and asked the student to repeat the syllables as they were uncovered by a card. Then, the parent modeled how to blend the syllables together to read the word and the student did the same. Lastly, the student independently blended the syllables to read the word (Daly et al., 2005).

Flashcards (FC) are useful for teaching words in isolation (MacQuarrie et al., 2002). Words the child read incorrectly on both the first and second reading of the passage were written on flashcards and presented according to the strategic incremental rehearsal procedure (Kupzyk, Daly, & Andersen, 2011). The parent presented the first word by saying the word and having the student repeat the word. The word was then presented again and the student was given an opportunity to read the word. If the student

did not read the word in 2 s, the parent said the word (a prompt-delay procedure). When the student responded correctly to the word prior to the delayed prompt, the next word was modeled and the student repeated the word. The first word was again presented followed by the second word. Additional words were added to the instructional sequence when the student was able to read each word without a prompt.

Performance feedback was also presented as a potential component, as the strategy provides the student with continuous feedback on ORF. To provide performance feedback, the parent timed the student reading for 1 min and then reported the number of words read correctly and incorrectly (Eckert et al., 2006). The data were graphed to visually display progress over time. A preferred tangible item, activity, or privilege may have been provided contingent on a performance improvement goal to improve fluency and motivation to participate in tutoring sessions (Daly et al., 1998; Daly et al., 2005).

In addition, discussion in the form of questioning strategies for building reading comprehension was included, as comprehension is the ultimate goal of reading. Evidence also indicates that repeated readings are more effective when students are prompted to focus on comprehension in addition to speed and accuracy (Therrien, 2004). Comprehension questions for discussion before (i.e., brainstorming and predicting) and after (i.e., summarizing, fact, and thought/inferential) reading were provided if the discussion strategy was selected for inclusion in the tutoring plan.

Following presentation of instructional strategies, the researcher explained how to combine the strategies to form a tutoring package when working with parents. The teachers then practiced using the strategies in analogue sessions with another teacher or research assistant until the mastery criterion is met for each skill (i.e., 85% of the

strategies completed with a score of 2). The researchers provided feedback on the steps completed correctly and incorrectly and quality of delivery following each role-play.

Collaborating with parents to devise a tutoring plan. Following mastery of the tutoring strategies, the teachers were given information and specific steps for meeting with parents to devise a tutoring plan. Specifically, the importance and benefits of home-school collaboration, components of quality training, agenda or steps for the parent training meeting, and methods of ongoing communication were described. Teachers reviewed the steps for the parent training meeting and practiced with research assistants until reaching the mastery criterion (i.e., 85% of the steps completed with a score of 2).

Progress monitoring and presentation of results. In the current study, progress monitoring was completed by the author using AIMSweb ORF and Maze probes. Therefore, the final part of the training was designed to provide teachers with an overview of the CBM procedures so that they could interpret the results. In addition, teachers were trained to use a tool, DIBELS ORF assessment, to monitor and graph student progress if they decided to train additional parents in the future. The purpose, administration, and scoring of the DIBELS ORF assessment (Good & Kaminski, 2002) was described. DIBELS was selected as the measure for the training because it is accessible and freely available. Teachers were given the materials and the DIBELS Administration and Scoring Manual (Good & Kaminski, 2002). In addition to measurement, teachers were given instructions for graphing and making decisions about student ORF progress during implementation of tutoring. Furthermore, common questions regarding tutoring were discussed along with simple, straightforward responses based on a list composed by Erion and Ronka (2004).

Parent skills training. According to a general schedule provided by the researchers (to allow for sequential introduction of tutoring), teachers contacted parents to arrange a time to meet to develop an individualized tutoring plan. The meetings were scheduled after school in the teacher's classroom and lasted an average of 30 min (range, 20-51 min). Three to four days prior to the meeting, the teacher sent the parent a handbook and video describing the evidence-based tutoring strategies for building ORF and asked the parents to review the information prior to the meeting. During the meeting, the trained teachers used the parent meeting checklist (see Appendix C) and tutoring plan form (Appendix G) to guide the process and to develop an individualized tutoring plan with the parent and student. The teachers audio-recorded the parent meetings so that integrity could be assessed.

The meeting began with the teacher welcoming the parent and student and thanking them for participating in the training. This was followed by a discussion of individual goals for tutoring, or what the family wanted to get out of using structured reading practice at home. Next, the teacher and parent reviewed the rationales for tutoring strategies and discussed the presumed benefits to the student and the parent's individual preference. The team (i.e., teacher, parent, and student) completed a tutoring plan that included the tutoring strategies selected and the reason for inclusion, and when, where, and how often tutoring was to occur. All of the tutoring plans included repeated readings, at least one way to correct errors, and one way to provide feedback. The team discussed the other strategies that could be added to the plan (i.e., listening passage preview, flashcard word practice, and discussion) and decided whether or not the strategies would be beneficial to the student's reading development. All of the teams

included discussion as part of the plan and five of the seven also included listening passage preview (see Table 5 for components selected by each family). After selecting the tutoring strategies, the team identified how to maintain communication about parent tutoring (e.g., weekly phone, in-person contact, email; see Appendix G for the tutoring plan form).

Next, the teacher gave the parent a bookmark listing the steps of the agreed upon tutoring strategies and the parent practiced the individualized tutoring plan with the student while the teacher provided feedback on implementation and student response to the tutoring. Following the practice, the team discussed how the tutoring plan seemed to work for the student and made any changes to the plan if necessary. Practice was to continue during the meeting until the parent reached the mastery criterion (i.e., 85% of the steps completed correctly with a score of 2) for implementation of the selected individualized package with the child. Following the training, parents were asked to record themselves helping their child with reading.

Parent tutoring. Once parent training was complete, parents were asked to use the individualized tutoring package with their child at least 3 days per week for a period of 10 weeks or until the end of the school year. If the school year ended prior to the end of 10 weeks of tutoring, parents were asked to continue tutoring during the summer. The parents of Laura, a second-grade student at School A, and Alex, a second-grade student at School B, decided to continue; however, the remaining parents decided not to continue due to scheduling difficulties and vacations.

The researcher selected passages for each student for tutoring according to the placement directions included in *Six-Minute Solutions*. Specifically, the student read a

series of graded assessment passages from the program beginning with the student's current grade level. After the student completed the assessment passage, the researcher calculated the percent accuracy by dividing the number of words read correctly by the total number of words in the passage and multiplying the result by 100. If the student's accuracy was above 97% or below 93%, the next higher or lower grade-level assessment passage was administered. The first grade level at which the student read at the instructional level (i.e., 93-97% accuracy) was selected for initial placement and then the passages were provided for tutoring in the order outlined within *Six-Minute Solutions*. At School A, Carter, Michael and Beth were placed at the third-grade-level and Laura was placed at the second-grade-level. At School B, David was placed at the fourth-grade-level, Nichole at the third-grade-level, and Alex at the second-grade-level.

Each week, the researcher sent the student home with two copies of four tutoring reading passages from *Six-Minute Solutions* in addition to other tutoring materials depending on the components selected (e.g., comprehension questions, graph). For each tutoring session, the parent completed the tutoring record (i.e., days tutored, min per session, steps completed) and returned the completed tutoring record and materials to the researcher weekly. The researcher removed completed materials and added a new tutoring record and reading materials and sent materials home with the students.

Interscorer Agreement

Two trained scorers listened to a random sample of 30% of the reading assessment sessions for each student and scored student's CWPM and EPM. An agreement was defined as both scorers scoring the same word as correct or incorrect. A disagreement was defined as one scorer scoring a word as correct when the other scorer

scored the word as incorrect and vice versa. Interscorer agreement was calculated for ORF measurements by dividing the number of agreements by the number of agreements plus disagreements and multiplying the result by 100 to obtain a percentage. Across students, interscorer agreement was 99% (range, 97-100%).

The scorers also listened to the audio-recorded parent skills training meetings and scored teachers' implementation according to the adherence and quality of parent training checklist (Appendix C). Three out of seven (42%) of the sessions were randomly selected and scored by a second scorer to determine the level of interscorer agreement. For adherence, an agreement was defined as both raters scoring the same component on the corresponding checklist as completed (i.e., score of "1" or "2") or not completed (i.e., score of "0"). For quality, an agreement was defined as both observers providing the same rating for the same component on the corresponding checklist (i.e., score of "2" and "2" was an agreement). For both adherence and quality, interscorer agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying the result by 100 to obtain a percentage. Across teachers, the interscorer agreement for adherence was 100%. However, interscorer agreement for quality was lower, at 52%. In other words, the scorers agreed on whether or not the steps were completed, but varied in their scoring of how well the steps were completed.

The scorers listened to a random sample of 40% of the baseline and intervention parent tutoring sessions for each child and scored the student's engagement using the observation form (Appendix E) and the parent's implementation according to the adherence and quality of parent tutoring checklist for baseline sessions (Appendix D) and the individualized tutoring plan for intervention sessions. Another scorer listened to 30%

of the scored sessions to determine the level of interscorer agreement. Interscorer agreement for parent treatment integrity was calculated in the same manner described above for the teacher treatment integrity. Specifically, for adherence, an agreement was defined as both raters scoring the same component on the corresponding checklist as completed (i.e., score of "1" or "2") or not completed (i.e., score of "0"). For quality, an agreement was defined as both observers providing the same rating for the same component on the corresponding checklist (e.g., scores of "2" and "2" were coded as an agreement). For both adherence and quality, interscorer agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying the result by 100 to obtain a percentage. The mean percentage interscorer agreement for adherence was 90% (range, 67-100%),quality of parent tutoring was 83% (range, 50-100%), and engagement was 94% (range, 77-100).

Data Analysis

Visual inspection: Student ORF, parent implementation. Visual inspection of graphed data served as the primary data analysis method for parent implementation of the strategies and students ORF. Specifically, the parents' implementation of evidence-based strategies used and students' number of CWPM and EPM were both graphed during baseline home reading sessions and intervention structured tutoring sessions. The graphed data were examined for changes in level, trend, and variability within and across baseline and intervention conditions. As this study aimed to improve behavior, a strong demonstration of the effects would be evidenced by an increase in level and/or trend and a decrease in variability upon implementation of training and tutoring while subsequent baselines remained stable. Additionally, replication of effects across participants when

training and tutoring are sequentially implemented demonstrates experimental control (Bailey & Burch, 2002).

Structured criteria for visual inspection: Student ORF. Student ORF performance was also examined using the conservative dual-criteria (CDC) method to increase the accuracy of decisions made based on visual analysis (Fisher, Kelley, & Lomas, 2003). This method determines whether a sufficient number of intervention data points exceed the mean and trend lines from baseline to be statistically significant at the $p>.05$ level, using the binomial test. If so, it deems the treatment effect to be significant.

Ordinary least squares regression: Student ORF, RC comprehension growth. Students' growth in ORF and RC during tutoring phases was also evaluated by calculating slopes of improvement using ordinary least squares regression (Good & Shinn, 1990). Students' slopes or rates of ORF growth during tutoring were compared to those cited in the literature to see if adequate progress was made. See Table 1 for the expected weekly rate of ORF growth (Fuchs et al., 1993). The students' rate of increase in RC on the comprehension probes were compared with the AIMSweb normative rate of increase expected for the appropriate grade level. In addition, students' baseline median CWPM and the median of the last seven data points in intervention were compared to the AIMSweb normative scores to ascertain whether or not the students moved closer to the 50^{th} percentile. Given that fewer probes were administered for comprehension, the percentiles for comprehension were obtained based on the mean of the baseline and intervention scores.

Pre-post calculations: Attitudes and social validity. Pre and post calculations were completed for the teacher beliefs about parent involvement, parent beliefs about

involvement, and student attitudes toward reading. Descriptive statistics were examined, as statistical analysis was not appropriate given the small sample size. The mean item rating for the teacher and parent beliefs scales were calculated. To aid interpretation, the ratings were categorized by disagreement (ratings of 3 or less) and agreement (ratings of 4 or more). Students' ratings on the Elementary Reading Attitude Survey were converted into grade-level percentile ranks (full, recreational, and academic scales) percentile ranks on the prior to and following parent tutoring. Social validity was also examined at post-intervention using the IRP-15 and CIRP. The mean item ratings were calculated by dividing the sum of the ratings by the total number of items administered. The data were summarized for the teachers, parents, and students.

CHAPTER 3

Results

Teacher treatment integrity

Teacher training adherence was assessed using the corresponding procedural checklist. Integrity results are presented in Table 6. Due to a recording error, Mrs. Allen's training session with David and his mother was not recorded. Across the remaining teachers, 97.1% of the training steps were completed (range, 85.7-100%). Quality was assessed using the Likert rating scale (0 to 2). The scores were summed and divided by the total number of points possible (i.e., e.g., seven steps, total = 14) and multiplying by 100 to obtain a percentage. The data show that the quality of training ranged from 71.4 to 100% (mean = 81.4%).

Parent treatment integrity

Parents' use of evidence-based strategies for building ORF was examined across parents during baseline home reading sessions and intervention structured tutoring sessions. During the baseline phase, parents recorded their typical reading practice at home. Following baseline, parents sequentially participated in training with their child's classroom teachers as outlined above. After an individualized plan was developed and practiced during the training session, parents began implementation of the plan at home. Across both phases, adherence was assessed by scoring the percentage of strategies implemented by parents according to their child's individualized tutoring plan. Adherence was examined within a multiple-baseline design. With this design, experimental control is evidenced by a systematic change in performance upon implementation of the intervention while the subsequent baselines remain stable. It was

expected that there would be an immediate increase in level of adherence following the training given that training targeted parents' skill development. In addition to adherence, the average number of sessions per week (i.e., dosage) and the percentage of time engaged in reading sessions were calculated across phases. Systematic changes in these variables were not expected; however these data provide further information about how much tutoring the students received and may aid the interpretation of the effect of structured tutoring on students' ORF. The outcomes of training delivered by teachers on parents' treatment integrity of tutoring sessions at School A and B are shown in Figures 1 and 2 and summarized in Table 7.

School A parents' adherence and quality. During baseline at School A (see Figure 1 and Table 7), all of the parents demonstrated low, stable levels of evidence-based strategies for building ORF that were subsequently selected for their child's individualized plan (i.e., percentage of strategies completed). Specifically, the parents implemented a mean of 16% of the strategies of the individualized programs (range, 0 to 20) and none of the parents used repeated readings. The quality of parent tutoring during baseline was similarly low at 16%. Following training, the parents implemented a mean of 70% of the strategies across structured tutoring sessions (range, 16 to 100%). Quality of implementation also improved to 54%. There was an immediate increase in level of adherence and quality for three out of four of the parents.

Carter's mother did not show a large, immediate increase in level of tutoring strategies used following training. Overall, she implemented a mean of 17% (range, 17 to 50%) of the strategies included in the tutoring plan with a quality score of 17% during baseline and 37% of the strategies with a quality score of 27% during intervention.

One of the primary strategies eliminated across sessions was repeated readings. Although she showed a slight improvement in number of strategies used over the course of the study, her adherence remained low. Beth's mother also demonstrated low levels of evidence-based strategies during baseline (i.e., 20% of the strategies with a quality score of 20%). However, she showed an immediate and significant increase in use of evidence-based strategies following training, as she used 100% of the strategies with a quality score of 74%. The immediacy of this effect was replicated across Michael and Laura's mothers; however, the data patterns differed during intervention. During baseline, Michael and Laura's mothers used word supply error correction in most of the reading sessions and used a mean of 13% (range, 0 to 17%) and 14% (range 14 to 14%) of the strategies, respectively. Quality of implementation was similarly low for both students (i.e., 12% and 14%).

Following training, Michael's mother showed an increase in adherence to a mean of 68% (range, 50 to 83%); however, implementation of the strategies of the individualized program was variable. The data indicate an increasing trend in adherence following training, and then a decline and stable responding during which time she no longer used listening passage preview, word supply error correction, or feedback. Implementation increased again towards the end of the intervention period. Overall, Michael's mother's quality score was 52%. Laura's mother demonstrated an immediate increase and gradually increasing trend in use of evidence-based strategies during intervention. On average, she implemented 76% of the strategies of the tutoring plan (range, 50 to 100%), with a quality score of 63%.

School A parents' dosage. Across baseline and intervention sessions, the parents were asked to practice reading with their children three to four days per week. However, students received varied amounts of home reading sessions per week across phases (baseline range, 0.6 to 3.5; intervention 0.7 to 3.6). There did not appear to be a systematic change in the number of reading sessions that parents provided following training. Carter and Beth received fewer home reading sessions during intervention (2.2 and 0.7 mean days per week, respectively) than they did during baseline (3.5 and 1.3 mean days per week, respectively). The number of sessions provided each week for Michael increased slightly from 3.4 sessions per week during baseline to 3.6 sessions per week during the structured tutoring phase. Laura also received more tutoring sessions during intervention, increasing from 0.6 to 1.2 sessions per week; however, this dosage was lower than that recommended.

School A parents' engagement in reading sessions. Across baseline and intervention sessions, the student-parent dyads demonstrated high levels of engagement. The mean percentage of intervals engaged during baseline and intervention for Carter was of 96% and 93%, respectively. Similar to Carter, Beth and her mother also showed high levels of engagement across sessions (baseline= 100%; tutoring= 94%). Michael and his mother's engagement during reading sessions increased from 83% during baseline to 93% during intervention. A decrease in engagement was found for Laura and her mother; however, engagement remained high. Mean engagement during baseline was 100% and during structured parent tutoring, engagement declined to a mean of 92%.

School B parents' adherence and quality. Consistent with results from School A, parents at School B used few evidence-based strategies (i.e., word supply error

correction, discussion of text) during the baseline home reading sessions (see Figure 2 and Table 7). Overall, during baseline the parents used 14% of the strategies included in the individualized tutoring program for their child, with a quality score of 10%. There was an immediate increase in the percentage of strategies used following training, with parents using a mean of 94% of the strategies, with a quality score of 81%. Following training, David's mother used a mean of 88% of the strategies outlined in his individualized tutoring plan (range, 66-100%), a large improvement from 0% of the strategies during baseline (i.e., David read aloud independently). Her responding during the structured tutoring phase remained above baseline levels, but was somewhat variable. The results for quality of implementation were similar, 0% during baseline and 75% during intervention. The immediacy of the change following training was replicated with Nichole and Alex's mothers. During baseline, Nichole's mother and Alex's mothers used a mean of 17% and 27% of the tutoring strategies with quality scores of 17% and 13%, respectively. Following training, their mothers used a mean of 95% (range, 83-100%) and 98% (range, 80-100%) of the strategies included in the individualized tutoring plan. In addition to the immediate increase in level, both parents showed high, stable responding. Quality of implementation also improved during intervention to 95% and 74% from baseline to intervention for Nichole and Alex.

School B parents' dosage. Parents at School B were also requested to practice reading with their child three days per week during baseline and intervention phases. David and Nichole received more reading practice sessions during intervention that they did during baseline. Specifically, David practiced reading at home 1 time per week during baseline and 2.9 times per week during structured tutoring. Nichole received 1.3

sessions per week during baseline and 2.5 sessions per week during intervention. The number of sessions remained constant across the phases for Alex who received 2.3 and 2.2 sessions per week during baseline and intervention.

School B parents' engagement in reading sessions. Similar to the parent-student dyads at School A, the dyads at School B showed high levels of engagement. However, for David and his mother, engagement decreased from 100% during baseline to 86% during structured tutoring; however, it should be noted that during baseline sessions, David independently read to himself. Engagement for Nichole and her mother remained high across phases and increased slightly from 95% during baseline to 97% during intervention. Alex and his mother showed similar levels of in engagement during baseline, 96%, and intervention, 93%.

Summary of parent integrity across schools. Six out of the seven parents demonstrated an immediate increase in the percentage of evidence-based tutoring strategies used following training that included parents reviewing the handbook and video and meeting with the teacher. Overall, during baseline the parents used 15% (range, 0 to 27%) of evidence-based strategies that were later selected as part of their child's individualized tutoring program. Parents used word supply error correction during baseline, but did not use other error correction strategies, listening passage preview (i.e., show), repeated readings, provide feedback, or discuss the passage. Following the training, the parents used a mean of 82% (range, 21.9 to 92.3%) of the tutoring strategies included in their children's individualized tutoring program across sessions. All of the parents except for Carter's used repeated readings. In addition, the parents were more likely to use additional error correction strategies, discuss the passage,

and provide feedback on the child's performance. When listening passage preview was included as part of an individualized plan, it was the most likely strategy to be eliminated by the parents.

Dosage varied across participants, ranging from 0.6 to 3.5 (mean = 1.9) sessions per week during baseline, and from 0.7 to 3.6 (mean = 2.2) sessions per week during intervention. Michael was the only student to receive a consistent number of sessions at the suggested level (i.e., 3 to 4 sessions per week) across phases. Similar to Michael, Alex received a consistent number of sessions across both phases, but fewer than suggested (2.3 mean number of sessions per week during baseline and 2.2 during intervention). Two of the students received fewer sessions during intervention than they did during baseline. Carter received a mean of 1.3 fewer sessions during intervention than he did during baseline and Beth received a mean of 0.6 fewer sessions. Laura, David, and Nichole, on the other hand, received 0.6, 1.4, and 1.2 more sessions during intervention than they did during baseline.

Engagement was high across phases, with mean engagement across dyads during baseline of 95% and during intervention of 93%. Two of the students demonstrated small increases during the intervention phase in engagement (increase of 10% for Michael and 2% for Nichole), whereas five of the dyads showed a slight decrease in engagement (decrease of 3% for Carter, 6% for Beth, 8% for Laura, 14% for David, and 3% for Alex).

Student ORF

The effectiveness of the structured and collaboratively developed parent tutoring plan on students' ORF was evaluated across two groups of students. The results are displayed in Figures 3 and 4 as well as Table 8. These data must be interpreted in the

context of the level of parent integrity. The primary method used to analyze the results was visual inspection. Within a multiple-baseline design, experimental control is evidenced by a systematic change in performance upon implementation of the intervention while the remaining baselines remain stable. Given the nature of ORF (i.e., a skill that is gradually developed), an immediate increase in level was not expected. Rather, it was expected that students would show a gradually increasing trend in performance following implementation of the structured individualized tutoring program.

In addition to visual inspection, the CDC method (Fisher, 2003) was used to provide further evidence of the effect of the parents' implementation of the individualized tutoring plan during the structured tutoring phase. Furthermore, slopes were calculated using ordinary least squares regression (OLS) to determine the students' rates of growth during the tutoring phase. Lastly, students' baseline median CWPM and the median of the last seven data points in intervention were compared to the AIMSweb normative data to determine whether or not his ORF scores moved closer to the 50th percentile.

School A students. Based on visual inspection of the data, there appears to be a small effect of the structured tutoring on students' ORF as measured in standardized AIMSweb ORF probes (Figure 3). The students' responding during baseline was generally stable, but with slight decreasing trends for Carter and Michael. Beth showed some variability during baseline, but the second data point appears to be an extreme outlier and her responding stabilized in the last three assessment sessions. Laura, however, demonstrated an increasing trend during baseline, but her performance stabilized (with the exception of the last outlying data point) prior to implementation of the structured tutoring. Upon implementation of the structured parent tutoring, Carter

showed a slight increasing trend in ORF and more stable responding, but his responding increased in variability at mid-phase. His improvements in ORF are interesting given that he received fewer reading sessions during intervention with low, but improved adherence (i.e., 37% of the strategies) compared to baseline levels. The results of structured tutoring on ORF were not replicated with Beth, as she showed no change in ORF following training. In fact, Beth showed a slight decline in CWPM and then a performance increase towards the end of the structured tutoring phase. These data are not surprising given that Beth received a limited number of sessions per week (i.e., 0.7, but with 100% adherence) during the intervention phase. Michael, on the other hand, demonstrated an immediate increase in level and trend in CWPM upon implementation of the structured tutoring program. Across baseline and intervention sessions, Michael received a similar number of reading sessions per week and his mother implemented a greater percentage of the strategies included in the tutoring plan (13% during baseline and 68% during intervention). Visual inspection of Laura's data show no immediate change in level of responding upon implementation of tutoring, but after approximately two weeks of intervention, the number of CWPM began to steadily increase. Towards the end of the intervention phase, Laura showed more variable performance. The changes in ORF during the intervention phase align closely with the percentage of strategies that her mother used during the structured tutoring sessions. Specifically, as her mother's level of adherence increased, Laura began to show a more consistent increasing trend in CWPM.

Summary statistics of the students' ORF show that students read more words correctly on the AIMSweb ORF probes during intervention in comparison to baseline

levels. During baseline, Carter read a mean of 83.5 CWPM with 4 errors, and during intervention, he read a mean of 94.0 CWPM 2.4 EPM. Beth read a mean of 111.8 CWPM with 2.6 EPM during baseline and a mean of 121 CWPM with 0.7 EPM during parent tutoring. Michael also showed higher levels of ORF as he read a mean of 98.5 CWPM with 1.5 EPM in baseline and a mean of 121.8 CWPM with 1.6 EPM during tutoring. Lastly, Laura read a mean of 69.7 CWPM with 1.6 EPM during baseline and a mean of 83.3 CWPM with 1.8 EPM during parent tutoring. Overall, all of the students showed an increasing trend in ORF during the intervention phase and higher mean levels of CWPM, but experimental control was not achieved. The differences in responding across students appear to be generally related to parent integrity of implementation (i.e., combination of adherence, dosage, and engagement).

School A students' conservative dual criteria results. Carter's ORF results were analyzed using the CDC method. To be statistically significant, at least 13 out of 19 data points needed to fall above both criterion lines. Based on this method, Carter demonstrated a significant difference between the baseline and the structured parent tutoring phases, as 17 data points fell above both lines. Consistent with visual inspection, Beth showed a lack of change between the phases, as none of her scores fell above both criterion lines (12 out of 15 needed to be significant). Visual inspection of Michael's data was also corroborated by the CDC method as the data evidence a significant difference between baseline and intervention phases (16 data points exceeded both criterion lines and at least 12 data points were needed). Based on this method, Laura demonstrated a significant difference between the baseline and intervention phases, as 12 data points fell above both lines (12 out of 16 data points above the criterion lines were

needed). However, these results are influenced by the final data point in baseline (an outlier) as the baseline trend and mean are used to determine the significance of the treatment. When the final data point was excluded, there was not a significant difference between the phases.

School A students' slopes. The rate of CWPM growth during the intervention phase was calculated using OLS and compared to the expected growth rates for the appropriate grade found in the literature (Fuchs et al., 1993). Overall, Carter showed a decrease of 0.8 CWPM per week during intervention, which is discrepant from the expected growth rate of 1.5 CWPM per week for second grade students. However, the negative 0.8 growth rate during intervention may be seen as an improvement over the 10.8 CWPM per week decline during baseline. Beth's ORF scores, on the other hand, increased by 1.9 CWPM per week. This rate of growth is much greater than the 0.85 CWPM per week expected of fourth grade students. Michael's and Laura's ORF scores increased by 1.2 and 1 CWPM per week, respectively, which is slightly lower than the expected rate of growth of 1.5 CWPM per week for second-grade students.

School A students' percentile ranks. All of the students moved closer to the 50th percentile based on the appropriate AIMSweb normative grade level data. However, Michael was the only student to surpass the 50th percentile. Based on second-grade level normative data, Carter improved from the 29th percentile (baseline median=82.5 CWPM) to the 39th percentile (intervention median of last 7 data points=91 CWPM), Michael improved from the 47th percentile (baseline median=99.5 CWPM) to the 74th percentile (intervention median of last 7 data points=127 CWPM), and Laura showed an improvement from the 19th percentile (baseline median=69 CWPM) to the 30th percentile

(intervention median of last 7 data points=83 CWPM). Beth improved from the 39th percentile (baseline median=87 CWPM) to the 42nd percentile (intervention median of last 7 data points=124 CWPM) based on AIMSweb fourth-grade level normative data.

School B students. ORF results for students at School B are displayed in Figure 4. Baseline levels of CWPM were generally stable across the students, with slight decreasing trends shown for Nichole and Alex. It is important to note that during the intervention phase, David and Nichole received more reading sessions per week (2.4 and 2.5 sessions per week compared to 1 and 1.3 per week during baseline) and the sessions included a greater percentage of tutoring strategies (i.e., 88% and 95% compared to 0% and 17% during baseline). Alex received a consistent number of sessions across phases (i.e., 2.3 sessions per week during baseline and 2.2 during intervention) and his mother used a greater percentage (98%) of evidence-based tutoring strategies that were included in his plan during intervention as compared to baseline (27%).

Upon implementation of structured parent tutoring, David demonstrated an immediate increase in CWPM and showed an increasing trend in CWPM across the intervention phase. The increasing trend during intervention was replicated for Nichole and Alex. Nichole's data show that following an initial decreasing trend, there was a steady increasing trend in performance beginning approximately two weeks after implementation of the structured tutoring phase. Analysis of Alex's data verifies the results of the structured tutoring program found for David. Specifically, upon implementation of the structured parent tutoring program, Alex showed a steep increasing trend within the first two weeks of tutoring. For the remainder of the intervention phase, Alex showed variable, yet gradually increasing performance in CWPM.

Summary statistics provide further evidence of effect of parent tutoring on CWPM across the students, but two of the three students showed a slight increase in the number of EPM. David read a mean of 125.5 CWPM during baseline and a mean of 157.2 CWPM during intervention. However, he demonstrated an average increase in EPM of 0.9 (baseline mean= 0.66; intervention mean=1.5 EPM). Summary statistics show that Nichole read a mean of 97 CWPM with 1.3 EPM during baseline and a mean of 104.5 CWPM with 1.9 EPM during intervention. Alex read a mean of 90 CWPM during baseline and 109.2 CWPM during intervention. He also showed a decrease in EPM, from a mean of 3 EPM during baseline to a mean of 2.2 EPM during intervention.

School B students' conservative dual criteria results. The improvement in CWPM for David and Alex are further supported by the results of the CDC analysis. Based on this method, there was a significant difference between baseline and intervention phases for David, as 11 of the data points exceeded both criterion lines (at least 9 needed). The results of the CDC analysis also provided evidence of a statistical effect of intervention for Alex, as all 16 data points exceeded both criterion lines (at least 12 needed). There was not a significant difference between baseline and intervention phases for Nichole, as only 7 data points exceeded both criterion lines and 9 data points were needed.

School B students' slopes. During the parent tutoring phase, David demonstrated an increase of 0.8 CWPM per week based on OLS regression analysis. These data indicate that David showed adequate growth in comparison to expected growth rates found in the literature (i.e., 0.9 CWPM per week for fourth-grade students). Results for Nichole show that across the intervention phase, her CWPM increased by 4.6

CWPM per week, much greater than the 1.0 CWPM expected of third grade students. Alex also showed adequate rate of growth, as he demonstrated an increase of 1.8 CWPM per week, which is higher than the 1.5 CWPM per week expected of second-grade students.

School B students' percentile ranks. The effectiveness of the intervention for David and Alex was further verified, as they surpassed the 50th percentile based on the appropriate grade level AIMSweb normative data. David moved from the 45th percentile (baseline median=128 CWPM) to the 77th percentile (intervention median of last 7 data points=165 CWPM) based on AIMSweb fourth-grade level normative data. Based on AIMSweb second grade-level normative data, Alex improved from the 38th percentile (baseline median=90 CWPM) to the 62nd percentile (intervention median of last 7 data points=113 CWPM). Although Nichole showed a significant rate of growth during the intervention phase, she did not surpass the 50th percentile. However, she improved from the 26th percentile during baseline (baseline median=94 CWPM) to the 39th percentile (intervention median of last 7 data points=110 CWPM) based on AIMSweb third-grade norms. David's and Alex's data conform to expected data patterns, while Nichole's data suggested a delayed, but increasing trend. Results for all participants were variable. Therefore, it appears that experimental control was achieved, although not in an overly compelling fashion.

Summary. A summary of the findings across students is presented in Table 8. According to visual inspection and Fisher's (2003) CDC method, four of the students (i.e., Carter, Michael, David, and Alex) demonstrated a significant improvement in CWPM following implementation of a structured parent tutoring plan. Furthermore,

three of the students (i.e., Beth, Nichole, and Alex) showed growth who exceeded the amount of growth expected (Fuchs et al., 1993). All of the students demonstrated an increase in percentile rank based on grade-level AIMSweb national normative data from pre-tutoring to post-tutoring, with three of the students, Michael, David, and Alex, surpassing the 50th percentile. The students who surpassed the 50th percentile were also those who received the structured tutoring with a combination of high adherence and dosage. Nichole also received the structured tutoring with high adherence and dosage and began to show significant growth shortly after her mother received training. Beth and Laura received structured tutoring with high adherence, but they only received 0.7 and 1.2 sessions per week, which may have limited their growth. Carter, on the other hand, received more than 2 sessions per week, but with lower levels of adherence. Although he showed an improvement in CWPM, his growth may have been limited by the poor adherence.

At school A, experimental control was not obtained. Experimental control was demonstrated at School B, as the effect of tutoring on David's CWPM was replicated with Alex. Nichole also showed improvements in CWPM during the intervention phase, but the initial declining trend precludes conclusions about the effectiveness of the intervention on her performance. Overall, it appears that students who received structured tutoring 2 or more days per week with high levels of adherence demonstrated the most significant change in performance. Additional replications with high integrity are needed to further validate the effectiveness of the individualized tutoring programs on students' ORF.

Student comprehension

The Maze comprehension results across students at Schools A and B are shown in Figures 5 and 6. Comprehension assessments were not the primary outcome measure and were therefore administered less frequently due to time constraints. Therefore, conclusions about the effect of the intervention on reading comprehension cannot be made with any certainty. However, the results do suggest some interesting possibilities.

School A students. Carter showed an immediate increase in level and an increasing trend in the number of responses correct (RC) on the AIMSweb Maze comprehension probes upon implementation of the structured tutoring program (Figure 5). Beth and Michael's data indicate increasing trends in the number of RC during baseline. The increasing trend continued, but then became variable for Beth and stable for Michael during the intervention phase. Laura also showed an initial increasing trend during baseline, but then stable performance on the last two probes prior to intervention. Upon implementation of the structured tutoring program, she demonstrated an immediate increase in number of RC. The number of RC remained above baseline levels, but was variable throughout the intervention phase. Overall, experimental control was not achieved for this group of students, as the students showed increasing trends during baseline and did not show a consistent change in level or increasing trend during intervention.

Based on OLS analysis of slopes, Carter and Michael showed weekly rates of growth of 0.7 and 0.5 RC per week, which exceeded the AIMSweb rate of increase for second-grade students. Summary statistics and AIMSweb percentiles (mean baseline and intervention RC) also showed improvements for these students (see Figure 5). Beth and

Laura, on the other hand, demonstrated poor weekly rates of growth of -0.17, 0.17, respectively. During the intervention phase, all of the students surpassed the 50th percentile based on grade-level AIMSweb normative data. Carter demonstrated a mean of 21 RC, which placed him at the 81st percentile compared to his baseline performance at the 26th percentile. Beth, Michael, and Laura's mean performance during intervention placed them at the 63rd, 78th, and 58th percentiles as compared to baseline percentiles of 54, 42, and 8.

School B students. David and Nichole showed high levels of RC during baseline (Figure 6). Specifically, David's score placed him at the 82nd percentile and Nichole's score placed her at the 71st percentile. Upon implementation of the structured tutoring program, David showed an initial increase in level, but then his performance returned to the baseline level. Furthermore, David demonstrated a decreasing trend of -1.2 RC per week during the intervention phase. Nichole showed a slight decrease and generally stable responding throughout the intervention phase. Based on OLS regression analysis, Nichole showed a weekly rate of growth in RC of 0.6, which exceeded the rate of growth expected; however, this trend does not appear representative of her growth, as the majority of her responding was lower than the baseline level and stable. In contrast to David and Nichole, Alex showed a low level of RC during baseline, which placed him at the 28th percentile. During the intervention phase, he demonstrated an immediate increase in level and gradually increasing trend in RC. His rate of growth of 0.7 exceeded the AIMSweb normative rate of increase for second-grade students. His mean RC during intervention was 21, which placed him at the 82nd percentile, a significant improvement from his baseline level of responding.

Summary. Overall, the majority of students demonstrated an improvement in reading comprehension over the course of the study. The students who placed above the 50th percentile prior to the intervention phase showed less progress, as they were already performing at or above expected levels. All of the students performed above the 50th percentile at the end of the intervention period. Experimental control was not obtained, as there were insufficient data and increasing trends in RC prior to implementation of the structured tutoring program. Nonetheless, it appears that the intervention had a positive effect on Carter, Laura, and Alex's performance on the AIMSweb Maze comprehension probes.

Attitudes towards involvement and reading

The third research question was related to perceptions about parent involvement in schooling and student attitudes towards reading. Teachers, parents, and students completed questionnaires prior to and at the end of the intervention phase.

Teacher beliefs about parent involvement. Teacher beliefs about parent involvement were assessed using the TIP scales. The mean item rating for each scale is presented in Table 9. Ratings of 3 or less represent points of disagreement (e.g., disagree, not important, 45% or fewer parents, once or less per semester), while ratings of 4 or more represent points of agreement (e.g., agree, important, 55+% parents, once or more per month). On the *Teacher Attitudes Toward Parent Involvement* scale, the mean item rating across teachers was 5.02 (range, 4.5-5.63) prior to the intervention and 4.92 (range, 4.13-5.88) after the intervention, showing that teachers agreed parent involvement was important and parents want to be involved at both time points. Ratings on the *Perceptions of Parent Efficacy for Helping Children Succeed in School* and on the *Beliefs*

About the Importance of Specific Involvement Practices scales at pre-administration were 4.71 (range, 4.29-5.00) and 4.83 (range, 4.00-5.19), respectively. At post-administration, the mean ratings were 4.76 (range, 4.29-5.14) and 5.00 (range, 4.31-5.13), respectively. The teachers' ratings on the *Self-efficacy for Teaching* scale show that 5 out of 6 of the teachers had ratings at or above 4, meaning they believed that they could teach their students and the students would learn at baseline (mean = 4.68; range, 3.83-5.17). After the intervention, all of the teachers indicated they believed they could teach students well (mean = 4.78; range, 4.42-5.08). Ratings on the teacher *Reports of Parents' Involvement* scale were slightly lower at pre- (mean = 3.67; range, 2.93-4.07) and post-administration (mean = 3.88; range, 2.93-4.36), indicating that the teachers estimated that 30-70% of their students' parents participate across several types of activities. Furthermore, the invitations to parental involvement were also slightly lower than a 4 at pre- (mean 3.51; range 2.06-4.56) and post-administration (mean = 3.55; range, 2.50-4.25), indicating that they typically invite parents to participate in a variety of school activities once per month or per semester. Overall, the teachers' ratings across the six scales administered were positive, as the majority of mean item ratings were in the agreement range. However, there was not a systematic change in teachers' beliefs about parent involvement across the scales from pre- to post-administration.

Parent beliefs about involvement. Parents completed the Parent Involvement Project Parent Questionnaire (Family-School Partnership Lab, 2010). The mean item rankings for each subscale across parents are shown in Table 10. Beth's mother did not return the follow-up questionnaires, so no post-intervention scores are presented. Parents' ratings on the *Valence Towards School* scale were positive at pre- (mean = 5.21;

range, 4.33-6) and post-administration (mean = 5.53; range, 5-6), indicating that parents liked their own school experience. The parents' mean ratings on the *Role Construction for Involvement* scale was 5.34 (range, 4.10-6) at baseline, and 5.24 (range, 4.70-6) following the intervention, which shows that parents agreed that they should be actively involved in their child's education. Reports for the *Self-Efficacy for Helping the Child Succeed* were also positive at baseline (mean = 4.09; range, 2.8-4) and intervention (mean = 4.36; range, 2.6-5.8), but more variable across parents. Prior to intervention, four out of the seven mothers (i.e., mothers of Beth, Carter, Nichole and Alex) rated their efficacy for helping their child succeed above a rating of 4. That is, they agreed they were able to help their child. Following the intervention, three of these parents (Beth's mother did not return the post-intervention rating scale) again rated themselves above a rating of 4. In addition, Laura's mother increased her rating to 4.4 from a baseline of 3.4, indicating that she felt better able to help her child following the training and tutoring experience.

Parent reports of *Encouragement, Modeling, Reinforcement,* and *Instruction* were high at baseline (mean = 5.29, 5.24, 5.45, and 4.84, respectively) and intervention (mean = 5.04, 5.15, 5.49, and 4.88, respectively). However, David's mother's mean item rankings of *Encouragement* at baseline and *Instruction* at both time points fell slightly below a 4, indicating fewer behaviors focused on encouraging learning and use of fewer instructional behaviors. Reports of *School-based Involvement Activities* (e.g., talks with child about school day, volunteers to go on field trips, etc.) was moderately high across parents, with a mean of 4.27 (range, 3.7-5.8) at baseline and 4.18 (range, 3.6-5) after intervention. Similar rankings were found on the *Parent Perceptions of Personal Time*

and Energy (baseline mean = 4.69; range, 3.82-5.73; intervention mean = 4.55; range, 3.27-5.73).

The final three scales provided information about *General Invitations for Involvement from the School* (e.g., teachers at this school are interested and cooperative when they discuss my child, I feel welcomed) and *Specific Invitations for Involvement from the School* (e.g., My child's teacher asked or expected me to help my child with homework, talk with my child about the school day) and *Specific Invitations for Involvement from the Child* (e.g., My child asked me to explain something about his or her homework, talk with his or her teacher). Parents showed higher rankings for general invitations from the school (baseline mean = 4.67; range, 3.5-6; intervention mean = 4.83; range, 4-5.5) than for specific invitations from the school (baseline mean = 3.03; range, 2-3.8; intervention mean = 3.08; range, 2.2-4.6) or specific invitations from the child (baseline mean = 3.17; range, 2.4-3.8; intervention mean = 3.33; range, 1.8-4.4).

The parents' rankings indicate positive attitudes towards school, efficacy for helping, use of encouragement, reinforcement, and instructional strategies. Furthermore, the parents reported moderate to high levels of school-based involvement, time and energy, and invitations for involvement from the school and the child. There was no systematic change in rankings across parents from baseline to after intervention.

Student attitudes towards reading. Figure 7 shows students' full scale (panel 1), recreational (panel 2), and academic (panel 3) percentile ranks on the Elementary Reading Attitude Survey prior to and following parent tutoring. All students' ratings were above the 50^{th} percentile at pre- and post-intervention. A change of at least 7 to 8 points on the full scale and 5 points on the recreational and academic subscales (i.e.,

twice the standard error) is needed before real change can be assumed. Alex showed a 9-point decrease in favorable attitude towards reading. Michael demonstrated improved attitudes towards reading, increasing 23 percentile points. The remaining five students showed no obvious change (range, -6 - +6) in attitudes towards reading. On the recreational portion of the scale, Michael showed an increase (26 percentile points), Carter, Laura, Alex, and Nichole demonstrated a decrease in favorable attitudes (-12, -18, -12, and -6 percentile points, respectively), and Beth and David showed no change (0 and 4 percentile points, respectively). On the academic portion of the scale, Carter and Michael showed improved attitudes (10 and 19 percentile points, respectively), Beth, David, and Alex demonstrated decreases in favorable attitudes (-6, -18, and -6 percentile points, respectively), and David and Nichole showed no change (3 and 0 percentile points, respectively).

Social validity

The acceptability of the parent tutoring was assessed during the final week of participation in the study. Analysis of teacher ratings on the IRP-15 showed mean item ratings to be 5.5 (range, 4.7-6) out of 6 indicating a high level of acceptability. Lowest mean ratings were given for the following items “This intervention is consistent with those I have used in my classroom” (mean = 4.7) and “The child's reading problem is severe enough to warrant the use of this intervention” (mean = 4.8). Items that received the highest ratings were “I would be willing to use this intervention with other children in the classroom” (mean = 5.8) and “Overall, this intervention would be beneficial for children” (mean = 5.8).

Six out of the seven parents returned the completed rating scale (Beth's mom did not complete the form). Parent ratings on the IRP-15 indicated slightly lower, but moderately high levels of acceptability, with a mean rating of 4.8 (range, 2.7-6). The items that received the lowest ratings were "The child's reading problem is severe enough to warrant the use of this intervention" (mean = 3.8) and "This intervention is consistent with those I have used in my home" (mean = 4.2). The highest mean ratings were given for the following items "This intervention should prove effective in improving this child's reading" (mean = 5.3), "This is an acceptable intervention for reading" (mean = 5.2), "Most parents would find this intervention appropriate for helping children with reading" (mean = 5.2).

Students rated the acceptability of parent tutoring on the CIRP. The mean item rating was 4.4 (range, 3.4-5) out of 5, indicating the students found working with their parents using a structured reading program to be acceptable. The items with the lowest mean ratings (3.8 out of 5) were "The reading program may cause problems between me and my parent" and "There are better ways for parents to help with reading than using this reading program." The students rated "The reading program would be a good one to use with other children" and "I think reading program would help children do better in school" highest with mean ratings of 4.9 out of 5.

CHAPTER 4

Discussion

The purpose of this study was to examine the impact of preparing teachers to collaborate with parents to deliver evidence-based parent tutoring for ORF on (a) parents' use of evidence-based tutoring strategies, (b) students' ORF and reading comprehension, (c) teacher and parent perceptions of involvement and student attitudes toward reading, and (d) the social validity of the tutoring program. BST was used to train six teachers to engage parents as tutors for students who were identified to be slow, but accurate readers. A multiple-baseline across participants design (Bailey & Burch, 2002) was used to examine the effectiveness of the parent training on parents' use of evidence-based tutoring strategies and the effectiveness of parent tutoring on students' ORF. During the baseline phase, the parents were asked to work with their child on reading as they typically would, three days per week. Training was staggered across participants at School A and School B and included the parent reviewing the video and handbook and meeting with their child's teacher to collaboratively develop and practice a tutoring plan. After receiving training, the parents were asked to use the structured tutoring program three days per week.

The results showed that teachers provided training with high integrity following a brief 3-hr training session with the researcher. After the parents received training, they increased their use of evidence-based tutoring strategies for improving ORF, showing that teachers can serve as effective parent trainers for parent tutors. Although most of the parents showed good adherence and high engagement across structured tutoring sessions, dosage varied across participants. Four out of the seven students showed a significant

improvement in ORF following implementation of the structured tutoring plan. The effectiveness of the program appeared to be greatest for students who received structured tutoring frequently and with good adherence. In addition to ORF improvements, the majority of students demonstrated corresponding improvements in reading comprehension over the course of the study. Regarding attitudes, the teachers and parents showed positive attitudes towards involvement at both time points. Similarly, the students showed generally positive attitudes towards reading. There was not a systematic change in these variables from pre- to post-intervention. Lastly, the teachers, parents and students found the program to be socially valid. These results will be discussed in greater detail in the following sections.

Impact of Training on Teacher and Parent Treatment Integrity

Treatment integrity data are central to making valid decisions and conclusions about the effectiveness of an intervention (Hagermoser-Sanetti & Kratochwill, 2009a). Treatment integrity data also provide information about the feasibility of programs (Dusenbury et al., 2003), which is important for dissemination of interventions in schools. Previous research, in which parents were trained to tutor their children by researchers or clinicians, demonstrated high adherence, with parents implementing between 82-100% of the steps of the program (Hook & DuPaul, 1999; Resetar et al., 2006; Gortmaker et al., 2007). However, anecdotal reports from these studies indicated that when parents did not implement tutoring as frequently as agreed (generally three days per week), the child made smaller gains in ORF. Unfortunately, previous studies have not considered additional dimensions of treatment integrity such as quality and

engagement in the intervention. In addition, treatment integrity of parent training has not been presented or discussed in prior research.

This study sought to answer the question: does teacher-provided BST in an evidence-based and collaboratively developed tutoring program for ORF (including video instructions and modeling) result in high levels of parent-tutoring treatment integrity? Multiple dimensions of treatment integrity were included to more closely examine the conditions under which parent training and parent tutoring are effective. It was hypothesized that teachers and parents would demonstrate high levels of treatment integrity following BST. The teachers were first trained by the investigator using BST and then provided BST to the participating parents. Therefore, teacher treatment integrity was a direct result of training provided by the investigator, whereas parent treatment integrity was a result of the training provided by the participating teachers. The teachers attended a 3-hr training session to learn how to engage the parents as tutors. Parents then received approximately 1-hr of training, which entailed 30 min of watching the video and reviewing the handbook and 30 min of meeting with the teacher. During the meeting, the teacher and parent reviewed the evidence-based tutoring strategies, developed a tutoring plan, and practiced the plan with the student. Additional strategies found to improve treatment integrity were also used. Specifically, an effort was made to collaboratively develop the plans (Digennaro et al., 2005; Kelleher et al., 2008; Taylor & Miller, 1997), make the plans simple (Allen & Warzak, 2000; Friman & Poling, 1995), provide ready access to needed materials (Detrich et al., 2007; Gresham et al., 2000), and encourage parents to self-monitor implementation using procedural checklists (McIntyre et al., 2007; Plavnich et al., 2010).

The results of the current study partially confirm the first hypothesis. The teachers provided training with high adherence and quality, presumably as a result of BST provided by the investigator. The mean adherence across teachers (excluding Mrs. Allen's due to a recording error) was 97.1% and mean quality was 81.4%. These results provide strong evidence that teachers can serve in the role of parent trainers when given appropriate training to do so. However, it was necessary to provide training and give the teachers the tools to disseminate evidence-based practices because they typically receive little training in how to engage parents as partners (McCutchen & Berninger, 1999; Shumow & Harris, 2000). It is important to note that the amount of time invested in training and working with parents in this study was minimal. To improve teacher skills, this study used BST that incorporated instructions and modeling via a video component and in-session rehearsal and feedback. This training model may be useful for dissemination of other evidence-based practices applicable to school settings. For example, training modules can be developed for specific skills or target behaviors identified through school improvement efforts and delivered during staff meetings. In addition, the model for training parents proved to be efficient. The teachers arranged the meeting, sent home the materials, and met with the family for approximately 30 min. It was possible to devote the majority of time during the meeting to plan development and practice with the child because both parties came to the meeting with background information about the tutoring strategies. Future research may examine how meetings such as these could be tied into or replace traditional parent-teacher conferences. Focusing on dissemination of practices to boost student skills during conferences may

lead to more meaningful home-school collaboration and thereby improved student outcomes as was found in this study for the majority of students.

When the parents received teacher-provided BST in an evidence-based and collaboratively developed tutoring program for ORF, they increased their use of evidence-based tutoring strategies during the recorded sessions. Specifically, following training, the parents used a mean of 82% of the tutoring strategies included in their child's individualized tutoring plan. This was a large improvement from the mean baseline level of 15% and is consistent with prior research. At the individual level, 6 out of the 7 parents showed an immediate increase in use of the strategies after receiving training. Similar to the adherence results, quality of implementation of tutoring improved from baseline to intervention. Engagement remained high across baseline and structured tutoring sessions. However, the dosage of tutoring received by the students varied considerably across participants and across phases for some of the participants (i.e., more or fewer in baseline than in intervention or vice versa).

This is the first study on parent tutoring for ORF to use a multifaceted approach to measuring treatment integrity. Previous researchers have focused almost exclusively on adherence, or the percentage of steps completed. However, the literature supports the need for a more comprehensive approach to measurement of treatment integrity to obtain a complete picture of intervention programs (Dane & Schneider, 1998). Each dimension of integrity—adherence, quality, engagement, and dosage—represents an important aspect of interventions and assists in interpretation of results. The current study validates the need for comprehensive measurement. Simply examining the adherence data would have given an incomplete representation of the effectiveness of the tutoring program. For

example, if adherence was examined for Beth's mother in the absence of the dosage data, one might presume that the intervention was not appropriate for Beth. However, when the dosage data are considered with the adherence, quality, and engagement data, one arrives at a different conclusion. Specifically, tutoring was not provided with sufficient frequency for the intervention to be effective, making it impossible to determine whether the intervention was appropriately chosen or not. Conversely, Carter's mother provided an adequate dosage, but adherence to the program was low. If one evaluated the degree of treatment integrity only on the basis of the number of sessions of tutoring Carter received, the appropriateness of the intervention would similarly be questioned. Therefore, using a more comprehensive approach to treatment integrity aids in identifying reasons for ineffectiveness more precisely. Future research on parent tutoring should measure multiple dimensions of treatment integrity to identify the reasons for poor treatment implementation, and to ascertain how the dimensions interact with one another. The information gained can then be used to inform best practices for use in school settings. This study extended the literature by offering a preliminary method for systematically obtaining and reporting on multiple facets of treatment integrity.

Future research should refine and possibly standardize measurements so that conclusions about the conditions under which parent tutoring are successful can be identified. Development of a reliable tool for measuring quality of training and tutoring would be useful. In this study, quality was measured using a 3-point Likert-type rating scale and was specific to the steps of the protocols. However, interscorer reliability for the parent training sessions was poor. In addition, quality ratings were not available for some of the strategies, as permanent products were used to augment measurement of

adherence when parents did not record all of the session (e.g., written responses to comprehension questions, graphs of student performance). Furthermore, the measure may not have captured variables that influence one's desire to participate in the program. For example, variables include how inviting the teacher was during the meeting, how enthusiastic the parent was about reading with their child or noticing the improvement in reading, and how much the child enjoyed reading with the parent. A more global measure of quality of parent tutoring may help to capture additional variables impacting student outcomes and would allow for comparison across studies that use different, but related tutoring programs. Measurement of multiple dimensions of treatment integrity is essential to accurate interpretation of results, especially research that is conducted under naturalistic conditions (Dane & Schneider, 1998). Hagermoser-Sanetti et al. (2009b) proposed a more stringent definition of treatment integrity describing it as, "the extent to which essential intervention components are delivered in a comprehensive and consistent manner by an interventionist trained to deliver the intervention" (p. 448). This definition encourages researchers to more closely scrutinize the essential components of treatment programs and the factors impacting implementation and subsequent outcomes. Standardizing definitions of the dimensions of treatment integrity for parent tutoring research would facilitate between-study comparisons and further our understanding of the conditions under which parent tutoring is effective (Dane & Schneider, 1998).

In the current study, adherence and quality appeared to be highly related, likely due to the method of measurement. Engagement was high and consistent across all participants, but this may not be the case for all parent-child dyads, especially children with difficult-to-manage behavior. If parents and children are not engaged in the tutoring

program, it is not likely to have the same impact on students' reading behavior. Although all of the dimensions offer valuable information, the two that appeared to have the largest effect on student outcomes were adherence and dosage. When either adherence or dosage was low, student outcomes were not as pronounced. The current findings suggest that tutoring should be provided at least two days per week with moderate to high integrity. However, these findings require further validation. Future studies should also examine the use of progress monitoring and treatment integrity data to develop a strategic process for providing additional support to parents to increase the likelihood of positive student outcomes.

Student Reading Outcomes

The second research question asked whether tutoring provided by parents who are trained by teachers to implement a structured and collaboratively developed program that includes evidence-based tutoring strategies improve students' ORF and comprehension measured using a GOM. It was hypothesized that students would show improvements in ORF and comprehension upon implementation of the structured tutoring program. The results confirm this hypothesis.

This study sought to improve tutoring research by using (a) more structured participant inclusion criteria, (b) a global outcome measure (GOM) to standardize measurement, and (c) longer intervention periods to monitor the effectiveness of the intervention. Previous research on parent tutoring did not screen students to ensure that they had the necessary pre-requisite skills for an ORF intervention (Duvall et al., 1992; Gortmaker et al., 2007; Persampieri et al., 2006; Resetar et al., 2006). In the current study, the students were referred by their teachers, but then selected for participation

following screening. The students met criteria for inclusion in the program if they read slowly (i.e., below the 50th percentile), but accurately (i.e., at or above 95% of words read correctly). In addition, the present study used a GOM, which provides information about the generalized changes in ORF that can be achieved as a result of parent tutoring. GOMs also allow for comparison of an individual student's performance to national norms. Although this measure is less sensitive to growth, it provides a better overall estimate of generalized improvement in ORF. Standardizing the measure used across studies on parent tutoring will be helpful for summarizing data on the effectiveness of parent tutoring and make it easier to determine which tutoring programs produce the best outcomes. This study also provided structured tutoring for a longer period than previous studies so that more reliable slope estimates could be obtained.

A unique aspect of this study was that during baseline, the parents were asked to read with their children as they typically did at home. Arranging the baseline in this way provided valuable information about how students respond to additional unstructured opportunities to respond as opposed to structured tutoring. The baseline data validate the findings of the National Reading Panel (NICHD, 2000), which revealed that programs that simply encourage students to read more (which is typically recommended by teachers) do not lead to improvements. Specifically, with the exception of Laura, none of the students showed improvements in ORF when given opportunities to practice reading at home with their parent. In other words, simply asking parents to help their children without training them in evidence-based strategies is not enough. Students must also receive good assistance that is adapted to their instructional needs. However, the length of the baselines may not have allowed for sufficient opportunities to make an impact on

ORF. Future research should confirm this finding by extending the baseline phase for a longer period of time in order to calculate reliable slope estimates during baseline and intervention. The slope estimates could then be compared between phases across participants.

During the intervention, the students received structured, evidence-based instruction (repeated reading, listening passage preview, performance feedback, and error correction). Overall, results of the CDC analysis (Fisher et al., 2003) revealed that five out of the seven students demonstrated a significant improvement in ORF. Visual inspection revealed an increase in level and trend and a decrease in variability for three students following implementation of the individualized, structured parent-delivered tutoring plan. The data showed that the mean difference between baseline and intervention CWPM across students was 16 CWPM (i.e., range, 7.5 – 31.7). In addition, all students showed an increase in standing as compared to students of the same grade. However, three students—Beth, Laura, and Nichole—did not show a systematic change in performance. These data demonstrate replication of the effect of parent tutoring across some, but not all participating students. Other factors aside from the intervention, such as treatment integrity and the assessment materials, may have influenced student outcomes.

The findings provide general validation of the relationship between treatment integrity and student outcomes. The three students (Michael, David, and Alex) who surpassed the 50th percentile based on AIMSweb normative data received at least two or more tutoring sessions per week with good adherence. The relationship between treatment integrity and student outcomes was also seen for Laura. Specifically, as her mother's adherence improved, Laura showed similar rates of growth in ORF. In

summary, a combination of adequate dosage, moderate to high adherence, and high engagement during parent tutoring appears necessary to produce improvements in students' ORF. This relationship between treatment integrity and student outcomes is encouraging, but requires further validation through future research.

The positive findings for ORF are similar to those found by Gortmaker et al. (2007). Using a GOM, the authors found increases in level and trend, but variable performance within students. The within-person variability may be a function of the reading passages used for assessment. In the development of GOMs efforts are made to equalize the difficulty level of the passages, but the actual difficulty is still likely to vary by student. Therefore, it is important to examine the slope, as opposed to individual data points, when interpreting these data. Future research should use more stringent methods of passage selection, such as screening students on all of the GOM passages and removing those that appear to be particularly easy or difficult for individual students. Screening students on the passages would also provide evidence of growth on individual passages over time. To limit the amount of individual screening time needed, passages could be field tested within a school to identify a set of passages that is likely to decrease standard error. Those passages could then be used for students participating in the tutoring program. Ardoin and Christ (2009) described a method for field testing passages that resulted in lower standard errors in comparison to commercially available passages. A large number of passages were administered to students within 1 week and then rank ordered for difficulty according to their Euclidian distance. The passages with the smallest Euclidian distance were selected and then arranged for administration, alternating between lesser and greater Euclidian distances. Researchers should also

examine if student progress differs depending on whether the passages used are fiction or nonfiction. In this study, the tutoring passages were nonfiction, whereas the passages used for assessment were predominantly fiction. It is possible that if the students had been assessed in nonfiction passages, they may have demonstrated higher rates of growth, as the passages would have been more similar to those used in tutoring.

In general, the current data indicate that parent tutoring can produce generalized improvements in ORF. The students in this study showed a mean rate of growth of 1.5 CWPM per week. Three out of the seven students demonstrated improvements in ORF that met or exceeded the expected growth rate found in the literature. Although these findings support the use of parent tutoring for ORF as a promising practice for promoting student's academic skills, parent tutoring should be used in coordination with other, more rigorous interventions at the school, not to replace such interventions. Students who are performing below grade-level expectations should receive differentiated instruction in the classroom and may also require more structured and explicit instruction to ameliorate ORF skill deficits. Therefore, parent tutoring should be used to supplement the programming that occurs in the classroom and in small group interventions. Involving parents in the interventions by teaching them how to provide tutoring for ORF or other reading skills is likely to boost student outcomes and catch the students up to grade level more quickly. For students who are performing at or slightly below grade-level expectations, parent tutoring may provide the support needed to maintain an appropriate level of performance.

Beyond improvements in ORF, it is important to consider the impact of the intervention on reading comprehension. Previous research supports the idea that when

students read fluently, they are able to allocate more attention to understanding and constructing meaning from what is read, which is the ultimate goal of reading (Adams, 1990; NICHD, 2000; Snow, Burns, & Griffin, 1998). All of the parent-teacher teams chose to include discussion as part of their plan, which indicates that they view comprehension as an important component of reading instruction. However, previous studies on parent tutoring for ORF have failed to either include discussion as a component or measure reading comprehension outcomes (Gortmaker et al., 2007; Hook & DuPaul, 1999; Persampieri et al., 2006; Resetar et al, 2006). To decrease the effort required for discussion of the text, parents were provided with questions to ask before reading and after reading for each passage. This study measured student progress using AIMSweb Reading Maze probes bi-weekly. Although one must be cautious in drawing conclusions because of the limited amount of baseline and intervention data collected, gains in RC on the Maze probes appear to be related to ORF improvements. The effect of the structured tutoring was most apparent for the three students who initially scored below the 50th percentile (i.e., Carter, Laura, and Alex). Overall, by the end of the intervention period, all of the students scored above the 50th percentile based on AIMSweb national normative data. The results provide partial validation of the effectiveness of ORF intervention strategies for improving reading comprehension. However, given that multiple strategies were included in the structured tutoring programs, it is unclear which strategies had the greatest effect on comprehension outcomes. In addition, the amount of time spent by the parents on each strategy during tutoring may have also influenced the results. For example, it may be that the three

students who made the greatest gains in comprehension received more time during intervention in discussion of the passages than the other students.

Future research on parent tutoring for ORF should include reading comprehension as an important outcome. This study used AIMSweb Reading Maze probes to measure improvements; however, a comprehensive assessment of reading comprehension would provide more detailed information about the effect of ORF interventions on reading comprehension. For example, students could be assessed by asking them to answer open-ended or multiple-choice questions about text content, or administering norm-reference comprehension tests such as the Gray Oral Reading Test and Woodcock Reading Mastery Tests could also be used.

Beliefs and Attitudes

The third research question was related to beliefs and attitudes of the participants. Specifically, do teachers' ratings of beliefs about involving parents, parents' ratings of involvement, and students' attitudes towards reading change following parent training and parent tutoring for ORF? It was hypothesized that parent and teacher beliefs would change in the direction of improvement as the intervention sought to create a framework for home-school collaboration, which is associated with positive outcomes for both parties. In addition, this study used strategies for enhancing parent involvement, such as giving parents a specific invitation for participation in their child's education and training in how to help their children at home (Anderson & Minke, 2007; Hoover-Dempsey et al., 2005; Walker et al., 2005). The results do not support the hypotheses. There was not a systematic change across participants in their beliefs and attitudes from pre- to post-

administration. Lack of support for the hypothesis was not surprising, however, given the positive baseline ratings.

Specifically, the teachers participating in this study provided positive mean item ratings across the scales administered. The highest mean ratings were related to the belief that parent involvement is important, parents are able to help children succeed in school, beliefs about the importance of specific involvement practices at home, and the belief that they could teach students well. The parents' ratings were also positive prior to and following intervention, with no systematic change between the time points. Mean parent ratings were highest for positive attitudes towards school, efficacy for helping, use of encouragement, reinforcement, and instructional strategies. The fact that most of the parents agreed that they were able to help their child at home is noteworthy.

Given the high initial ratings, it is possible that positive attitudes towards involvement may be necessary for success of the intervention (i.e., teachers collaborate with parents to provide evidence-based tutoring for ORF) used in the present study. The teachers' and parents' ratings indicate a positive approach and attitudes towards education and collaboration. Parents and teachers who have less favorable or contrasting attitudes may experience more difficulty working with one another as part of this intervention. If attitudes contrast, one party may become distraught, provide less positive feedback, and discontinue involvement practices. Therefore, future studies should explicitly target teachers and parents who do not provide high ratings prior to intervention. In addition, it may be beneficial to administer different scales that are available to determine which scales provide the best predictors of treatment integrity by

teachers and parents. It is possible that the scales used in this study were too general to capture attitudes about engagement specific to parent tutoring practices.

Anecdotally, the schools participating in this study placed emphasis on the importance of parents in the education of students and had high rates of parental involvement. This is not the case for all schools and it is possible that the intervention package may not produce the same results in schools that place less emphasis on home-school relationships. Thus, prior to implementing the intervention package, it may be useful for schools to assess their system to determine if elements for positive home-school collaboration are in place. Christenson and Sheridan (2001) outline four key elements that are necessary for optimal relationships: (a) approach or the framework for interaction, (b) attitudes or the values about home-school relationships, (c) atmosphere or the school climate for teachers and families, and (d) actions or tactics for creating shared responsibility. Evaluating each of the elements and making changes to improve the conditions is likely to make programs such as parent tutoring more viable and successful. Nonetheless, modifications to the intervention package may still be necessary to meet the specific needs and culture of diverse families.

It was also hypothesized that students' attitudes towards reading would improve if ORF rates increased during parent tutoring as students who find reading to be effortless and enjoyable are likely to have positive attitudes towards reading (Cunningham & Stanovich, 1998; Stanovich, 1986). Results from this study do not support the relationship between improvements in ORF and increases in attitudes towards reading. Specifically, of the four students who showed significant gains in ORF, one (Michael +23 percentile points) reported improved attitudes towards reading, one (Alex -9 percentile

points) showed decreases in favorable attitudes towards reading, and the other two (Carter and David) demonstrated no significant change in attitudes. However, it is important to note that all of the students' ratings were above the 50th percentile prior to and following the intervention, indicating generally positive attitudes towards reading at both time points. It is possible that students who report low initial attitudes towards reading (i.e., below the 50th percentile) would show improved attitudes following intervention. Research indicates that there is a gap in ratings of attitudes towards reading for low- and high-achieving students (McKenna & Kear, 1990). Although student attitudes did not appear to be related to changes in ORF in this study, researchers should consider student attitudes towards reading when making instructional decisions. For example, students who have negative attitudes towards reading may display more problematic behavior during tutoring because it is not an enjoyable activity, and therefore might benefit from the inclusion of a reward contingency as part of the tutoring program to increase motivation to participate.

Social Validity

When examining the use of an intervention in natural contexts, it is critical to assess social validity as a part of an overall appraisal of sustainability (Strain & Schwatz, 2001). If participants do not find the intervention to be acceptable, then others may be less likely to use the intervention even if it is effective. Furthermore, interventions perceived to be unacceptable are unlikely to contribute to a science and technology of behavior change (Cooper et al., 2007). Therefore, the final research question sought to determine whether teacher-delivered parent training for tutoring lead to favorable social validity ratings for BST training and parent tutoring for teachers, parents, and students. It

was hypothesized that teachers, parents, and students would rate the procedures and strategies as socially valid. The results support this hypothesis. The teachers, parents, and students provided high ratings on the IRP and CIRP, indicating that they held favorable views of the general acceptability of the parent tutoring intervention. These data are consistent with prior research on parent tutoring (e.g., Gortmaker et al., 2007). However, this study expanded the assessment of social validity of parent tutoring for ORF to include teacher perceptions of social validity. This finding is valuable given that teachers are in perhaps the best position to disseminate evidence-based tutoring to parents of struggling students.

The fact that the teachers, parents, and students perceived the intervention to be socially valid is important to future dissemination efforts. Baer, Wolf, and Risley (1987) make this point cogently:

> The point of social-validity measures is to predict (and thus avoid) rejection of an intervention, especially when it is disseminated (which, because of its large scale, may prove less tolerable to consumers than the initial small-scale research trials). If an intervention is socially invalid, it can hardly be effective, even if it changes its target behaviors thoroughly and with an otherwise excellent cost-benefit ratio; social validity is not sufficient for effectiveness but is necessary to effectiveness (p. 322-323).

The high ratings provide some indication that other teachers and parents may be willing to adopt and use the parent tutoring program evaluated in this study. Kratochwill and Shernoff (2004) note that collaboration between researchers, practitioners, and consumers is necessary for the successful dissemination and sustainability of evidence-based

interventions. Research-to-practice studies such as this one provide valuable information about the effectiveness and social validity of the procedures under more naturalistic conditions. Rogers (1995) outlined several characteristics that impact the adoption of innovations in practice, including the (a) relative advantage of the innovation compared to current practices, (b) compatibility of the innovation to match the needs and values of those in the setting (c) complexity and ease of use, (d) ability to try the innovation to determine fit, and (e) observability of the outcomes. The parent tutoring procedures used in this study seem to be consistent with the majority of these characteristics of successful adoption.

The feedback from the social validity questionnaires can serve as a guide for making modifications to best meet their needs and values of the target population. Therefore, although the ratings were high, it is worthwhile to examine the items that received the lowest ratings. In this study, teachers (mean = 4.7) and parents (mean = 4.2) gave the lowest rating for the item, "This intervention is consistent with those I have used in my home/classroom." Low ratings on this item are not unexpected, given that teachers are not used to providing parents with training on specific skills and parents are not used to using specific evidence-based strategies when working with their children. However, it may be possible to modify the procedures to be more consistent with strategies that are currently used. For example, the parent training meetings could be incorporated into parent-teacher conferences. In addition, using story or chapter books for home reading practice, as opposed to structured passages, may be more acceptable and similar to what parents already use with their children at home. The evidence-based strategies could be

used for the first couple of paragraphs of a story and then the child could continue with reading the story as they typically would.

The other item rated lowest, but still positively by the parents (mean = 3.8) and teachers (mean = 4.75) was, “The child's reading problem is severe enough to warrant the use of this intervention.” This item may have been rated lower because all of the students except for Laura performed between the 25th and 50th percentile based on AIMSweb normative data at baseline, indicating that they had difficulties, but not significant basic reading skill deficits (e.g., phonemic awareness, phonics). In addition, the students selected to participate in the study read accurately, which may have led parents and teachers to believe the students did not have reading problems that warranted intervention. Parent tutoring for ORF would not be an appropriate intervention for students that have more basic reading deficits. Although the definition and importance of ORF was discussed during the trainings, more emphasis may be needed to help parents and teachers better understand ORF skill deficits. In general, social validity data should be used to inform future parent tutoring programs and modifications that can be made to fit the values and expectations of the schools that use the program, especially if is to be sustained.

Rogers (1995) described five phases of the innovation adoption process (a) agenda setting/problem identification, (b) matching problem with innovation, (c) redefining/restructuring the innovation to fit the setting, (d) clarifying the meaning of the innovation for all parties, and (e) routinizing the innovation as part of the organization. Many innovations and evidence-based practices lose steam after the second stage in the process because the intervention is not modified to fit the setting and is therefore not

sustained by the involved parties. Researchers should continue to collect social validity data and feedback from participants. The data can be used to modify parent tutoring programs so that parent tutoring remains a viable method of supporting students' ORF growth. It will also be important to establish methods of ongoing training for teachers that clearly describe the program goals and procedures. Lastly, future research should examine more closely what modifications are acceptable and how schools can make training of parent tutors a routine practice to support student learning.

Limitations

Several limitations should be noted when interpreting the results of the current study. First, many of the families struggled to find time for tutoring in addition to other demands such as helping with homework, assisting with sporting activities, and caring for other children in the home. Therefore, it may be necessary to identify ways to make parent tutoring better fit the lifestyles of busy families. For example, technology could be used to make the intervention more portable (e.g., readings and timer on an iPad or similar device). Alternatively, if tutoring is warranted, teachers might consider decreasing the amount of other homework assigned so that the parents can focus on the most essential target skill with the child.

Another option to the problem of insufficient dosage is to find ways to increase parent and student motivation to engage in tutoring on a consistent basis. For example, students' motivation could be increased by providing a small reward at school for returning completed tutoring logs and graphs to the teacher. If students are motivated to participate in tutoring, they may be more likely to request that their parents' help them with reading at home, which in turn could improve the parents' motivation, as student

invitations are a significant predictor of parent involvement (Hoover-Dempsey et al., 2005). Parents may also be more likely to provide tutoring if they receive more positive ongoing feedback. As part of this study, parents were given the opportunity to write comments to the teacher. However, parents rarely wrote comments. Future research should examine more structured ways for parents and teachers to communicate about implementation and give one another positive feedback. Identification of effective and practical methods to increase parent integrity with tutoring procedures would be useful when implementing a framework for training parents and delivering effective instruction to students.

Second, the participants in this study were generally homogenous (i.e., white, middle to upper class, students attending parochial schools) and held positive beliefs about involvement, so it is unclear if the same outcomes would be achieved with a different population. Variables such as parent education level must be carefully considered. For example, if parents are not fluent readers, they may feel uncomfortable implementing the strategies used in this study. However, tutoring strategies can be modified to best fit families, but still provide structured reading practice. In fact, researchers have successfully used similar components within an audio recorded format that provided modeling of the text and verbal instructions for implementation for families that spoke English as a second language (Kupzyk, Hofstadter, McCurdy, & Berger, 2010). Teachers could be taught how to guide parents in selecting an evidence-based parent tutoring program to be in line with the parents' skill level and the child's needs. As discussed earlier, other variables, such as positive teacher and parent attitudes towards school and beliefs about parent involvement, may be precursors to effective

implementation of such programming (Christenson & Sheridan, 2001). Therefore, prior to dissemination of parent tutoring programs in schools, it would be valuable to identify the conditions necessary for effective implementation.

A third limitation of the current study was the limited amount of data collected during baseline phases, especially for reading comprehension. Researchers should examine student performance for a longer period of time prior to implementation of the intervention so that baseline slopes would be more discernible. In addition, the implementation of the intervention for subsequent participants should be delayed until a change is seen for the previous student. More strategic staggering of intervention implementation would likely enhance the demonstration of experimental control; specifically, the replication of the effects across students. This proved difficult within the context of the current study, as teachers had to arrange meetings with the parents in advance and delaying the intervention was not desirable. However, researchers should plan for additional time between introduction of the intervention across participants in order to allow for the anticipated effect to occur for earlier participants.

Conclusion

Given that 40 percent of fourth-grade students in the nation have ORF difficulties (U.S. Department of Education, 2002), coordinated home-school programs are needed to improve student outcomes. Despite the positive findings from studies of evidence-based parent tutoring for ORF, use of such programs in schools has been limited, perhaps due to lack of teacher preparation in engaging parents (McCutchen & Berninger, 1999; Shumow & Harris, 2000). In previous studies on parent tutoring, parents were taught how to provide evidence-based tutoring by researchers or clinicians. This study sought to

advance the literature by using teachers as opposed to researchers or clinicians to train parents in a more natural context within schools.

The current study extended the literature on parent tutoring by showing that teachers can serve as effective parent trainers. Using teachers as change agents in disseminating evidence-based practices appears to be a promising approach to meeting the needs of students and parents. In addition, the findings provide validation of the need for more structured tutoring, as students did not appear to make progress during baseline even though they received additional opportunities to respond outside of the school setting. In other words, simply asking parents to read at home with their children is not likely to produce improvements in ORF. Overall, after receiving training (i.e., video, handbook, and meeting with teacher), the parents used more evidence-based tutoring strategies during reading practice with their children at home.

During implementation of the structured tutoring, the majority of students showed improvements in ORF and comprehension. The students who benefited the most received two or more reading sessions per week that were delivered with good adherence. Parent tutoring for ORF was deemed by the participants in this study to be a socially valid method for helping students with ORF. This finding is important if parent tutoring is to be disseminated for use in schools, as parent tutoring is not likely to be used if people do not find it to be acceptable.

As schools move toward adoption of evidence-based practices, it is important that researchers provide guidance for schools in adoption, implementation, and sustainability of the practices. In particular, guidance is needed for training, selecting appropriate students, and monitoring student progress. This study took an important first step in

translating research on parent tutoring for ORF to the natural context of schools. The training model used was efficient and led to increases in parents' use of evidence-based tutoring strategies, and subsequent improvement in students' ORF. Overall, the parent tutoring results of this study are encouraging and provide evidence of the positive impact teachers and parents can have on students when they collaborate.

References

Adams, M. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: Massachusetts Institute of Technology Press.

Adams, G. L. & Brown, S. (2007). *The six-minute solution: A reading fluency program*. Dallas, TX: Cambium Learning.

Alber-Morgan, S. R., Ramp, E. M., Anderson, L. L., & Martin, C. M. (2007). Effects of repeated readings, error correction and performance feedback on the fluency and comprehension of middle school students with behavior problems. *Journal of Special Education, 41,* 17-30. doi:10.1177/00224669070410010201

Allen, K. D., & Warzak, W. J. (2000). The problem of parental nonadherence in clinical behavior analysis. *Journal of Applied Behavior Analysis, 33,* 373-391. doi:10.1901/jaba.2000.33-373

Allington, R. L. (1984). Content coverage and contextual reading in reading groups. *Journal of Reading Behavior, 16,* 85-96.

Anderson, K. J., & Minke, K. M. (2007). Parent involvement in education: Toward an understanding of parents' decision making. *Journal of Educational Research, 100*, 311-323. doi:10.3200/JOER.100.5.311-323

Ardoin, S. P., & Christ, T. J. (2009). Curriculum-based measurement of oral reading: Standard errors associated with progress monitoring outcomes from DIBELS, AIMSweb, and an experimental passage set. *School Psychology Review, 38,* 266–283.

August, G. J., Bloomquist, M. L., Lee, S. S., Relamuto, G. M., & Hektner, J. M. (2006). Can evidence-based prevention programs be sustained in community practice

settings? The early risers' advanced-stage effectiveness trial. *Prevention Science, 7,* 151-165. doi:10.1007/s11121-005-0024-z

Baer, D. M., Wolf, M. M., & Risley, T. R. (1987). Some still-current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 20,*313-327.

Bailey, J. S., & Burch, M. R. (2002). *Research methods in applied behavior analysis.* Thousand Oaks, CA: Sage.

Baker, L. (2003). The role of parents in motivating struggling readers. *Reading & Writing Quarterly, 19*, 87-106. doi:10.1080/10573560308207

Begeny, J. C., Daly, E. J. III, & Valleley, R. J. (2006). Improving oral reading fluency through response opportunities: A comparison of phrase drill error correction with repeated readings. *Journal of Behavioral Education, 15,* 229–235. doi:10.1007/s10864-006-9028-4

Belfiore, P. J., Skinner, C. H., & Ferkis, M. (1995). Effects of response trial repetition on sight-word training for students with learning disabilities. *Journal of Applied Behavior Analysis, 28,* 347-348. doi:10.1901/jaba.1995.28-347

Blom-Hoffman, J., O'Neil-Pirozzi, T., Volpe, R., Cutting, J., & Bissinger, E. (2006). Instructing parents to use dialogic reading strategies with preschool children: Impact of a video-based training program on caregiver reading behaviors and children's related verbalizations. *Journal of Applied School Psychology, 23,* 117-131. doi:10.1300/J370v23n01_06

Blue-Banning, M., Summers, J., Frankland, H. C., Nelson, L., & Beegle, G. (2004). Dimensions of family and professional partnerships: Constructive guidelines for collaboration. *Exceptional Children, 70,* 167-184.

Bramlett, R. K., Murphy, J. J., Johnson, J., Wallingford, L., & Hall, J. D. (2002). Contemporary practices in school psychology: A national survey of roles and referral problems. *Psychology in the Schools, 39*, 327-335. doi:10.1002/pits.10022

Burns, M. K. (2007). Reading at the instructional level with children identified as learning disabled: Potential implications for response-to-intervention. *School Psychology Review, 22*, 297-313. doi:10.1037/1045-3830.22.3.297

Burns, M. K. & Wagner, D. (2008). Determining an effective intervention within a brief experimental analysis for reading: A meta-analytic review. *School Psychology Review, 37,* 126-136.

Busk. P. L,. & Serlin. R, C. (1992). Meta-analysis for single-case research. In T. R. Kratochwill & J. R. Levin (Eds.), *Single-case research design and analysis: Applications in psychology and education* (pp. 187-212). Hillsdale, NJ: Lawrence Erlbaum Associates

Carver, R. P. & Hoffman, J. V. (1981). The effect of practice through repeated reading on gain in reading ability using computer-based instructional system. *Reading Research Quarterly, 3*, 374-390.

Catania, C. N., Almeida, D., Lui-Constant, B., & Digennaro-Reed, F.D. (2009). Video modeling to train staff to implement discrete-trial instruction. *Journal of Applied Behavior Analysis, 42*, 387-392. doi:10.1901/jaba.2009.42-387

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

Christenson, S. L. (1995). Families and schools: What is the role of the school psychologist? *School Psychology Quarterly, 10,* 118-132. doi:10.1037/h0088315

Christenson, S. L. (2004). The family-school partnership: An opportunity to promote the learning competence of all students. *School Psychology Review, 33*, 83-104. doi:10.1521/scpq.18.4.454.26995

Christenson, S. L., Rounds, T., & Gorney, D. (1992). Family factors and student achievement: An avenue to increase students' success. *School Psychology Quarterly*, *7*, 178-206. doi:10.1037/h0088259

Christenson, S. L., & Sheridan, S. M. (2001). School and families: Creating essential connections for learning. New York: Guilford Press.

Codding, R. S., Feinberg, A. B., Dunn, E. K., & Pace, G. M. (2005). Effects of immediate performance feedback on implementation of behavior support plans. *Journal of Applied Behavior Analysis, 38,* 205–219. doi:10.1901/jaba.2005.98-04

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* San Diego, CA: Academic Press.

Collins, S., Higbee, T. S., & Salzberg, C. L. (2009). The effects of video modeling on staff implementation of a problem-solving intervention with adults with developmental disabilities. *Journal of Applied Behavior Analysis, 42,* 849-854.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis* (2nd ed.). New York, NY: Macmillan.

Cunningham, A., & Stanovich, K. (1998). What reading does for the mind. *American Educator, 22,* 8-15.

Daly, E. J. III, Bonfiglio, C. M., Mattson, T., Persampieri, M., & Forman-Yate, K. (2005). Refining the experimental analysis of academic skills deficits: Part I: An investigation of variables that affect generalized oral reading performance. *Journal of Applied Behavior Analysis, 38,* 485-497. doi:10.1901/jaba.2005.113-04

Daly, E. J. III, Hintze, J. M., & Hamler, K. R. (2000). Improving practice by taking steps toward technological improvements in academic intervention in the new millennium. *Psychology in the Schools, 37,* 61-72. doi:10.1002/(SICI)1520-6807(200001)37:1<61::AID-PITS7>3.0.CO;2-#

Daly, E. J., III., Lentz, F. E., & Boyer, J. (1996). The instructional hierarchy: A conceptual model for understanding the effective components of reading interventions. *School Psychology Quarterly, 4,* 369-386. doi:10.1037/h0088941

Daly, E. J., III, & Martens, B. K. (1994). A comparison of three interventions for increasing oral reading performance: Application of the instructional hierarchy. *Journal of Applied Behavior Analysis, 27,* 459-469. doi:10.1901/jaba.1994.27-459

Daly, E. J., III, & Martens, B. K., Witt, J. C., Olson, S. C. (2007). Varying intervention delivery in response to intervention: Confronting and resolving challenges with measurement, instruction, and intensity. *School Psychology Review, 36,* 562-581.

Daly, E. J., III, Martens, B. K., Dool, E. J., & Hintze, J. M. (1998). Using brief functional analysis to select interventions for oral reading. *Journal of Behavioral Education, 8,* 203–218. doi:10.1023/A:1022835607985

Daly, E. J. III, Persampieri, M., McCurdy, M., & Gortmaker, V. (2005). Generating reading interventions through experimental analysis of academic skills:

Demonstration and empirical evaluation. *School Psychology Review, 34*, 395–414.

Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: Are implementation effects out of control? *Clinical Psychology Research, 18*, 23-45.

Dempster, F. N., & Farris, R. (1990). The spacing effect: Research and practice. *Journal of Research and Development in Education, 23*, 97-101.

Detrich, R., Keyworth, R., & States, J. (2007). A roadmap to evidence-based education: Building an evidence-based culture. *Journal of Evidence-Based Practices for Schools, 8*, 26-44.

DiGennaro, F. D., Martens, B.K., & Kleinmann, A. E. (2007). A comparison of performance feedback procedures on teachers' treatment implementation integrity and students' inappropriate behavior in special education classrooms. *Journal of Applied Behavior Analysis, 40*, 447-461.

DiGennaro, F. D., Martens, B. K., & McIntyre, L. (2005). Increasing treatment integrity through negative reinforcement: Effects on teacher and student behavior. *School Psychology Review, 34*, 220–231.

DiGennaro-Reed, F.D., Codding, R., Catania, C.N., & Maguire, H. (2010). Effects of video modeling on treatment integrity of behavioral interventions. *Journal of Applied Behavior Analysis, 43*, 291-295.

DiStefano, P., Noe, M., & Valencia, S. (1981). Measurement of the effects of purpose and passage difficulty on reading flexibility. *Journal of Educational Psychology, 73*, 602–606. doi:10.1037/0022-0663.73.4.602

Dowhower, S. L. (1987). Effects of repeated reading on second-grade transitional readers' fluency and comprehension. *Reading Research Quarterly, 22,* 389-406. doi:10.2307/747699

Drummond, K. V., & Stipek, D. (2004). Low-Income Parents' Beliefs about their role in children's academic learning. *Elementary School Journal, 104,* 197-213. doi:10.1086/499749

Dunlap, G., DePerczel, M., Clarke, S., Wilson, D., Wright, S., White, R., & Gomez, A. (1994) Choice making to promote adaptive behavior for students with emotional and behavioral challenges. *Journal of Applied Behavior Analysis, 27,* 505-518. doi:10.1901/jaba.1994.27-505

Dusenbury, L., Brannigan, R., Falco, M., & Hansen, W.B. (2003). A review of research on fidelity of implementation: Implications for drug abuse prevention in school settings. *Health Education Research, 18,* 237-256. doi:10.1093/her/18.2.237

Duvall, S. F., Delquadri, J. C., Elliott, M., & Hall, V. R. (1992). Parent-tutoring procedures: Experimental analysis and validation of generalization in oral reading across passages, settings, and time. *Journal of Behavioral Education, 2,* 281-303. doi:10.1007/BF00948819

Eckert, T. L., Dunn, E. K., & Ardoin, S. P. (2006). The effects of alternate forms of performance feedback on elementary-aged students' oral reading fluency. *Journal of Behavioral Education, 15,* 149-162. doi:10.1007/s10864-006-9018-6

Epstein, J. L, & Hollifield, J. H. (1996). Title I and school-family-community partnerships: Using research to realize the potential. *Journal of Education for Students Placed At Risk, 1,* 263-278. doi:10.1207/s15327671espr0103_6

Erion, J. (2006). Parent tutoring: A meta-analysis. *Education and Treatment of Children, 29,* 79-106.

Erion, J., & Ronka, C.S. (2004). Improve oral reading fluency with parent tutoring. *TEACHING Exceptional Children Plus, 1,* 1-8.

Family-School Partnership Lab. (2010, July 6). Family-School Partnership Lab Scale Descriptions. Retrieved from http://www.vanderbilt.edu/peabody/family-school/scaledescriptions.html

Fielding, L., Kerr, N., & Rosier, P. (2007). *Annual growth for all students, Catch-up growth for those who are behind.* Kennewick, WA: New Foundation Press.

Fishel, M., & Ramirez, L. (2005). Evidence-based parent involvement interventions with school-aged children. *School Psychology Review, 4,* 371-402. doi:10.1521/scpq.2005.20.4.371

Fisher, W. W., Kelley, M. E., & Lomas, J. E. (2003). Visual aids and structured criteria for improving visual inspection of single-case designs. *Journal of Applied Behavior Analysis, 36,* 387-406.

Foorman, B.F. & Schatschneider, C. (2003). Measuring teaching practice during reading/language arts instruction and its relation to student achievement. In S. Vaugn & K.L. Briggs (Eds.). *Systems for Observing Teaching and Learning* (pp. 1-30). Baltimore, MD: Brookes Publishing,

Friman, P. C., & Poling, A. (1995). Making life easier with effort: Basic findings and applied research on response effort. *Journal of Applied Behavior Analysis, 28,* 583-590. doi:10.1901/jaba.1995.28-583

Fuchs, L. S., Fuchs, D., & Hamlett, C. L. (1989). Effects of alternative goal structures within curriculum-based measurement. *Exceptional Children, 55*, 429-438.

Fuchs, L. S., Fuchs, D., Hamlett, C. L., Walz, L., & Germann, G. (1993). Formative evaluation of academic progress: How much growth can we expect? *School Psychology Review, 22*, 27-48.

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

Gersten, R., Carnine, D., & White, W. (1984). The pursuit of clarity: Direct Instruction and applied behavior analysis. In W. L. Heward, T. E. Heron, D. S. Hill, & J. Trapp-Porter (Eds.), *Focus on behavior analysis in education.* Columbus, PH: Charles E. Merrill.

Gettinger, M. & Seibert, J. K. (2002). Best practices in increasing academic learning time. In A. Thomas (Ed.), *Best Practices in School Psychology IV: Vol. 1* (4th ed., pp. 773-787). Bethesda, MD: National Association of School Psychologists.

Gickling, E. E., & Armstrong, D. L. (1978). Levels of instructional difficulty as related to on-task behavior, task completion, and comprehension. *Journal of Learning Disabilities,* 11, 559-566. doi:10.1177/002221947801100905

Good, R., & Kaminski, R. (2002). DIBELS oral reading fluency passages for first through third grades (Technical Report No. 10). Eugene: University of Oregon.

Good, R. H., & Shinn, M. R. (1990). Forecasting accuracy of slope estimates for reading curriculum-based measurement: Empirical evidence. *Behavioral Assessment, 12*, 179-193.

Good, R. H., Simmons, D. C., & Smith, S. B. (1998). Effective academic interventions in the United States: Evaluating and enhancing the acquisition of early reading skills. *School Psychology Review, 27,* 45-56.

Gortmaker, V. J., Daly, E.J., III, McCurdy, M., Persampieri, M., & Hergenrader, M. (2007). Improving reading outcomes for children with learning disabilities: Using brief experimental analysis to develop parent-tutoring interventions. *Journal of Applied Behavior Analysis, 40,* 203-221. doi:10.1901/jaba.2007.105-05

Greenwood, C. R. (2009). Treatment integrity: Revisiting some big ideas. *School Psychology Review, 38,* 547-553.

Greenwood, C. R., Delquardi, J., & Hall, R. (1984). Opportunities to respond and student academic performance. In W. L. Heward, T. E. Heron, D. S. Hill, & J. Trapp-Porter (Eds.), *Focus on applied behavior analysis in education* (pp. 58-88). Columbus, OH: Merrill.

Gresham, F.M., Gansle, K.A., & Noell, G.H. (1993). Treatment integrity in applied behavior analysis with children. *Journal of Applied Behavior Analysis, 26*, 257-263.

Gresham, F. M., MacMillan, D. L., Beebe-Frankenberger, M. E., & Bocian, K. M. (2000). Treatment integrity in learning disabilities intervention research: Do we really know how treatments are implemented? *Learning Disabilities Research & Practice, 15,* 198-205. doi:10.1207/SLDRP1504_4

Griffin, E. A., & Morrison, F. J. (1997). The unique contributions of home literacy environment to differences in early literacy skills. *Early Child Development and Care, 127-128*, 233-243. doi:10.1080/0300443971270119

Gunby, K. V., Carr, J. E., & LeBlanc, L. A. (2010). Teaching abduction-prevention skills to children with autism. *Journal of Applied Behavior Analysis, 43,* 107-112.

Hagermoser-Sanetti, L. M., Gritter, K. L., & Dobey, L. M. (2011). Treatment integrity of interventions with children in the school psychology literature from 1995 to 2008. School Psychology Review, 40, 72-84.

Hagermoser-Sanetti, L. M., & Kratochwill, T. R. (2009a). Treatment integrity assessment in the schools: An evaluation of the Treatment Integrity Planning Protocol (TIPP). School Psychology Quarterly, 24, 24-35.

Hagermoser-Sanetti, L. M., & Kratochwill, T. R. (2009b). Toward Developing a Science of Treatment Integrity: Introduction to the Special Series. *School Psychology Review, 38,* 445–459

Hagermoser-Sanetti, L. M., Luiselli, J. K., & Handler, M. W. (2007). Effects of verbal and graphic performance feedback on behavior support plan implementation in a public elementary school. *Behavior Modification, 31,* 454-465. doi:10.1177/0145445506297583

Harachi, T. W., Abbot, R. D., Catalano, R. F., Haggerty, K. P., & Fleming, C.B. (1999). Opening the black box: Using process evaluation measures to assess implementation and theory building. *American Journal of Community Psychology, 27,* 711-731. doi:10.1023/A:1022194005511

Haring, N., Lovitt, T., Eaton, M., & Hansen, C. (1978). *The fourth R: Research in the classroom*. Columbus: Merrill.

Homan, S. P., Klesius, J. P., & Hite, C. (1993). Effects of repeated readings and nonrepetitive strategies on students' fluency and comprehension. *Journal of Educational Research, 87,* 94-99.

Hook, C. L., & DuPaul, G. J. (1999). Parent tutoring for students with Attention-Deficit/Hyperactivity Disorder: Effects on reading performance at home and school. *School Psychology Review, 28,* 60-75.

Hoover-Dempsey, K.V., & Sandler, H.M. (2005). Final Performance Report for OERI Grant # R305T010673: The Social Context of Parental Involvement: A Path to Enhanced Achievement. Presented to Project Monitor, Institute of Education Sciences, U.S. Department of Education, March 22, 2005.

Hoover-Dempsey, K. V., Walker, J. M., Jones, K. P., & Reed, R. P. (2002).Teachers Involving Parents (TIP): An in-service teacher education program for enhancing parental involvement. *Teaching and Teacher Education,18,* 843-867. doi:10.1016/S0742-051X(02)00047-1

Hoover-Dempsey, K. V., Walker, J. M., Sandler, H. M., Whetsel, D., Green, C. L., Wilkins, A. S., Closson, K. (2005). Why do parents become involved? Research findings and implications. *The Elementary School Journal, 106,* 105-130. doi:10.1086/499194

Howe, K. B., & Shinn, M. M. (2002). Standard reading assessment passages (RAPs) for use in general outcome measurement: A manual describing development and technical features. Eden Prarie, MN: Edformation. Retrieved from http://www.aimsweb.com/uploads/pdfs/passagestechnicalmanual.pdf

Jason, L. A., Kurasaki, K. S., Neuson, L., & Garcia, C. (1993). Training parents in a

preventive intervention for transfer children. *The Journal of Primary Prevention, 13,* 213-227. doi: 10.1007/BF01352927

Jenkins, J. R., Larson, K. (1979). Evaluating error-correction procedures for oral reading. *Journal of Special Education, 13,* 145-156. doi:10.1177/002246697901300206

Juel, D. (1988). Learning to read and write: A longitudinal study of 54 children from first through fourth grades. *Journal of Educational Psychology, 80,* 437-447. doi:10.1037/0022-0663.80.4.437

Kameénui, E. & Simmons, D. (2001). Introduction to this special issue: The DNA of oral reading fluency. *Scientific Studies of Reading, 5,* 203-210.

Kaminski, R. A., & Cummings, K. D. (2008). Linking assessments to instruction: Using Dynamic Indicators of Basic Early Literacy Skills in an Outcomes-Driven Model. *Dynamic Measurement Group*. Retrieved from http://www.dibels.org/papers/PM_BDA_032708.pdf

Kelleher, C., Riley-Tillman, T. C., & Power, T. J. (2008). An initial comparison of collaborative and expert-driven consultation on treatment integrity. *Journal of Educational & Psychological Consultation, 18,* 294-324. doi:10.1080/10474410802491040

Kelly-Vance, L., & Schreck, D. (2002). The impact of a collaborative family/school reading programme on student reading rate. *Journal of Research in Reading, 25,* 43-53. doi:10.1111/1467-9817.00157

Kratochwill, T. R., Elliott, S. N., & Busse, R. T. (1995). Behavior consultation: A five-year evaluation of consultant and client outcomes. *School Psychology Quarterly, 10,* 87-117. doi:10.1037/h0088299

Kratochwill, T.R., & Shernoff, E.S. (2004). Evidence-based practice: Promoting evidence-based interventions in school psychology. *School Psychology Review, 33*, 33-48.

Kupzyk, S., Daly, E. J. III, & Andersen, M. N. (2011). A comparison of two flashcard methods for improving sight-word reading. *Journal of Applied Behavior Analysis, 44*, 781-792.

Kupzyk, S., McCurdy, M., Hofstadter, K. L., & Berger, L. (2011). Recorded readings: A taped parent-tutoring intervention. *Journal of Behavioral Education, 20*, 87-102. doi: 10.1007/s10864-011-9123-z

Lafasakis, M., & Sturmey, P. (2007). Training parent implementation of discrete-trial teaching: Effects on generalization of parent teaching and child correct responding. *Journal of Applied Behavior Analysis, 40*, 685-689. doi:10.1901/jaba.2007.685–689

Law, M., & Kratochwill, T. (1993). Paired reading: An evaluation of a parent tutorial program. *School Psychology International, 14*, 119-147. doi:10.1177/0143034393142003

Learning First Alliance. (LFA). (1998, June). Every child reading: An action plan. Retrieved from http://isc.be.edu/pirls2001i/PIRLS2001_Pubs_IR.html

Lee, V. E., & Croninger, R. G. (1994). The relative importance of home and school in the development of literacy skills for middle-grade students. *American Journal of Education, 102*, 286-329. doi:10.1086/444071

Li, G. (2006). What do parents think? Middle-class Chinese immigrant parents' perspectives on literacy learning, homework, and school-home communication. *School Community Journal, 16*, 27-46.

Lynch, J. (2002). Parents' self-efficacy beliefs, parents' gender, children's reader self-perceptions, reading achievement and gender. *Journal of Research in Reading, 25*, 54-67. doi:10.1111/1467-9817.00158

Macurik, K. M., O'Kane, N. P., Malanga, P., & Reid, D. H. (2008). Video training of support staff intervention plans for challenging behavior: Comparison with live training. *Behavioral Interventions, 23*, 143-163. doi:10.1002/bin.261

MacQuarrie, L. L., Tucker, J. A., Burns, M. K., & Hartman, B. (2002). Comparison of retention rates using traditional, drill sandwich, and incremental rehearsal flash card methods. *School Psychology Review, 31*, 584-595.

Martens, B. K., Witt, J. C., Elliott, S. N., & Darveaux, D. (1985). Teacher judgments concerning the acceptability of school-based interventions. *Professional Psychology: Research and Practice, 16*, 191–198. doi:10.1037/0735-7028.16.2.191

McCutchen, D., & Berninger, V. (1999). Those who *know*, teach well. *Learning Disabilities. Research and Practice, 14*, 215-226. doi:10.1207/sldrp1404_3

McIntyre, L. L., Gresham, F. M., DiGennaro, F. M., Reed, D. D. (2007). Treatment integrity in school-based interventions with children in the *Journal of Applied Behavior Analysis* 1991-2005. *Journal of Applied Behavior Analysis, 40*, 659-672.

McKenna, M. C., & Kear, D. J. (1990). Measuring attitude toward reading: A new tool for teachers. *The Reading Teacher, 43,* 626-639.

McLeod, B. D., Southam-Gerow, M. A., Weisz, J. R. (2009). Conceptual and methodological issues in treatment integrity measurement. *School Psychology Review, 4,* 541-546.

Meisinger, E.B., Schwanenflugel, P.J., Bradley, B.A., & Stahl, S.A. (2004). Interaction quality during partner reading. *Journal of Literature Research, 36,* 111-140. doi:10.1207/s15548430jlr3602_1.

Miles, N. I., & Wilder, D. A. (2009). The effects of behavioral skills training on caregiver implementation of guided compliance. *Journal of Applied Behavior Analysis, 42,* 405-410. doi:10.1901/jaba.2009.42-405

Miller, B. V., & Kratochwill, T. R. (1996). An evaluation of the paired reading program using competency-based training. *School Psychology International, 17,* 269-291. doi:10.1177/0143034396173003

Milternberger, R.G. (2008). *Behavior modification: Principles and procedures* (4th ed.). Belmont, CA: Wadworth/Thomas Learning.

Morrow, L. M., & Weinstein, C. S. (1986). Encouraging voluntary reading: The impact of a literature program on children's use of library centers. *Reading Research Quarterly, 21,* 330-346. doi:10.2307/747713

Mortenson, B. P, & Witt, J. C. (1998). The use of weekly performance feedback to increase teacher implementation of a pre-referral academic intervention. *School Psychology Review, 27,* 613-627.

Msengi, S. G. (2007). Family, child, and teacher perceptions of African American adult assistance to young readers. *School Community Journal, 17*, 33-60.

Nabeyama, B. & Sturmey, P. (2010). Using behavioral skills training to promote safe and correct staff guarding and ambulation distance of students with multiple physical disabilities. *Journal of Applied Behavior Analysis, 43*, 341-345.

Nagy, W. E., & Anderson, R. C. (1984). How many words are there in printed school English? *Reading Research Quarterly, 19*, 304-330.

National Association of State Directors of Special Education (NASDSE), Inc. (2008). *Response to Intervention Blueprints for Implementation.* Retrieved from http://www.nasdse.org/

National Center for Education Statistics (2010). The Nations Report Card: Trial Urban District Assessment 2009. (NCES 2010-459). Institute of Education Sciences, U.S. Department of Education, Washington, D.C.

National Center for Learning Disabilities, Inc. (1999). *The NICHD research program in reading development, reading disorders and reading instruction.* Retrieved from C:\Documents and Settings\dell\Desktop\National Center for Learning Disabilities.htm

National Center on Response to Intervention. (2010). *Progress monitoring chart: Reading and math*. Retrieved from http://www.rti4success.org/chart/progressMonitoring/progressmonitoringtoolschart.htm

National Institute of Child Health and Human Development. (NICHD). (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based*

assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups (NIH Publication No. 00-4754). Washington, DC: US Government Printing Office.

Nelson, J. S., Alber, S. R., & Gordy, A (2004). Effects of systematic error correction and repeated readings on the reading accuracy and proficiency of second graders with disabilities. *Education and Treatment of Children, 27,* 186-198.

Noell, G. H., Gansle, K. A., Witt, J. C., Whitmarsh, E. L., Freeland, L., LaFleur, L. H., Gilbertson, D. N., & Northup, J. (1998). Effects of contingent reward and instruction on oral reading performance at differing levels of passage difficulty. *Journal of Applied Behavior Analysis, 31,* 659-663. doi:10.1901/jaba.1998.31-659

Noell, G. H., Witt, J. C., LaFleur, L. H., Mortenson, B. P., Ranier, D. D., & LeVelle, J. (2000). Increasing intervention implementation in general education following consultation: A comparison of two follow-up strategies. *Journal of Applied Behavior Analysis, 33,* 271–284. doi:10.1901/jaba.2000.33-271

Noell, G. H., Witt, J. C., Slider, N. J., Connell, J. E., Gatti, S. L., Williams, K. L., Koenig, J. L., Resetar, J. L., & Duhon, G. J. (2005). Treatment implementation following behavioral consultation in schools: A comparison of three follow-up strategies. *School Psychology Review, 34,* 87-106.

O'Connor, R. E., Bell, K. M., Harty, K. R., Larkin, L. K., Sackor, S. M., & Zigmond, N. (2002). Teaching Reading to Poor Readers in the Intermediate Grades: A Comparison of Text Difficulty. *Journal of Educational Psychology, 94,* 474–485. doi:10.1037//0022-0663.94.3.474

O'Shea, L. J., Munson, S. M., & O'Shea, D. J. (1984). Error correction in oral reading: Evaluating the effectiveness of three procedures. *Education and Treatment of Children, 7*, 203-214.

O'Shea, L. J., Sindelar, P. T., & O'Shea, D. J. (1985). The effects of repeated reading and attentional cues on the oral reading fluency and comprehension of learning disabled readers. *Journal of Reading Behavior, 17,* 129-142.

Persampieri, M., Gortmaker, V., Daly, E. J. III, Sheridan, S. M, McCurdy, M. (2006). Promoting parent use of empirically supported reading interventions: Two experimental investigations of child outcomes. *Behavioral Interventions, 21*, 31-57. doi:10.1002/bin.210

Peterson, L., Homer, A. L., & Wonderlich, S. A. (1982). The integrity of independent variables in behavior analysis. *Journal of Applied Behavior Analysis, 15,* 477–492. doi:10.1901/jaba.1982.15-477

Plavnick, J. B., Ferreri, S. J., & Maupin, A. N. (2010). The effects of self-monitoring on the procedural integrity of a behavioral intervention for young children with developmental disabilities. *Journal of Applied Behavior Analysis, 43,* 315-320.

Poncy, B. C., Skinner, C. H., & Axtell, P. K. (2005). An investigation of the reliability and standard error of measurement of words read correctly per minute using curriculum based measurement. *Journal of Psychoeducational Assessment, 23,* 226-238. doi:10.1177/073428290502300403

Power, T. J., Blom-Hoffman, J., Clarke, A. T., Riley-Tillman, T. C., Kelleher, C., & Manz, P. H. (2005). Reconceptualizing intervention integrity: A partnership-based

framework for linking research with practice. *Psychology in the Schools, 42*, 495-507. doi:10.1002/pits.20087

Rashotte, C., A. & Torgesen, J. K. (1985). Repeated reading and oral reading fluency in learning disabled children. *Reading Research Quarterly, 20*, 180-188. doi:10.1598/RRQ.20.2.4

Reschly, A. L., Busch, T. W., Betts, J., Deno, S. L., & Long, J. D. (2009). Curriculum-based measurement oral reading as an indicator of reading achievement: A meta-analysis of the correlational evidence. *Journal of School Psychology, 47*, 427-469. doi:10.1016/j.jsp.2009.07.001

Resetar, J. L., Noell, G. H., & Pellegrin, A. L. (2006). Teaching parents to use research-supported systematic strategies to tutor their children in reading. *School Psychology Quarterly, 21*, 241-261. doi:10.1521/scpq.2006.21.3.241

Reutzel, D. R., & Hollingsworth, P. M. (1991). Reading comprehension skills: Testing the distinctiveness hypothesis. *Reading Research & Instruction, 30*, 32-46.

Roberts, M. L., Turco, T. L., & Shapiro, E. S. (1991). Differential effects of fixed instructional ratios on students progress in reading. *Psychoeducational Assessment, 9*, 308-318. doi:10.1177/073428299100900402

Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: The Free Press.

Rose, T. L., & Beatti, J. R. (1986). Relative effects of teacher-directed taped previewing on oral reading. *Learning Disability Quarterly, 9*, 193-199. doi:10.2307/1510464

Samuels, S. J. (1979). The method of repeated reading. *The Reading Teacher, 32*, 403-408.

Scholastic Red. (2002). CORE Phonics Survey. Retrieved from http://www.scholastic.com/dodea/Module_2/resources/dodea_m2_tr_core.pdf

Schulte, A. C., Easton, J. E., & Parker, J. (2009). Advances in treatment integrity research: Multidisciplinary perspectives on the conceptualization, measurement, and enhancement of treatment integrity. *School Psychology Review, 38,* 460-475.

Schulte, A. C., Osborne, S. S. (2003). When assumptive worlds collide: A review of definitions of collaboration in consultation. *Journal of Educational & Psychological Consultation, 14,* 109-138. doi:10.1207/s1532768xjepc1402_2

Shapiro, E. S. (1992). Use of Gickling's model of curriculum-based assessment to improve reading in elementary age students. *School Psychology Review, 21,* 168-176.

Shapiro, E. S., Miller, D. N., Sawka, K., Gardill, C. M., & Handler, M. (1999). Facilitating the inclusion of students with EBD into general education classrooms. *Journal of Emotional and Behavioral Disorders, 7,* 83-93. doi:10.1177/106342669900700203

Shaywitz, S. E., Fletcher, J. M., Holahan, J. M., Schneider, A. E., Marchione, K. E., Stuebing, K. K., Francis, D. J., Pugh, K. R., & Shaywitz, B. A. (1999). Persistence of dyslexia: The Connecticut longitudinal study at adolescence. *Pediatrics, 104,* 1351-1359.

Sheridan, S. M., Clarke, B. L., & Burt, J. D. (2008). Conjoint behavioral consultation: What do we know and what do we need to know? In W. P. Erchul & S. M. Sheridan (Eds.), *Handbook of research in school consultation: Empirical foundations for the field* (pp. 171-202). Mahwah, NJ: Lawrence Erlbaum.

Sheridan, S. M., & Kratochwill, T. R. (2008). Conjoint behavioral consultation: Promoting family-school connections and interventions (2nd ed.). New York, NY: Springer Publishing.

Sheridan, S. M., Taylor, A. M., & Woods, K. E. (2008). Best practices for working with families: Instilling a family-centered approach. In A. Thomas and J. Grimes (Eds.), *Best Practices in School Psychology V: Vol. 3* (5th ed., pp. 995-1008). Bethesda, MD: National Association of School Psychologists.

Shin, J., Deno, S. L., Espin, C. (2000). Technical adequacy of the maze task curriculum-based measurement of reading growth. *Journal of Special Education, 34,* 164-172.

Shinn, M., & Shinn, M. (2002a). AIMSweb training workbook: Administration and scoring of reading curriculum-based measurement (R-CBM) for use in general outcome measurement. Retrieved from www.aimsweb.com

Shinn, M., & Shinn, M. (2002b). AIMSweb training workbook: Administration and scoring of reading maze for use in general outcome measurement. Retrieved from www.aimsweb.com

Shriver, M., & Allen, K. D. (2008). *Working with parents of noncompliant children.* Washington DC: American Psychological Association.

Shumow, L., & Harris, W. (2000). Teachers' thinking about home-school relations in low-income urban communities. *Community School Journal, 10*, 9-24.

Skinner, C. H., Fletcher, P. A., & Henington, C. (1996). Increasing learning rates by increasing student response rates: A summary of research. *School Psychology Quarterly, 11*, 313-325. doi:10.1037/h0088937

Slider, N. J., Noell, G. H., & Williams, K. L. (2006). Providing practicing teachers classroom management professional development in a brief self-study format. *Journal of Behavioral Education, 15,* 215-228. doi:10.1007/s10864-006-9033-7

Smith, D. D. (1979). The improvement of children's oral reading through the use of teacher modeling. *Journal of Learning Disabilities, 12,* 172-175. doi:10.1177/002221947901200309

Snow, C., Burns, M., & Griffin, P. (Eds.). (1998). Preventing reading difficulties in young children. Washington, DC: National Academies Press.

Stanovich, K. E. (1986). Matthew Effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly* 21, 360–407. doi:10.1598/RRQ.21.4.1

Stokes, T., & Baer, D. (1977). An implicit technology of generalization. *Journal of Applied Behavior Analysis, 10,* 349-367. doi:10.1901/jaba.1977.10-349

Strain, P. S., & Schwartz, I. (2001). ABA and the development of meaningful social relations for young children with autism. *Focus on Autism and Other Developmental Disabilities, 16,* 120-128.

Swap, S. (1993). *Developing home-school partnerships: From concept to practice.* New York: Teachers College Press.

Taylor, J., & Miller, M. (1997). When timeout works some of the time: The importance of treatment integrity and functional assessment. *School Psychology Quarterly, 12*(1), 4–22. doi:10.1037/h0088943

Teigen, T., Malanga, P. R., Sweeny, W. J. (2001). Combining repeated readings and error correction to improve reading fluency. *Journal of Precision Teaching and Celeration, 17,* 58-67.

Therrien, W. J. (2004). Fluency and comprehension gains as a result of repeated reading. *Remedial and Special Education, 25*, 252-261. doi:10.1177/07419325040250040801

Thurston, L. P., & Dasta, K. (1990). An analysis of in-home parent tutoring procedures: Effects on children's academic behavior at home and in school and on parents' tutoring behaviors. *Remedial & Special Education, 11*, 41-52. doi:10.1177/074193259001100409

Tiger, J. H., Hanley, G. P., & Hernandez, E. (2006). An evaluation of the value of choice with preschool children. *Journal of Applied Behavior Analysis, 39*, 1-16. doi:10.1901/jaba.2006.158-04

Toomey, D. (1993). Parents hearing their children read: A review. Rethinking the lessons of the Haringey Project. *Educational Research, 35*, 223-236.

Topping, K. (1987). Paired reading: A powerful technique for parent use. *Reading Teacher, 40*, 608-614.

Topping, K. (1991). Achieving more with less: Raising reading standards via parental involvement and peer tutoring. *Support for Learning, 6*, 112-115. doi:10.1111/j.1467-9604.1991.tb00425.x

Torgesen, J.K. & Hudson, R. (2006). Oral reading fluency: critical issues for struggling readers. In S.J. Samuels and A. Farstrup (Eds.). *Oral reading fluency: The*

forgotten dimension of reading success. Newark, DE: International Reading Association

Torgesen, J. K., Rashotte, C. A., & Alexander, A. (2001). Principles of fluency instruction in reading: Relationships with established empirical outcomes. In M. Wolf (Ed.), *Dyslexia, Fluency, and the Brain*. Parkton, MD: York Press.

Torgesen, J. K., Wagner, R. K., & Rashotte, C. A. (1994). Longitudinal studies of phonological processing and reading. *Journal of Learning Disabilities, 27*, 276-286. doi:10.1177/002221949402700503

Treptow, M. A., Burns, M. K., & McComas, J. J. (2007). Reading at the frustration, instructional, and independent levels: Effects on student time on task and comprehension. *School Psychology Review, 36,* 159-166.

Turco, T. L., & Elliot, S. N. (1986). Assessment of students' acceptability ratings of teacher-initiated interventions for classroom misbehavior. *Journal of School Psychology, 24,* 227–283. doi:10.1016/0022-4405(86)90060-9

U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. (2002). National Assessment of Educational Progress (NAEP), 2002 Oral Reading Study.

VanDerHeyden, A. M. & Witt, J. C. (2005). Quantifying the context of assessment: Capturing the effect of base rates on teacher referral and a problem-solving model of identification. *School Psychology Review, 34,* 161-183

Walker, J. M. T., Wilkins, A. S., Dallaire, J. R., Sandler, H. M., & Hoover-Dempsey, K. V. (2005). Parental involvement: Model revision through scale development. *Elementary School Journal, 106,* 85-104. doi:10.1086/499193

Wilder, D.A., Atwell, J., & Wine, B. (2006). The effects of varying levels of treatment integrity on child compliance during treatment with a three-step prompting procedure. *Journal of Applied Behavior Analysis, 39,* 369-373.

Witt, J. C., & Elliott, S. N. (1985). Acceptability of classroom management strategies. In T. R. Kratochwill (Ed.), *Advances in school psychology* (Vol. 4, pp. 251–288). Hillsdale, NJ: Erlbaum.

Table 1

Expected and Ambitious Weekly Growth Rates for Oral Reading Fluency and the AIMSweb 50th percentile CWPM for Oral Reading Fluency

Grade	Expected Growth Rate	Ambitious Growth Rate	AIMSweb 50th Percentile CWPM
2	1.5	2	102
3	1.0	1.5	121
4	0.85	1.1	133
5	0.50	0.80	153
6	0.30	0.65	166

Note: The growth rates are based on findings from Fuchs et al. (1993)

Table 2

Teacher Demographics

Student	Teacher	Gender	Ethnicity	Highest Degree Earned	Years of Teaching Experience	Current Grade Taught	Years Current Grade
Beth	Mrs. Calvin	F	White	BS	27	4th	21
Carter; Michael	Mrs. Quinn	F	White	BA	23	2nd	5
Laura	Mrs. Neal	F	White	BA	5	2nd	3
David	Mrs. Allen	F	White	BS+	17	4th	2
Nichole	Mrs. Martin	F	White	BA+9	22	2nd	17
Alex	Mrs. Garner	F	White	BA+24	16	3rd	1

Table 3

Participating Mother's Demographics

Student	Ethnicity	Hours worked per week	Level of education	Number of children in home
Carter	Hispanic	41+	Master's	2
Beth	White	21-40	Some college/2-year college	2
Michael	White	Stay-at-home mother	Bachelor's	3
Laura	White/Hispanic	21-40	Some graduate work	2
David	White	Stay-at-home mother	Bachelor's	2
Nichole	White	21-40	Master's	2
Alex	White	6-20	Master's	2

Table 4

Evidence-based Strategies for Building Oral Reading Fluency

Strategy	Description
Feedback	• The first time the child reads, the parent times the child reading for 1 min, then counts and graphs the number of words read correctly and incorrectly with the child. The last time the child reads, the parent again times the child reading for 1 min, then counts and graphs the number of words read correctly and incorrectly with the child. The parent and child look to see if more words were read correctly and fewer words were read incorrectly from the pre-check to the post-check. A reward may also be provided contingent on a performance goal.
Listening Passage Preview/Show	• The parent reads the story aloud at a comfortable pace (about 130 words per min) with proper expression while the child follows along.
Repeated Readings	• The child reads the story aloud 3 times while the parent follows along.
Correcting Mistakes	• Word Supply- During reading, the parent reads the word for the child if he/she struggles with the word. • Word Practice- After reading, the parent helps the child practice hard words (e.g., words read incorrectly, missed, or struggled with for more than 3 s) by reading the word to the child, having the child read the word three times. • Word and Phrase Practice- After reading, the parent helps the child practice hard words by reading the word to the child, having the child read the word and then read part of the sentence that the word is in three times. • Syllable Segmentation- After reading, the parent helps the child practice hard words by reading each syllable of the word and having the student read the syllables as they are uncovered by an index card. Then, the parent shows how to blend the syllables together to read the word and the child does the same. Lastly, the child independently blends the syllables to read the word.
Flashcard Word Practice	• Words the child read incorrectly on both the first and second reading of the passage are written on flashcards. The parent presents the first word by saying the word and having the child read the word. The word is then presented again and the child is given a chance to read the word before the parent says the word in 4 s. If the child reads the word incorrectly, the parent shows the child how to read the word and asks the child to read it (until it is read correctly). If the child reads the word correctly before the parent reads the word, then another difficult word is added to the flashcard pile. Each time a new word is added, the parent shows the child how to read the word correctly before asking the child to read the word. The parent adds more words when the student correctly reads all of the words in the flashcard pile before the parent reads the word in 4 s.

Discussion	The parent and child talk about the passage together and use complete sentences to answer questions such as: • What was the passage about? • What did you learn about_____? • Have you ever seen or done something that happened in the story?

Table 5
Optional Tutoring Components and Method of Correcting Mistakes Selected by Participants

				Method of Correcting Mistakes			
Student	Listening Passage Preview	Discussion	Flashcards	Word Supply	Word Practice	Phrase Practice	Syllable Segmentation
Carter	X	X		X			X
Beth		X		X	X	X	
Michael	X	X		X	X		
Laura	X	X	X	X	X		
David	X	X		X	X	X	
Nichole	X	X		X	X		X
Alex		X		X	X		

Note: Beth, David, and Nichole's mothers selected to use word supply and one of the other selected strategies when correcting mistakes

Table 6
Adherence and Quality of Parent Training Provided by Teachers

Student	Teacher	Percent Adherence	Percent Quality
Beth	Mrs. Calvin	100	71.4
Carter; Michael	Mrs. Quinn	100	71.4
Laura	Mrs. Neal	85.7	78.6
David	Mrs. Allen	NA	NA
Nichole	Mrs. Martin	100	100
Alex	Mrs. Garner	100	92.9

Note: Data for Mrs. Allen is not available due to a recording error.

Table 7
Treatment integrity of parent tutoring implementation

	Mean Percent Adherence		Mean Percent Quality		Mean Dosage in Days		Mean Percent Engagement	
Student	Baseline	Intervention	Baseline	Intervention	Baseline	Intervention	Baseline	Intervention
Carter	17	38	17	27	3.5	2.2	96	93
Beth	20	100	20	74	1.3	0.7	100	94
Michael	13	68	12	52	3.4	3.6	83	93
Laura	14	76	14	63	0.6	1.2	100	92
Mean School 1	16	71	16	54	2.2	1.9	95	93
David	0	88	0	75	1.0	2.9	100	86
Nichole	17	95	17	95	1.3	2.5	95	97
Alex	27	98	13	74	2.3	2.2	96	93
Mean School 2	15	94	10	81	1.5	2.5	97	92
Total Mean	15	80	12	66	1.9	2.2	96	93

Table 8

Summary of students' ORF results based on visual analysis, Fisher's conservative dual criterion (CDC), summary statistics, ordinary least squares regression (growth per week), and AIMSweb percentile ranking.

Student	Grade	Weeks of Intervention	Effect Visual analysis	Effect CDC	Mean CWPM Baseline	Mean CWPM Intervention	OLS (expected growth)	AIMSweb percentile Baseline	AIMSweb percentile Intervention
Carter	2	10.5	Y	Y	83.5	94.0	-0.77 (1.5)	29	39
Beth	4	9.5	N	N	111.8	121.0	1.87 (0.85)	39	42
Michael	2	9	Y	Y	98.5	121.8	1.24 (1.5)	47	72
Laura	2	13	N	N	69.7	83.3	0.99 (1.5)	19	30
David	4	6.5	Y	Y	125.5	157.2	0.83 (0.85)	45	77
Nichole	3	5.5	N	N	97	104.5	4.53 (1.0)	26	39
Alex	2	11.5	Y	Y	90	109.1	1.81 (1.5)	38	62

Table 9

Teachers' Mean Item Ratings on the TIP Scales at Pre and Post Administration

Student	Teacher	Attitudes toward parent involvement		Self-efficacy for teaching		Perceptions of parent efficacy for helping children succeed in school		Beliefs about the importance of specific involvement practices		Reports of parents' involvement		Invitations to parental involvement	
		pre	post	pre	post	pre	post	pre	post	pre	post	pre	post
Beth	Mrs. Calvin	4.75	4.63	3.83	4.42	4.29	4.29	4.00	4.31	3.57	3.79	2.06	2.50
Carter; Michael	Mrs. Quinn	4.50	4.13	4.92	4.92	5.00	4.86	5.00	5.31	3.43	4.21	3.63	3.88
Laura	Mrs. Neal	5.38	5.13	4.75	4.67	4.86	4.86	5.19	5.13	4.07	4.21	3.81	3.19
David	Mrs. Allen	5.13	4.63	4.67	4.58	4.43	4.43	4.63	5.13	3.93	3.79	3.56	3.94
Nichole	Mrs. Martin	5.63	5.88	4.75	5.00	4.86	5.14	5.19	5.00	4.07	4.36	3.44	3.56
Alex	Mrs. Garner	4.75	5.14	5.17	5.08	4.83	5.00	5.00	5.13	2.93	2.93	4.56	4.25
	Mean	5.02	4.92	4.68	4.78	4.71	4.76	4.83	5.00	3.67	3.88	3.51	3.55

Table 10

Parents' Mean Item Ratings on the Parent Involvement Questionnaire Scales at Pre and Post Administration

Parent of Student	Valence Towards School		Parent Role Construction for Involvement in the Child's Education		Parent Self-Efficacy for Helping the Child Succeed in School		Parent Report of Encouragement		Parent Report of Modeling		Parent Report of Reinforcement		Parent Report of Instruction		Parent Report of School-based Involvement Activities		Parent Perceptions of Personal Time and Energy		Parent Perceptions of General Invitations for Involvement from the School		Parent Perceptions of Specific Invitations for Involvement from the Teacher		Parent Perceptions of Specific Invitations for Involvement from the Child	
	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post
Beth	5.00		5.30		4.60		5.31		5.10		5.46		5.47		4.50		5.27		5.67		3.60		3.60	
Carter	5.17	5.83	5.70	4.95	4.00	4.60	5.15	4.92	5.40	5.30	5.23	5.92	4.60	5.20	4.40	5.00	3.82	3.82	4.00	4.83	2.60	4.60	2.80	4.40
Michael	4.00	5.00	4.10	4.80	3.40	3.20	4.92	5.38	4.70	5.40	5.00	5.54	4.60	5.07	3.70	4.00	4.18	4.64	3.50	5.00	2.40	2.60	2.60	1.80
Laura	6.00	5.67	5.60	5.30	3.40	4.40	4.69	5.92	5.50	5.60	6.00	6.00	5.00	5.53	4.10	4.20	4.91	5.73	4.33	5.50	2.00	2.20	3.40	4.00
David	6.00	6.00	4.90	4.70	2.80	2.60	5.62	3.38	4.70	4.20	5.92	5.00	3.53	3.60	5.80	3.70	4.09	3.27	5.00	4.00	3.20	2.80	2.40	2.60
Nichole	4.33	5.17	5.80	5.70	5.20	5.60	5.69	5.54	5.50	5.60	6.00	5.54	5.73	5.60	3.70	3.60	5.36	4.82	4.17	4.50	3.80	2.90	3.80	3.80
Alex	6.00	5.50	6.00	6.00	5.20	5.80	5.62	5.08	5.80	4.80	4.54	4.92	4.93	4.27	3.70	4.60	5.18	5.00	6.00	5.17	3.60	3.40	3.60	3.40
Mean	5.21	5.53	5.34	5.24	4.09	4.37	5.29	5.04	5.24	5.15	5.45	5.49	4.84	4.88	4.27	4.18	4.69	4.55	4.67	4.83	3.03	3.08	3.17	3.33

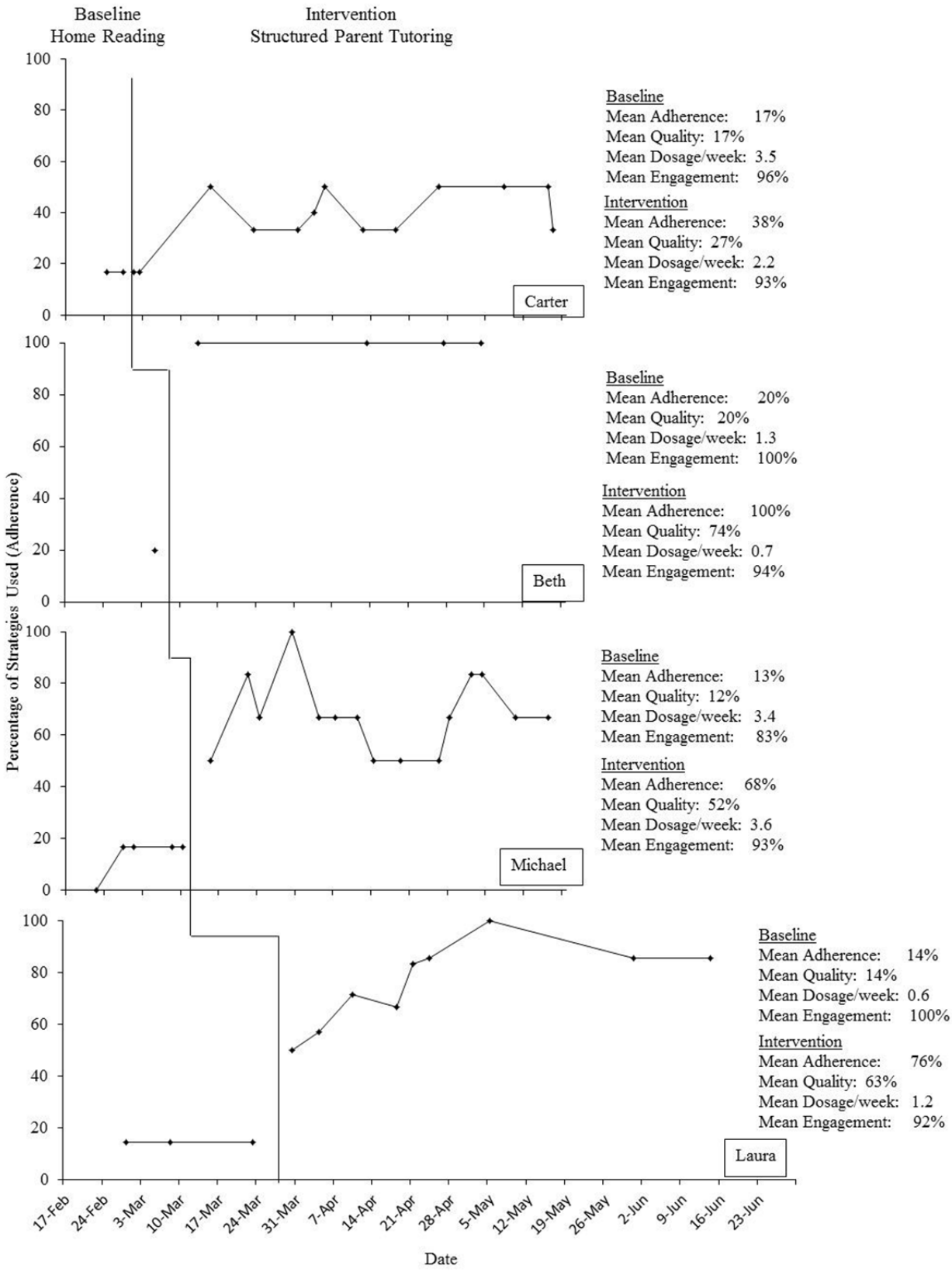

Baseline
Home Reading
Intervention
Structured Parent Tutoring
Percentage of Strategies Used (Adherence)
Date
Carter
Baseline
Mean Adherence: 17%
Mean Quality: 17%
Mean Dosage/week: 3.5
Mean Engagement: 96%
Intervention
Mean Adherence: 38%
Mean Quality: 27%
Mean Dosage/week: 2.2
Mean Engagement: 93%
Beth
Baseline
Mean Adherence: 20%
Mean Quality: 20%
Mean Dosage/week: 1.3
Mean Engagement: 100%
Intervention
Mean Adherence: 100%
Mean Quality: 74%
Mean Dosage/week: 0.7
Mean Engagement: 94%
Michael
Baseline
Mean Adherence: 13%
Mean Quality: 12%
Mean Dosage/week: 3.4
Mean Engagement: 83%
Intervention
Mean Adherence: 68%
Mean Quality: 52%
Mean Dosage/week: 3.6
Mean Engagement: 93%
Laura
Baseline
Mean Adherence: 14%
Mean Quality: 14%
Mean Dosage/week: 0.6
Mean Engagement: 100%
Intervention
Mean Adherence: 76%
Mean Quality: 63%
Mean Dosage/week: 1.2
Mean Engagement: 92%

Figure 1. Treatment integrity of parent tutoring across baseline and intervention for students at School A.

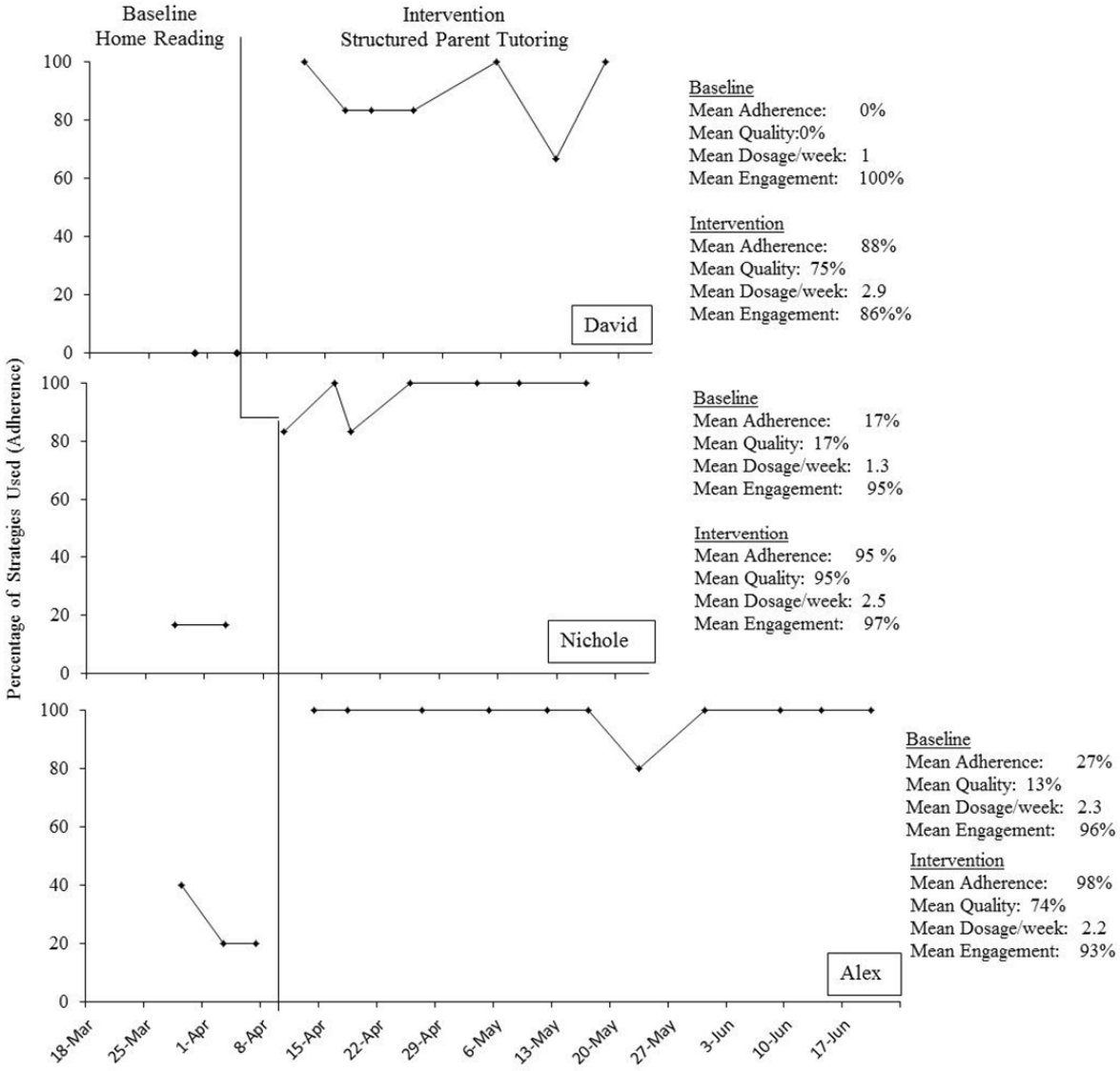


Figure 2. Treatment integrity of parent tutoring across baseline and intervention for students at School B.

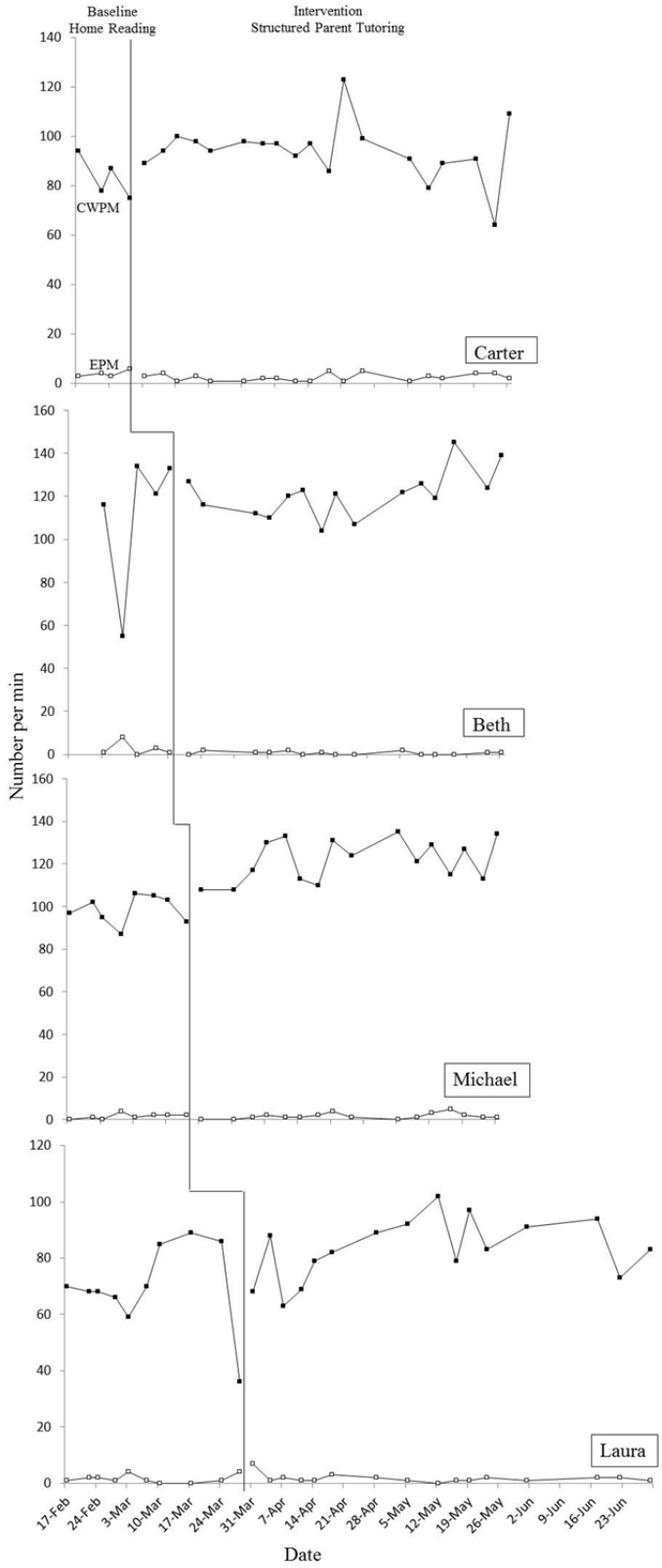


Figure 3. School A students' oral reading fluency as measured by the number of correct words per min (CWPM closed squares) and errors per min (EPM open squares).

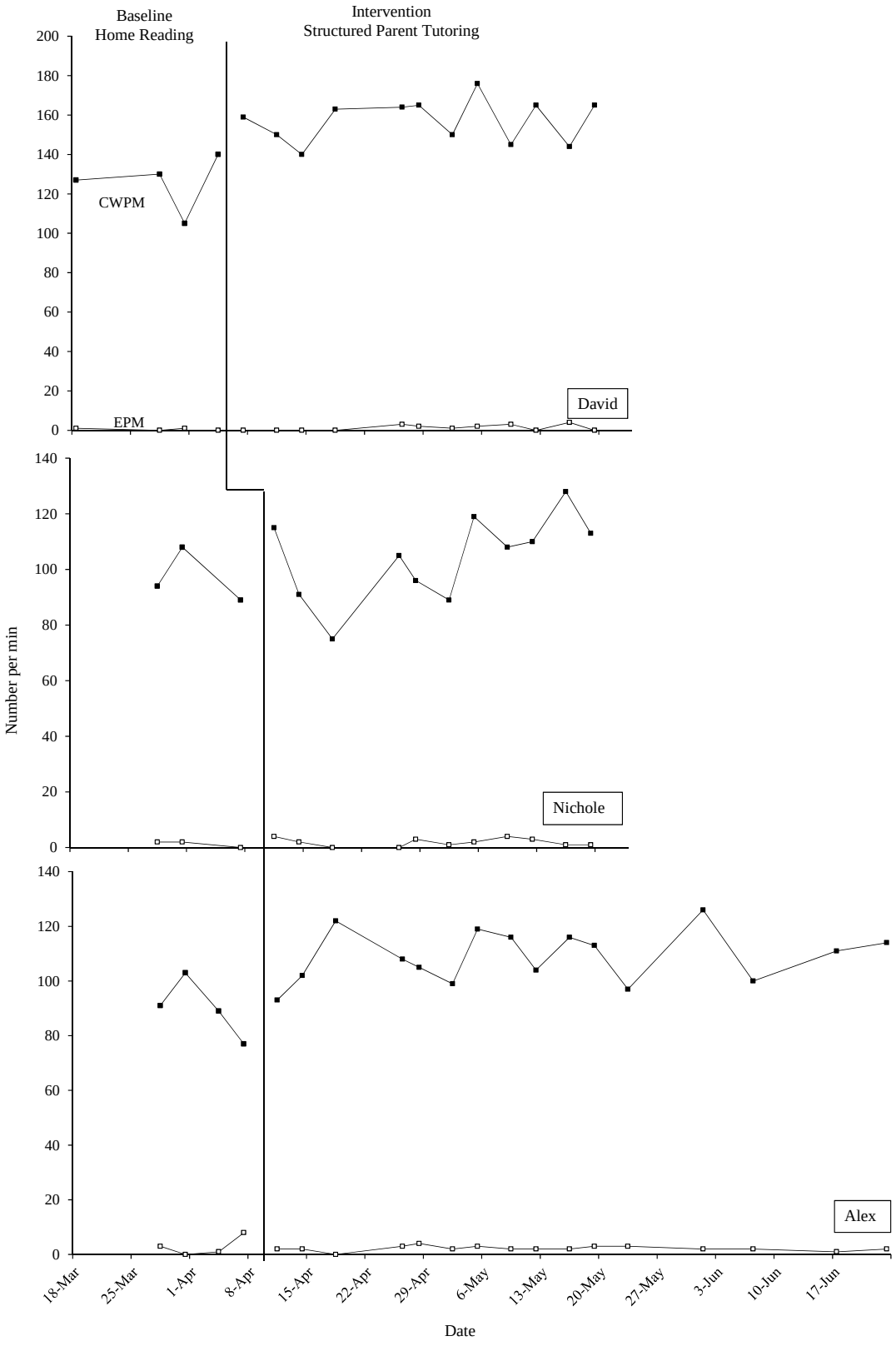


Figure 4. School B students' oral reading fluency as measured by the number of correct words per min (CWPM closed squares) and errors per min (EPM open squares).

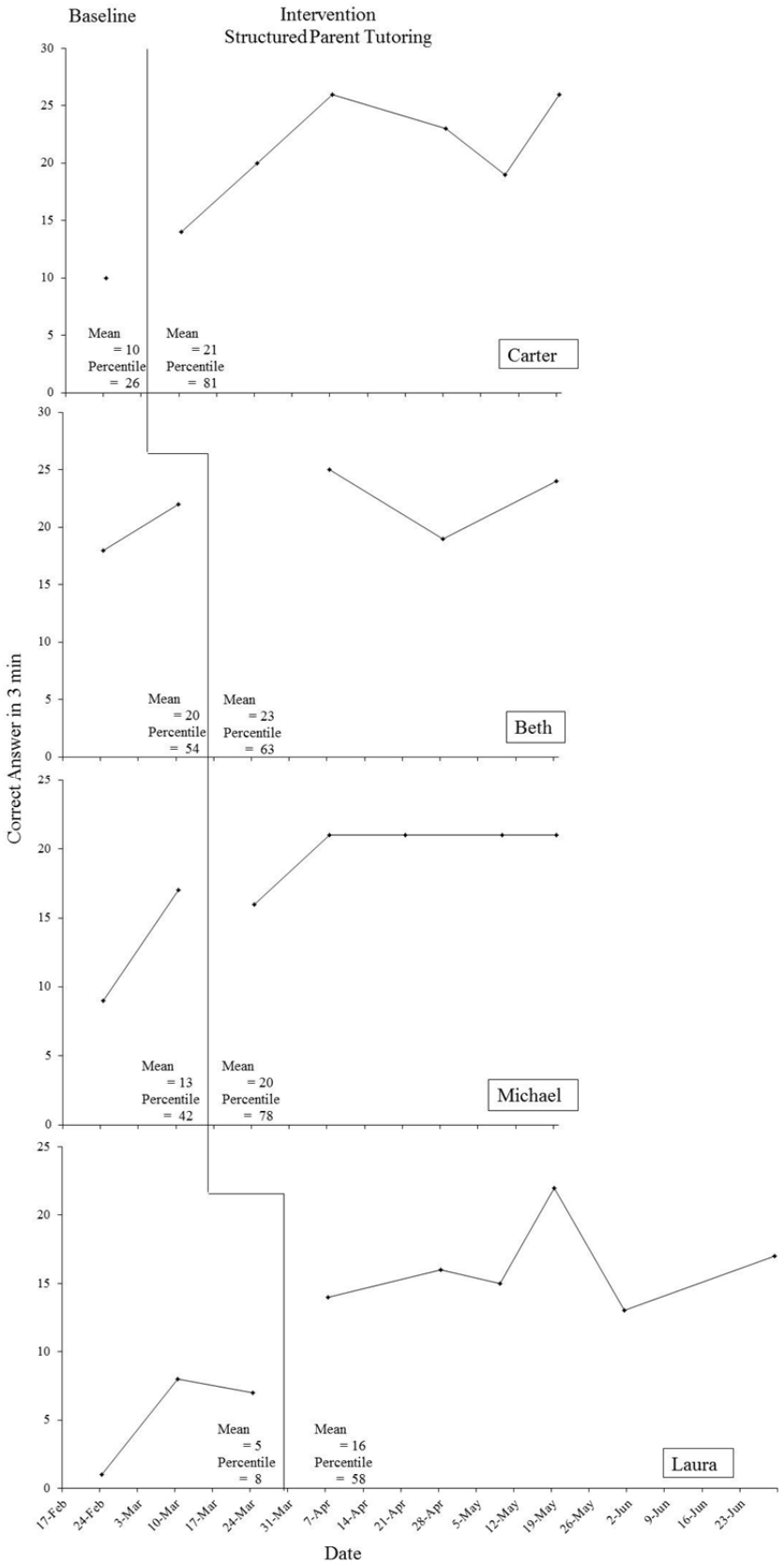


Figure 5. School A students' reading comprehension as measured by Maze probes.

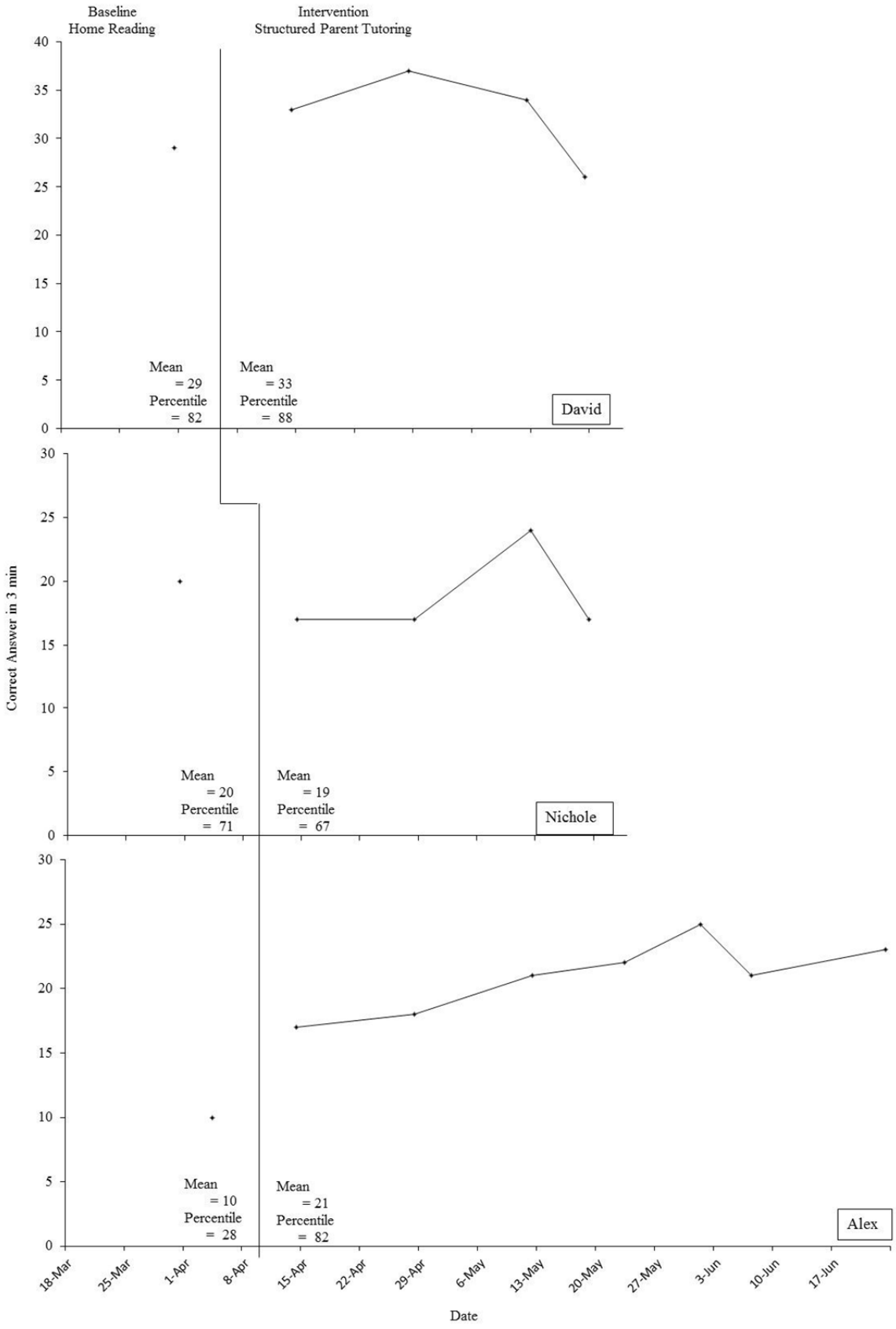


Figure 6. School B students' reading comprehension as measured by Maze probes.

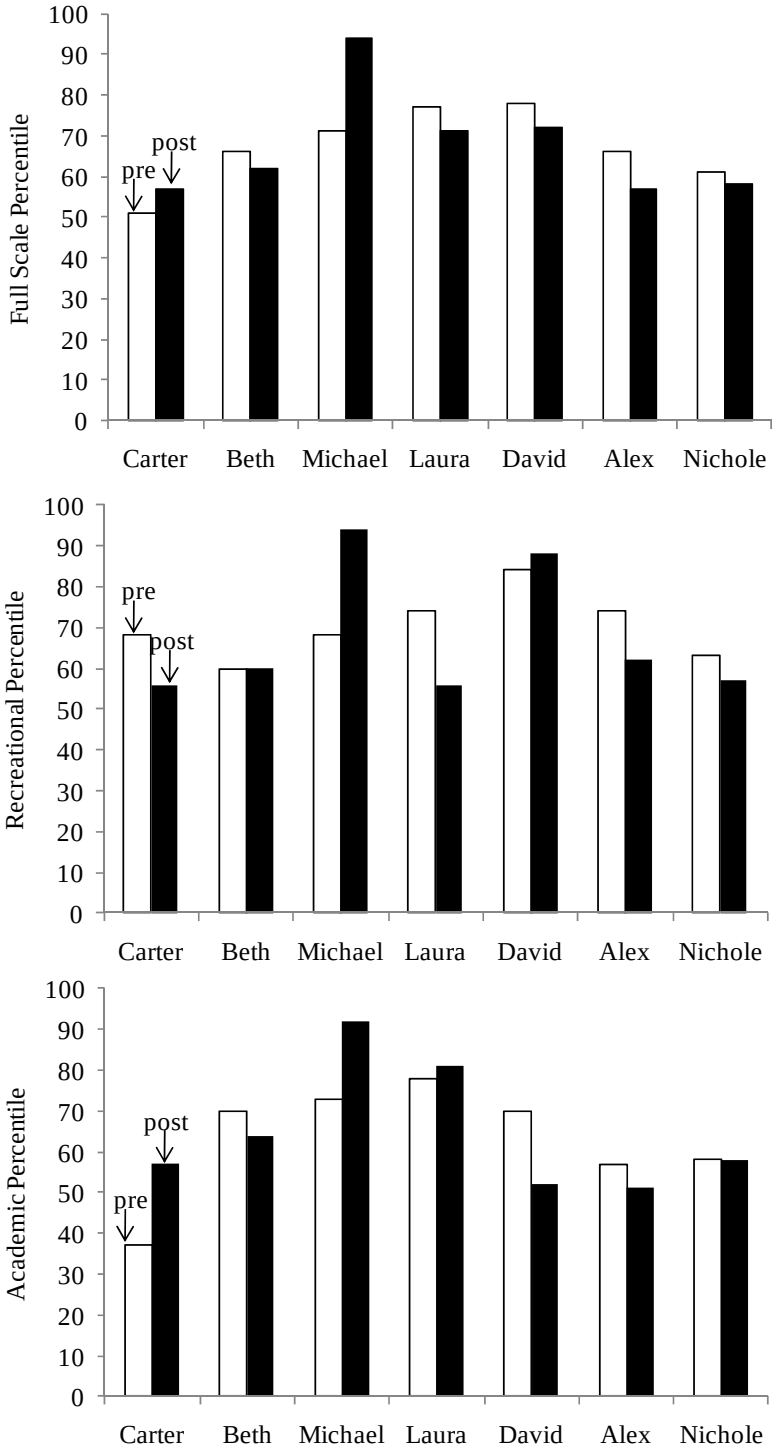


Figure 7. Full scale (panel 1), recreational (panel 2), and academic (panel 3) percentile ranks on the Elementary Reading Attitude Survey prior to and following parent tutoring

Appendix A

Consent and Assent Forms



UNIVERSITY OF Nebraska Lincoln

TEACHERS COLLE
Educational Psychol

INFORMED CONSENT FORM
FOR THE TEACHER
Applications of Evidence-based Reading Strategies in Applied Settings
Sara Kupzyk, MA
Edward Daly, PhD

You and your student are invited to participate in research being conducted by faculty and students of the School Psychology program at the University of Nebraska-Lincoln. The goal of the project is to identify and implement effective strategies for improving children's reading skills. We believe that you and your student may benefit from the information provided by these assessments and any instructional interventions that may result. We also believe that there is little risk involved, as we will be using methods that have been shown to be effective in prior research. The greatest apparent source of risk is any frustration you or your student might experience while being assessed or observed. Your student is one of a number of children being invited to participate. If your student participates in the study, a school psychologist-in-training and perhaps undergraduate students will work with you and your student.

The study will be conducted in three parts and will be carried out as a part of the school psychology student's research requirements. The first part should take approximately 3 weeks. During this time, your student will read and answer comprehension questions (1 to 5 minutes) during several sessions. Additionally, you may be asked participate in role-play scenarios with a fellow teacher or the researcher focused on working with students and parents on reading skills. During the second part of the study, we will try out different instructional strategies and measure your student's performance following different teaching procedures. We also will consult with you regarding problems the student may be experiencing, look at your student's educational records to see if there is any relevant information that might help in problem solving, and observe the you and the student in your classroom. In some cases, it may not be necessary to do all these things.

It should take approximately 2 to 3 weeks for us to get a clear picture of which strategy or strategies work best for your student. We will work with your student to try to identify at least one strategy that helps him or her to perform better. The assessment sessions will be brief, lasting from 15 to approximately 30 minutes. The sessions will be done between two and four times a week. We will consult with you about the best times to work with or observe you and your student and whether it is appropriate to take the student out of the classroom or work with him or her in the classroom. Although this means that he or she may miss some instructional time, we believe that the additional information will allow us to understand more precisely how to help your student. Also, when we work with your student, we will be doing reading activities just like those you are probably already doing in your class (e.g., reading and talking about stories). These activities will give your student more practice and feedback on his or her performance. We will describe the most effective strategies to you and the student's parents and assist in the development and implementation of an intervention plan to improve your student's reading skills if necessary. To best support the student's academic skills, you will be asked to involve and work with your student's parents to implement any identified strategies as part of a home-school collaboration. We will continuously assess the effects of this intervention plan. In order to make sure that the researchers, you and/or your student's parent are implementing the plan correctly, any project trainings, assessments, and instructional sessions in which the plan is implemented will be audio taped.

You may assume responsibility for all or some part of an intervention plan. If that is the case, a



consultant working under the supervision of Mrs. Kupzyk and Dr. Daly will be able to support you through this process. There are a variety of things that can be done to help you implement the intervention plan, including use of checklists, goal setting, training through the use of instructional videos, modeling, practice, feedback, and discussion, feedback for in vivo implementation, data review, choice of intervention strategies, and/or incentives deemed appropriate and feasible by building administrators. The researcher will seek your agreement on methods that seem most appropriate to help support you throughout this process before applying any of these strategies. We may also ask you to fill out brief rating forms to gauge your perceptions about the process and how effective it is at improving child behavior. You have the right to refuse to fill out any of these forms even if you do still agree to participate in the study.

Your permission is required for us to be able to gather information about your student who is participating in the study or from you. The voluntary nature of participation and the procedures will be explained to the student, and he or she will be given the opportunity to choose whether or not he or she will participate. The parent permission form explains that the information may be useful to school personnel to plan more effective instruction for your student. Therefore, we are willing to share results with you if they can help you to instruct your student better. Audiotapes and data sheets on which your student's performance is recorded will be kept in Dr. Daly's locked cabinet for three years and then destroyed. Also, if the results are published in a research journal or presented at a conference, pseudonyms will be used so that no one can tell that the data are your student's data.

There may be alternative services for the kinds of educational practice and instruction you and your student would receive through his or her participation in this study. If you suspect that your student may have a disability, we suggest that you contact the school psychologist who will take appropriate action. Also, psychoeduational assessment and tutoring are offered through various agencies throughout the region. However, these services are usually for a fee and it would be the parents' responsibility to pay for any such services.

You may ask any questions concerning this research and have those questions answered before agreeing to participate in or during the study. Or you may call the investigator at any time, office phone, (402) 472-5923, or after hours (402) 429-0896. Please contact the investigator:

if you want to voice concerns or complaints about the research, and/or
in the event of a research related injury.

Please contact the University of Nebraska-Lincoln Institutional Review Board at (402) 472-6965 for the following reasons:

you wish to talk to someone other than the research staff to obtain answers to questions about your rights as a research participant;
to voice concerns or complaints about the research;
to provide input concerning the research process; and/or
in the event the study staff could not be reached.

You are free to decide not to participate in this study or to withdraw at any time without adversely affecting your relationship with the investigators, the University of Nebraska, or the school. You are voluntarily making a decision whether or not to let your student participate in this research study. Your signature certifies that you have decided to participate having read and understood the information presented. You will be given a copy of this consent form to keep.

Signature of Teacher _____ Date _____

Name and phone number of investigator(s)

Sara Kupzyk Office: (402) 472-2207
Edward Daly Office: (402) 472-5923



The following instructional strategies are the ones that may be used with your student, and are typical for what normally occurs in the classroom setting:

- ❑ INCENTIVES: Some students have the skills to perform academically but are not motivated to do so. Sometimes, incentives can "boost" the effects of instruction to make it more effective and efficient. Therefore, in some cases we may offer incentives for improving academic performance. Incentives will include things like praise for doing a good job, extra time with the examiner, and small tangibles (e.g., pencils, markers, erasers, stickers). It may be necessary to rearrange contingencies of reinforcement. For example, a student who doesn't complete math problems because the material is hard and he or she receives a lot of attention for acting up may require an intervention plan that has the teacher pay attention to appropriate behavior and ignore inappropriate behavior. In this situation, teacher attention for appropriate behavior is the incentive. In some cases the incentive strategy may be based on a point system which allows the participant to gain access to special privileges, praise, and/or tangible rewards for meeting goals for academic performance or behavior. Points may be adjusted up or down by school or research personnel according to the child's current behavior and goal attainment.
- ❑ FEEDBACK TO STUDENTS: Some students do better when they receive feedback on their performance. Therefore, in some cases we may tell students how quickly and/or accurately they have completed a task, and show them their performance by plotting the results on a graph with them.
- ❑ PRACTICE: Some students merely need to practice in order to improve their academic skills. Therefore, in some cases we will have students practice with appropriate instructional materials.
- ❑ MODELING: Some students have such poor skills that they need modeling of accurate and fluent reading, writing, math, and/or spelling in order to improve their skills. Therefore, in some cases we will model correct responses.
- ❑ ERROR CORRECTION STRATEGIES: Some students display high error rates because they are not accurate in the use of a particular skill. Therefore, in some cases, we will model accurate responding when they make mistakes and have them practice the correct response.
- ❑ CHOICE: Some students' motivation is increased when they get to choose the activity they do. Therefore, in some cases we may have students choose from among several appropriate instructional activities.
- ❑ CHANGING STUDENTS' INSTRUCTIONAL LEVELS: Some students fail to benefit from instruction because the materials are too hard for them. Therefore, in some cases we will have students work in easier instructional materials in order to identify a better "match" between a student's skill level and the difficulty level of the materials.
- ❑ REARRANGING FEATURES OF THE SETTING: It may be necessary in some cases to work with teachers to change routines, instruction, and/or rules to promote greater academic engagement. For example, a student who is having difficulty doing independent seat work might need more guided practice before independent seat work is assigned to him or her.

IRB# 20090910075EP
Date Approved: 07/27/2010
Valid Until: 09/20/2011

University of Nebraska Lincoln
TEACHERS COLLEGE
Educational Psychology

INFORMED CONSENT FORM
Applications of Evidence-based Reading Strategies in Applied Settings
Sara Kupzyk, MA
Edward Daly, PhD

You and your child are invited to participate in research being conducted by faculty and students of the School Psychology program at the University of Nebraska-Lincoln. Your child's teacher suggested that your child might be appropriate for this study. The goal of the project is to identify and implement effective strategies for improving children's reading skills. We believe that you and your child may benefit from the information provided by these assessments and any instructional interventions that may result. We also believe that there is little risk involved, as we will be using methods that have been shown to be effective in prior research. The greatest apparent source of risk is any frustration you or your child might experience while being assessed or observed. Your child is one of a number of children being invited to participate. If your child participates in the study, a school psychologist-in-training and perhaps undergraduate students will work with you, your child, and his or her teacher.

The study will be conducted in three parts and will be carried out as a part of the school psychology student's research requirements. The first part should take approximately 3 weeks. During this time, your child will read and answer comprehension questions for brief periods of time (1 to 5 minutes) during several sessions. Additionally, you may be asked to tape yourself working with your child on reading as you typically do at home. During the second part of the study, we will try out different instructional strategies and measure your child's performance following different teaching procedures. We also will consult with you and the teacher regarding the problem, look at your child's educational records to see if there is any relevant information that might help in problem solving, and observe your child in his or her classroom. In some cases, it may not be necessary to do all these things.

It should take approximately 2 to 3 weeks for us to get a clear picture of which strategy or strategies work best. We will work with your child to try to identify at least one strategy that helps him or her to perform better. The assessment sessions will be brief, lasting from 15 to approximately 30 minutes. The sessions will be done between two and four times a week. We will consult with the teacher about the best times to work with or observe your child. Your child will be taken out of the classroom from time to time to work directly with him or her. Although this means that he or she may miss some instructional time, we believe that the additional information will allow us to understand more precisely how to help your child. Also, when we work with your child, we will be doing activities just like those done in his or her class (e.g., reading and talking about stories). These activities will give your child more practice and feedback on his or her performance. Finally, the most effective strategies will be described to you and your child's teacher, and we will assist in the development and implementation of the intervention plan to improve your child's reading skills if necessary. To best support your child's academic skills, you will be asked to work with your child's teacher to implement any identified strategies as part of a home-school collaboration. We will continuously assess the effects of this intervention plan. In order to make sure that the researchers, you, your child's teacher, are doing the plan correctly, any project trainings, assessments, and instructional sessions in which the plan is implemented will be audio taped.

You may assume responsibility for all or some part of an intervention plan. If that is the case, a consultant working under the supervision of Mrs. Kupzyk and Dr. Daly will be able to support you through this process. There are a variety of things that can be done to help you implement the intervention plan, including use of checklists, goal setting, training through the use of instructional videos, modeling, practice, feedback, and discussion, feedback for in vivo implementation, data review, choice of intervention strategies, and/or incentives deemed appropriate and feasible by building



administrators. The researcher will seek your agreement on methods that seem most appropriate to help support you throughout this process before applying any of these strategies. We may also ask you to fill out brief rating forms to gauge your perceptions about the process and how effective it is at improving child behavior. You have the right to refuse to fill out any of these forms even if you do still agree to participate in the study.

Your permission is required for your child to participate in the study. Also, your child's assent for participation will be sought. The voluntary nature of participation and the procedures will be explained to your child, and he or she will be given the opportunity to choose whether or not he or she will participate. The information may be used by school personnel to plan more effective instruction for your child. Therefore, results may be shared with your child's teacher or other school personnel including the school psychologist or building administrator if they can be beneficial to your child's educational progress. The information will not be shared with any educational personnel or other individuals who are not directly involved in your child's educational programming without your explicit, written permission. Audiotapes and data sheets on which your child's performance is recorded will be kept in Dr. Daly's locked cabinet for three years and then destroyed. Also, if the results are published in a research journal or presented at a conference, pseudonyms will be used so that no one can tell that the data are your child's data.

There may be alternative services for the kinds of educational practice and instruction your child would receive through his or her participation in this study. If you suspect that your child may have a disability, we suggest that you contact the teacher, the school psychologist, and/or an administrator. Also, psychoeduational assessment and tutoring are offered through various agencies throughout the region, usually for a fee. School officials may be able to direct you to agencies and services that might be convenient to you. You may also contact Dr. Daly if you want more recommendations.

You may ask any questions concerning this research and have those questions answered before agreeing to participate in or during the study. Or you may call the investigator at any time, office phone, (402) 472-5923, or after hours (402) 429-0896. Please contact the investigator:

if you want to voice concerns or complaints about the research, and/or
in the event of a research related injury.

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you wish to talk to someone other than the research staff to obtain answers to questions about your rights as a research participant;
to voice concerns or complaints about the research;
to provide input concerning the research process; and/or
in the event the study staff could not be reached.

You are free to decide not to participate in this study or to withdraw at any time without adversely affecting your relationship with the investigators, the University of Nebraska, or the school. You are voluntarily making a decision whether or not to let your child participate in this research study. Your signature certifies that you have decided to participate having read and understood the information presented. You will be given a copy of this consent form to keep.

Research Subject's Name: _____

Signature of Parent/Guardian _____ Date _____

Name and phone number of investigator(s)

Sara Kupzyk	Office: (402) 472-2207
Edward Daly	Office: (402) 472-5923



The following instructional strategies are the ones that may be used with your child, and are typical for what normally occurs in the classroom setting:

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- ❑ FEEDBACK TO STUDENTS: Some students do better when they receive feedback on their performance. Therefore, in some cases we may tell students how quickly and/or accurately they have completed a task, and show them their performance by plotting the results on a graph with them.
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IRB#: 20090910075EP
Date Approved: 07/27/2010
Valid Until: 09/20/2011

University of Nebraska Lincoln

TEACHERS COLLEGE
Educational Psychology

CHILD ASSENT FORM

Applications of Evidence-based Reading Strategies in Applied Settings

Sara Kupzyk, MA
Edward Daly, PhD
University of Nebraska-Lincoln

We are inviting you to take part in this study of ways to help students like you do better in school. We are asking you because your teacher thought that you might benefit from some more help with your reading.

In this study we will ask you to do reading and answering questions, like in your classroom. We will try different things like rewards, showing you, having you practice, telling you how quickly you finished an assignment, and sometimes having you do easier and harder work to figure out the best way for you to learn. We will work together for about 20 to 30 minutes several times a week. After we figure out the best way for you to learn, we will share the information with your teacher and parents so they can help you do better in school. A tape recording will be made each time we work together and sometimes when you work with your teacher or parents on your reading so someone else can check to make sure that the person working with you does everything correctly.

If you get upset or frustrated in any way, tell me or the person working with you and we will help you. If you want to stop working together and return to your classroom activities, you can do so at any time.

Your parents will also be asked to give their permission for you to take part in this study. Please talk this over with your parents before you decide whether or not to participate.

You do not have to be in this study if you do not want to. If you decide to participate in the study, you can stop at any time.

If you have any questions at any time, please ask one of the researchers.

IF YOU SIGN THIS FORM IT MEANS THAT YOU HAVE DECIDED TO PARTICIPATE AND HAVE READ EVERYTHING THAT IS ON THE FORM. YOU AND YOUR PARENTS WILL BE GIVEN A COPY OF THIS FORM TO KEEP.

_____ _____

Signature of Subject Date

_____ _____

Signature of Investigator Date

INVESTIGATORS
Sara Kupzyk Office: (402) 472-2207
Edward Daly Office: (402) 472-5923

Appendix B

Teacher and Parent Handbooks



Parents as Tutors: Partnering to Improve Oral Reading Fluency

Teacher Handbook



Dear Teacher,

The purpose of this handbook is to provide teachers with information and guidelines for engaging parents as tutors for improving students' reading fluency. The accompanying video provides descriptions of several evidence-based tutoring strategies and examples of what each looks like in practice. This program also encourages parents and teachers to work together to address students' reading needs by collaboratively developing a tutoring program and communicating regularly about student performance. This program will also provide an overview of how to monitor and evaluate student progress.

Prior to working with parents, teachers should:

- Attend the training workshop to review and practice skills
- Review this manual in conjunction with the "Parents as Tutors: Partnering to Improve Oral Reading Fluency" video

After becoming proficient with the skills, teachers should:

- Meet with parents and children who may benefit from tutoring at home to develop a tutoring program to meet the student and family's needs
- Monitor and evaluate student reading fluency weekly
- Communicate regularly with parents about student progress

This handbook provides information and resources that will assist you in the implementation of the program with parents and students in your classroom. We hope you enjoy working with parents to further student development of reading skills.

Sincerely,

Sara Kupzyk, MA
School Psychology Doctoral Candidate
University of Nebraska-Lincoln

*This handbook was developed as part of the Wing Institute Graduate Research Grant.

Effective Strategies for Improving Oral Reading Fluency



Importance of Reading

Reading is important to children's success in school because it is a skill that is required in all subjects. In fact, more than 85% of the curriculum across subjects such as history, math, and science, is delivered through reading of text (e.g., textbooks, worksheets, computer screens). The National Reading Panel identified five core components of reading necessary for students to become proficient readers. Some students may need additional support above and beyond that provided in the classroom in order to develop strong reading skills, especially in the area of reading fluency.

Reading is a skill just like playing an instrument or a sport. To become a good, fluent reader, students must practice reading. Even when students are good readers, it is important for them to practice on a regular basis to continue to do well. The strategies described in this manual target reading fluency and are most appropriate for students who have mastered phonemic awareness and phonics skills. In other words, the strategies target students who read accurately, but slowly. Enhancing reading fluency improves students' reading comprehension because they do not have to focus on sounding out each word. They can devote more attention to understanding what is read. The purpose of the strategies outlined in this manual is to enhance oral reading fluency—helping students to read more quickly, accurately, and with proper expression.

Big Five Components of Reading

Phonemic awareness	Skill in hearing and manipulating sounds in words
Phonics	Skill in associating letters and letter combinations with individual sounds
Fluency	Skill in reading text quickly and accurately with expression
Vocabulary	Skill in understanding and use individual words
Comprehension	Skill in understanding what is read, which is the ultimate goal of reading.

Overview of Strategies for Improving Reading Fluency

Several tutoring strategies have been found to improve children's oral reading fluency. Years of research show that children need multiple opportunities to practice correctly reading text aloud with feedback. Instruction for children who struggle with reading fluency should include repeated readings, correction of mistakes, and feedback. **Repeated readings** is the main strategy, which involves the child reading the same passage three to four times. Practicing reading in this way leads to improved speed of reading on the same passage as well as on new passages. **Correcting mistakes** is another effective strategy as it helps children learn correct pronunciation of difficult words so they read the word accurately in the future. **Feedback** is also a valuable piece of reading fluency interventions because it increases the child's motivation to practice reading and participate in tutoring.

Three additional tutoring strategies can be added when needed. First, children who make several errors benefit from having adults **show** what reading should sound like by reading the text aloud to them before reading the text themselves. Hearing a good model read the story helps children learn new words and hear what fluent reading sounds like. Second, practicing difficult words missed during reading on **flashcards** helps children master words so that they are more likely to read them correctly in the passage. Finally, it can be useful to **discuss** the passage after children have had a chance to practice reading it because comprehension is the ultimate goal of reading. Discussing the content and asking factual and inferential questions gives children an opportunity to learn about the content and gain meaning from text.

Tutoring plans for fluency <u>should include</u>	Additional strategies that <u>may be included</u> in the tutoring plan
Repeated readings	Show
Correcting mistakes	Flashcard word practice
Feedback	Discussion of text

Repeated Readings

Why it is important:
Repeated readings is a well-founded strategy that gives children many opportunities to practice reading the same passage so that they can improve their reading speed and accuracy.

What it looks like:
The child reads the passage aloud three to four times. Each time, the child tries to read more quickly and accurately while learning about the topic.

Correcting Mistakes

Why it is important:
Reading fluency is improved when children's mistakes are corrected because they read more accurately. Perfect practice is key to increasing accuracy. There are several different ways to correct reading mistakes. An error or mistake is made when the child reads a word incorrectly, misses the word, or struggles with the word for more than 3 seconds. Common ways to correct errors include word supply, word practice, phrase practice, and syllable-by-syllable practice. Tutoring plans should include at least one way to correct mistakes.

What it looks like:

- **Word Supply**- When the child misses a word or struggles to read a word, the parent reads the word for the child and asks the child to read the word aloud again before moving on to the next word.

- **Word Practice**—After reading the passage, the parent points to and reads the words the child missed and asks the child to point to and read the words three times.

- **Phrase Practice**—After reading the passage, the parent points to and reads the words the child missed and asks the child to point to and read the word along with part of the sentence three times.

- **Syllable-by-Syllable Practice**— After reading the passage, the parent reads each syllable of the words the child missed, has the child read each syllable and then blend the syllables together.

Feedback

Why it is important:
Feedback on reading is beneficial because it motivates students to improve their reading and practice during tutoring. Tutoring plans should include feedback in one of the following ways. Additional materials and ideas for increasing motivation are also included in the "Additional Materials" section.

What it looks like:

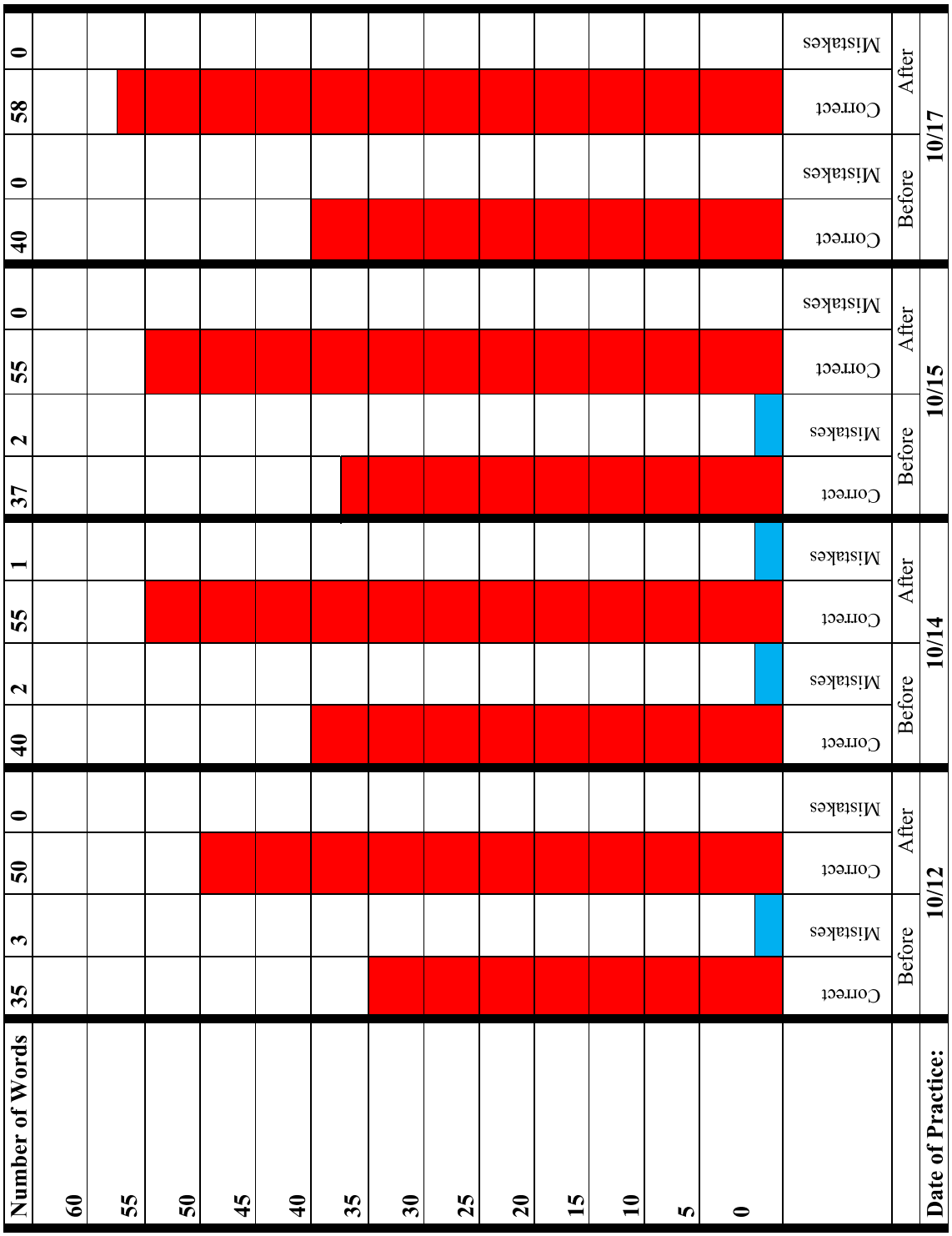
- **Pre-Check/Post-Check**— The Parent times the child reading for 1 minute on the first and last time the child reads the passage, then counts and graphs the number of words read to see if more words were read correctly at the post-check.

- **Reward**—Set a goal for the number of words to read or length of time to finish the passage. The parent provides a reward if the child meets a goal number of words read correctly (see Tools for Helping with Behavior for ideas).



Date of Practice:															
														Before	After
Number of Words														Correct	Mistakes
														Before	After
														Correct	Mistakes
														Before	After
														Correct	Mistakes
														Before	After
														Correct	Mistakes
														Before	After
														Correct	Mistakes

Beth's Reading Practice



Beth's Reading Practice

Show

Why it is important:
Reading the passage aloud to children before they read the passage shows them what fluent reading should sound like. It also gives children a chance to hear any difficult words in the passage pronounced correctly so that they are less likely to make a mistake.

What it looks like:
The parent reads the story aloud at a comfortable pace with good expression and makes sure the child follows along on their copy of the passage.



Flashcard Word Practice

Why it is important:
Practicing difficult words on flashcards provides many opportunities for the student to hear the correct pronunciation and correctly practice the word. When children master words on flashcards, they are more likely to read the words correctly in a passage.

What it looks like:
The parent or child writes the words the child missed more than once when reading on index cards. For each new word, the parent holds up the word, says the word (e.g., this word is pencil), and asks the child to read the word. If the child reads the word correctly, the parent shuffles the cards and adds a new word. The parent shows each of the cards until the child consistently gets all of the words correct on the first try.

Discussion

Why it is important:
Talking about the passage helps to improve reading comprehension. Children should be encouraged to use vocabulary from the passage and answer in complete sentences. Graphic organizers can also be used to help children organize the information (see example on next page).

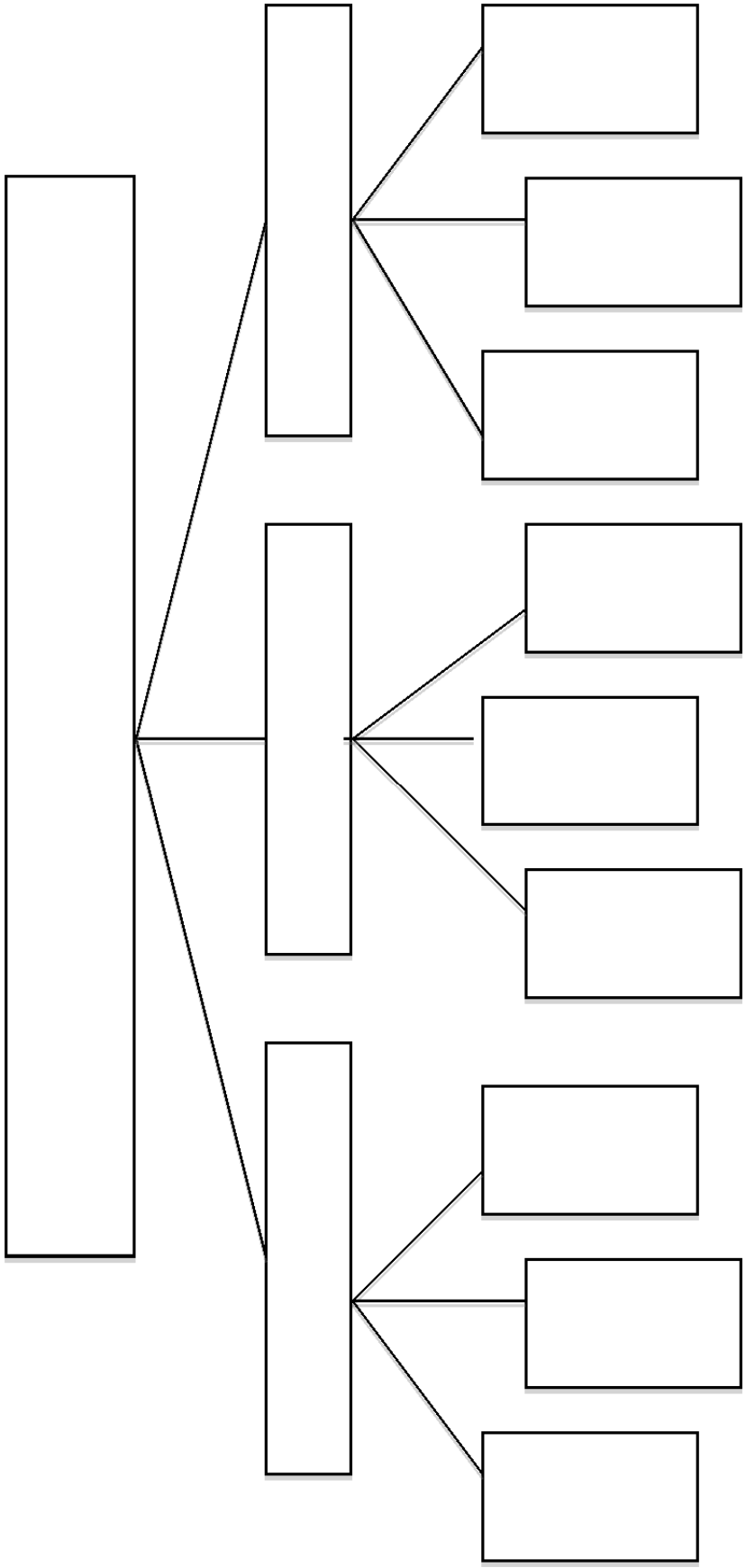
What it looks like:

- Before reading—The child brainstorms what he/she already knows about the topic and predicts what the passage will be about
- After reading— the child summarizes the passage and answers questions (2-3 factual and inferential)

Sample questions:

1. Summarize means to briefly tell about the main ideas of the passage in your own words.
    - What was the text about?
    - Tell me about the main points.
    - What did you learn about fingerprints?
2. Factual questions can be answered from reading or looking back at the passage.
    - What did the scientists find in the desert?
    - Tell me about how a windmill works.
    - What is a democracy?
3. Inferential questions can be answered from child's knowledge, related to child's experiences
    - Tell me about how a windmill works.
    - What do scientists do?
    - What do you think the pioneers will do if the wagon breaks down?
    - Tell me about a time when you saw an animal in the wild.
    - When have you been to the mountains and what did you see?

Graphic Organizer: Main topic and points of the passage



Collaborating with Parents

Why Involve Parents?

Parents and teachers each have an important and meaningful role in teaching children to read and to be successful in school. Both have valuable information, experience, and ideas they can share with one another to develop plans that support children. When teachers and parents work together, everyone benefits, especially children!

The home is a key learning environment because children spend much of their time outside of school. Parents can be involved in their children's education in many ways including setting up educational expectations, talking with their children about school, helping in the classroom, and providing home learning opportunities. Teachers can help parents to become involved by providing information, talking with parents, and providing multiple opportunities for involvement.

Parents often want to be involved, but are unsure how to help at home. Therefore, it is beneficial to collaborate with parents and provide guidance in arranging and delivering learning opportunities at home. Training and collaborating with parents is one promising way teachers can provide guidance and support to parents as they help their children with reading at home. Working together also gives parents a chance to share valuable information about their child with teachers and encourages consistency between home and school.

Meeting with Parents and Students

Component	What it looks like
1. Welcome and Introduction to Meeting	The teacher welcomes and thanks the parent and child for attending and reviews the primary purposes of the meeting (a) review tutoring strategies, (b) develop plan, (c) practice plan, and (d) identify ways to keep in touch about progress.
2. Discuss individual goals of tutoring	The teacher involves the parent and child in discussion of tutoring goals (i.e., why do you want to tutor or practice reading at home) and praises the stated goals.
3. Review the Tutoring Strategies	The teacher briefly reviews each of the tutoring strategies using the table of strategies included on the "Our Tutoring Practice Plan" handout and actively involves the parent in the discussion and/or asked if the parent had questions.
4. Plan Development	The parent and teacher collaboratively select strategies and finalize a tutoring plan following the provided guidelines.
5. Plan Practice	The parent practices the plan with the child while the teacher provides feedback on how well the steps were completed until the parent follows the plan well.
6. Plan for Ongoing Communication	The teacher and parent create and agree on a plan for ongoing communication and exchange contact information.
7. Collaboration throughout the Meeting	The teacher actively engages the parent throughout the meeting by asking the parent questions and encouraging sharing. The teacher provides specific praise for positive parent and child behaviors and includes the parent's ideas in developing the plan.

Our Reading Practice Plan

☐ Why do you want to practice reading together?

Parent:_____
_____
Child:_____
_____

☐ How many times per week will you practice reading using the program (at least 3 days per week)?

_____ days Best days to tutor (circle): M T W Th F

☐ What time will you practice reading (not tired or busy)? ____:_____

☐ Where will you practice reading (quiet location with few distractions and little clutter)?

☐ Check the Strategies you will use in tutoring:

Strategies	How it helps
☑ Repeated Reading	Practicing reading gives children opportunities to practice reading fluently and increases success with reading
☑ Correcting Mistakes ☐ Word Supply ☐ Word Practice ☐ Word and Phrase Practice ☐ Syllable Segmentation	Fixing mistakes and practicing words correctly helps children to learn to read the words better. Perfect practice makes perfect! Error correction decreases the likelihood students will make the same errors again.
☑ Feedback ☐ Pre-check/Post check ☐ Reward	Giving feedback helps to motivate children to do their best and allows the child see how practice helps.
☐ Show	Modeling reading shows children what fluent reading sounds like and decreases the likelihood students will make lots of errors.
☐ Flashcard Word Practice	Practicing reading words gives children opportunities to practice with hard words found in a story and increases the likelihood students will read words correctly the next time.
☐ Discussion	Talking about stories helps children to build comprehension and vocabulary skills. Children gain a better understanding of what is read.

☐ What will the plan look like? List the steps in order:

Step	Things to keep in mind
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	

How will you keep in touch?

- ☐ Notes
- ☐ Phone Calls
- ☐ Email
- ☐ Meetings

How frequently will you discuss the plan and reading progress?

_____

When will you meet next? _____

What will you do when you meet?

_____

_____

_____

_____

Sample Reading Practice Log

Each time you practice, write the date and number of minutes you practiced. Then, check the boxes for the steps that were done. Return this note to your child's teacher each week.

	Date			
Minutes of practice				
Strategies for Practicing Reading:	**Check if each step was completed**			
1. Discussion before reading				
2. Repeated Reading with Word Supply 1				
3. Phrase Practice 1				
4. Repeated Reading with Word Supply 2				
5. Phrase Practice 2				
6. Repeated Reading with Word Supply 3				
7. Phrase Practice 3				
8. Feedback: Pre-check/Post-check				
9. Discussion after reading				

Notes for the parent:

Notes for the teacher:

Adherence and Quality of Parent Training

Record the appropriate score for each component of the plan in the box.

Component	0	1	2
Welcome and Introduction to Meeting ☐	The teacher did not welcome or thank the parent and child for attending the session or review the purposes for the meeting.	The teacher either did not welcome or thank the parent and child for attending OR did not review the primary purposes of the meeting (a) review tutoring strategies, (b) develop plan, (c) practice plan, (d) identify ways to keep in communicate about progress.	The teacher welcomed or thanked the parent and child for attending and reviewed the primary purposes of the meeting (a) review tutoring strategies, (b) develop plan, (c) practice plan, (d) identify ways to keep in communicate about progress.
Discuss individual goals of tutoring ☐	The teacher did not involve parent or child in discussion of tutoring goals (i.e., why they want to practice reading together).	The teacher involved the parent and child in discussion of tutoring goals (i.e., why they want to be involved in tutoring), but did not praise the stated goals.	The teacher involved the parent and child in discussion of tutoring goals (i.e., why they want to be involved in tutoring) and praised the stated goals.
Review the Tutoring Strategies ☐	The teacher did not review the tutoring strategies with the parent.	The teacher reviewed the tutoring strategies, but did not involve the parent in the discussion and/or ask if the parent had questions. The conversation was characterized by the teacher telling the parent information—not interactive.	The teacher reviewed the tutoring strategies and actively involved the parent in the discussion and/or asked if the parent had questions. The conversation was characterized by two-way exchange of information—interactive.
Plan Development ☐	The parent and teacher did not select strategies or finalize a tutoring plan following the provided guidelines.	The parent and teacher selected strategies and finalized a tutoring plan following the provided guidelines. However, parent involvement is limited.	The parent and teacher selected strategies and finalized a tutoring plan following the provided guidelines. Parent and teacher are actively involved and collaboratively develop the plan.
Plan Practice ☐	The parent did not practice the plan with the child.	The parent practiced the plan with the child and the teacher provided feedback on steps completed and not completed as well as quality of implementation; however, the practice did not continue until the parent implemented the plan as intended (i.e., 85% of steps completed with a score of 2).	The parent practiced the plan with the child and the teacher provided feedback on steps completed and not completed as well as quality of implementation. Practice continued until the parent implemented the plan as intended (i.e., 85% of steps completed with a score of 2).
Plan for Ongoing Communication ☐	The teacher and parent did not create or agree on a plan for ongoing communication.	The teacher and parent created and agreed on a plan for ongoing communication, but contact information was not exchanged.	The teacher and parent created and agreed on a plan for ongoing communication and contact information was exchanged.
Collaboration throughout the Meeting ☐	The teacher did not actively engage the parent throughout the meeting or provide praise for positive parent and child behaviors. Communication was one-sided.	The teacher actively engaged the parent throughout the meeting by asking questions and encouraging sharing. Provided praise for positive parent and child behaviors.	The teacher actively engaged the parent throughout the meeting by asking questions and encouraging sharing. Provided specific praise for positive parent and child behaviors and incorporated parent ideas into plan development.

Monitoring and Evaluating Student Progress

Why Monitor Progress?

It is very important to ensure that the extra time spent practicing reading is helping to improve the child's reading ability. Monitoring the child's progress weekly can assist you and the child's parent in making instructional modifications and decisions. Curriculum-based measurement (CBM) provides a simple and fast way to monitor children's progress in reading. Data collected from CBM also provides an indicator of the effectiveness of instruction.

CBM of oral reading fluency is a practical, direct, and standardized method of monitoring students' reading performance. CBM is designed to be administered repeatedly over time and to be sensitive to instructional gains and the development of early reading skills. CBM is administered individually in a brief time period (one minute).

It is also important to monitor how parent tutoring is being done because lack of consistent implementation or problems during implementation can impact student progress. Therefore, it is important to contact the child's parent on a regular basis to share information and discuss implementation (see "Parent Contact Log").

How to Monitor Progress: Assessment

CBM of oral reading fluency materials for monitoring student progress are commercially available. For example, the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency measure and materials can be accessed for no charge (DIBELS website: https://dibels.uoregon.edu/). See the DIBELS Administration and Scoring Guide for additional scoring rules and integrity checklist.

Materials:

- Examiner copy (numbered version) of passage
- Student copy (non-numbered version) of passage
- Timer or Stopwatch
- Pen or pencil

Directions:

- Put the student copy in front of the child
- Position your copy so the student cannot see it (using a clipboard is helpful)
- Say to the student **"*Please read this*** *(point)* ***out loud. If you get stuck, I will tell you the word so you can keep reading. Do your best reading. Start here*** *(point to the first word of the passage).* ***Begin."***
- Start the timer for 1 minute when the student says the first word. The title is not counted. If the student fails to say the first word after 3 seconds, tell them the word and mark it as incorrect, then start your stopwatch.
- If the student does not say a word within 3 seconds, say the word and mark it as incorrect.
- Follow along as the student reads, putting a slash (/) over words read incorrectly (i.e., hesitations of more than 3 seconds, omitted words, mispronounced words, and words read in the wrong order). See the administration and scoring manual that accompanies the materials used for monitoring progress for detailed scoring procedures.
- At the end of **1 minute**, place a bracket (]) after the last word read by the student, stop the timer, and say ***"Stop."*** (Remove the passage.)
- Score the passage (i.e., the number of words read correctly) and graph the number with the student.

*Modified from Good, R. H., & Kaminski, R. A. (Eds.). (2002). Dynamic Indicators of Basic Early Literacy Skills (6th ed.) Administration and Scoring Guide. Eugene, OR: Institute for the Development of Educational Achievement. Available: http://dibels.uoregon.edu/.

Progress Monitoring Checklist

Step	Practice Number				
	1	2	3	4	5
Puts the student copy in front of the child.	☐	☐	☐	☐	☐
Positions the examiner copy so the student could not see it	☐	☐	☐	☐	☐
Says, "*Please read this (point) out loud. If you get stuck, I will tell you the word so you can keep reading. Do your best reading. Start here (point to the first word of the passage). Begin."*	☐	☐	☐	☐	☐
Start the timer for 1 minute when the student says the first word.	☐	☐	☐	☐	☐
If the student does not say a word within 3 seconds, says the word and marks it as incorrect.	☐	☐	☐	☐	☐
Follows along as the student reads, and correctly puts a slash (/) over words read incorrectly (i.e., hesitations of more than 3 seconds, omitted words, mispronounced words, and words read in the wrong order).	☐	☐	☐	☐	☐
At the end of 1 minute, places a bracket (]) after the last word read by the student, stops the timer, and says *"Stop."* (Remove the passage.)	☐	☐	☐	☐	☐
Correctly scores the passage (i.e., the number of words read correctly) and graphs the number with the student.	☐	☐	☐	☐	☐
Total number of steps completed correctly	/8	/8	/8	/8	/8

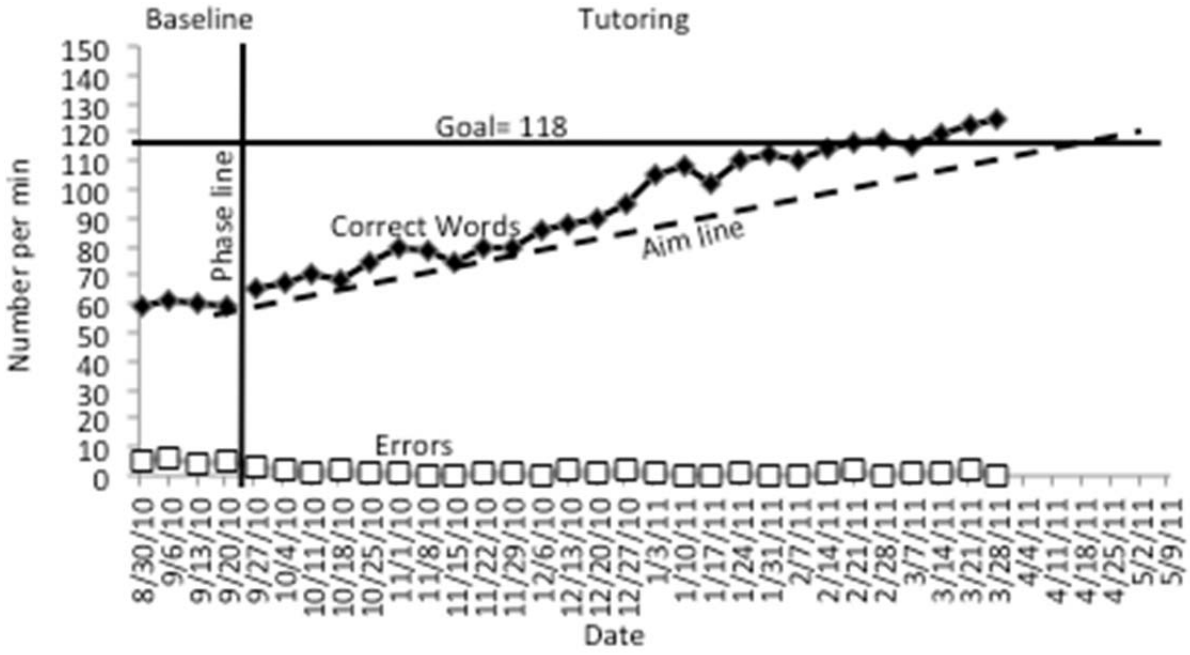
How to Monitor Progress: Graphing

Graphing student data provides a visual representation of student progress, making it easier to see how a student is responding to parent tutoring. The following are key components of a graph:

- ❑ **Horizontal or x-axis label,** containing the timeframe/dates
- ❑ **Vertical or y-axis label,** containing the skill being measured (i.e., correct words per minute)
- ❑ **Baseline data points,** containing any data collected prior to the start of tutoring
- ❑ **Phase change lines,** showing when parent tutoring or other changes began
- ❑ **Descriptions/labels for baseline/intervention phases**
- ❑ **Aim line,** representing the growth necessary to achieve the pre-determined goal based on the expected growth rate. However, if the expected growth rate is much higher or lower than the ambitious growth rate, use the ambitious growth rate. The line is drawn from the median of the baseline data points to the goal ending on the date when goal is expected to be met.
  - Expected Growth for ORF: Subtract student's current score from expected DIBELS benchmark score and divide by number of weeks
    [(expected benchmark –student's current score)/ number of weeks] = expected growth rate
  - Ambitious Growth Rates for ORF:
    - 1st Grade: 3 correct words per minute per week
    - 2nd Grade: 2 correct words per minute per week
    - 3rd Grade: 1.5 correct words per minute per week
    - 4th Grade: 1.1 correct words per minute per week
- ❑ **Goal line,** indicating the level of desired performance within the specified time frame (set by DIBELS benchmarks or by using the ambitious growth rates)
- ❑ **Intervention data points,** containing any progress monitoring data collected after the start of tutoring

*Modified from Nebraska Response to Intervention Implementation and Support Team (2010)

How to Monitor Progress: Graphing



Key Components for a graph:

- ❑ Horizontal or x-axis label
- ❑ Vertical or y-axis label
- ❑ Baseline data points
- ❑ Phase change lines
- ❑ Descriptions/labels for baseline/intervention phases
- ❑ Aim line
- ❑ Goal line
- ❑ Intervention data points

Evaluating Progress

Examining the data regularly is important for making decisions about a student's progress. After the parent has been tutoring the child for five weeks, examine the progress monitoring graph for the following components to see how the student is progressing.

When looking at the data, examine the following components:

- **Level**: At what level is the student performing? How does the level compare to grade level expectations?
- **Trend**: What does the trend look like (are the child's data increasing or decreasing)? Is the student's progress above the aim line? How do the scores after the tutoring began compare to scores before tutoring began (i.e., intervention compared to baseline)?
- **Variability**: Does the child's performance show a consistent picture? Does the child's performance look inconsistent (e.g., 30, 60, 29 words on weeks 1, 2, and 3, respectively)?

Based on the data, decide whether the child is making progress. Consider the following questions depending on the decision.

Progress:

- Has the student met the grade-level expectations? How does the student compare to peers?
    - Continue parent tutoring until the desired level is achieved.

Little, no, or inconsistent progress:

- Is the reading practice being done on a regular basis?
    - Work with parent to determine how reading practice can be done on a regular basis at least three days per week. What would make it easier and better fit their routine?
- Are any of the Interactive Reading steps being left out?
    - Examine why the step is left out (e.g., parent forgot, doesn't like the step, child is noncompliant, etc.) and what would make it easier to implement. Review the reason why the step is included and practice the step with the parent.
- Is the child compliant during reading practice?
    - Develop a motivation plan for the child (see "Tools to Help with Behavior")
- If the child does not make progress on five consecutive weeks and the parent has been tutoring consistently, it may be necessary to re-examine the child's reading skills (i.e., does the child have the prerequisite reading skills), the instructional strategies and materials in use, and the amount of time spent practicing. Together, make necessary modifications.

Parent Contact Log

When you contact or meet with the child's parent to share information, write a brief note about the following:

- Information shared with the parent (e.g., positive notes, reading progress, classroom observations, etc.)
- Information the parent shared (e.g., how tutoring is used, how often they practice, successes, and challenges)
- Any decisions made (e.g., tutor more frequently, use more difficult material, develop a motivation system)

Any decisions made	Information the parent shared with me	Information I shared with the parent	Date

Additional Resources

Frequently Asked Questions

If we miss a day of practice, should we do two sessions on one day?

No, the best way to practice is to space the sessions out across days because children learn more in shorter, more frequent periods than in longer but less frequent sessions. Also, reading for a longer period may be difficult and less enjoyable for both you and your child. If you miss a day, try to practice on another day.

Why does my child read a word correctly one time and not another?

When children are learning a new word, it is common for them to be inconsistent. The best way to help your child be more consistent is to correct errors and continue practicing.

Should I correct words my child reads incorrectly if the word means the same thing (e.g., the word is "large", but the child says "big")?

Yes, you should correct your child if he/she replaces the written word with another word that means the same thing because it is important to focus on what is written (e.g., the letters and words) to become a good reader.

Should I have my child sound out words when we practice?

Learning how to sound out words is an important part of learning to read. If your child seems to struggle when he or she tries to sound out words, it is important to talk to your child's teacher about your concern. The focus of this program is to help children read accurately and quickly, so if your child struggles to read a word for more than 3 seconds, tell him or her the word and have him or her repeat the word. This lets your child continue reading, focusing on reading fluently, and decreases the chances that your child will become frustrated when reading.

What if my child reads too fast?

When children race through a passage, making careless mistakes, it can be helpful to set a goal for the number of words they should meet, but not go past.

What if my child does not want to read?

Motivation systems can be helpful if your child resists practicing. You can use the section in this handbook 'Tools to Help with Behavior' to develop a plan to make tutoring a more pleasant experience. Working with your child's teacher to develop the plan is beneficial because you can share ideas and information that will make the plan more successful.

How many days should I practice reading with my child per week?

You should practice reading with your child at least 3 days per week during the school year. If you are using the program during school vacations, it is best to practice reading with your child daily.

Should I correct expression?

As children practice reading, their expression (e.g., pausing at commas, saying words in an excited tone if there is an exclamation point) improves, so you do not need to focus on correcting expression as your child reads.

How fast should I read when I read to my child?

You should read to your child at a comfortable pace. Your child should be able to follow along as you read (if you are reading too quickly or too slowly, your child may lose his or her place often).

What if my child has more than one error in the same sentence? Should I correct one word at a time and have him re-read the same sentence each time?

If your child has more than one error in the same sentence, read each word and have your child repeat each word. Then, have your child re-read the sentence with both words three times.

*Modified from Erion, J. & Ronka, C.S. (2004) Improve reading fluency with parent tutoring. *TEACHING Exceptional Children Plus,* 1(2) Article 2. Retrieved from http://escholarship.bc.edu/education/tecplus/vol1/iss2/2

Tools to Help with Behavior

Setting reading practice up for success

- Include reading as part of your routine.
- Set up reading as an expectation, not an option.
- Talk about reading and reading practice positively.
- Practice reading when your child is not tired.
- Minimize distractions such as the TV, radio, friends, clutter at work space, etc.

Making praise effective ·

- **R**ight away- praising immediately after children do something good is more effective than waiting until later.
- **O**ften- praising children often is important when they are learning and practicing a skill. Try to make 3-4 positive statements for any 1 correction.
- **S**ay what for- telling children exactly what you are praising helps them know what behavior they should increase.
- **E**nthusiastic- showing children that you are excited and sincere makes praise more effective.

Motivation systems

Motivation systems can be helpful if the child resists practicing. Setting a goal for the child and providing an inexpensive item, preferred activity, or special privileges can make tutoring more positive. Working with the child's parent to develop a plan is beneficial because you can share ideas and information that will make the plan more successful. Writing down the plan is also useful and can help you to implement the plan consistently so the child knows exactly what to expect and what he or she needs to do to earn a reward. Sample materials for each of the systems described below are provided. After reviewing the information below, write the plan on the "Our Motivation Plan" sheet.

Goals may be set for improving reading performance (e.g., number of words read) or for improving specific behaviors during the session (e.g., starting on time, not complaining, following directions).

Rewards may include a new pencil, a bouncy ball, playing a game together, staying up a little later, or picking dessert. Having a variety of rewards and changing them on a regular basis is helpful because children may get tired of the working for the same things.

Select rewards that:

- Are special to the child- things your child likes and would like to work for.
  - Not all children like the same things- while one child may like to work for time to play catch, another child may want to avoid time to play catch, so he would not try to meet his goal.
  - Let the child help come up with things he/she would like to work for.
- Are specific.
  - The parent and child know exactly what will be earned if the goal is met (e.g., 20 minutes to play a board game with mom or dad)
  - The child doesn't get all the time.
  - If ice cream is a reward, the child should not have ice cream unless they have earned it.
  - If playing video games is a reward, the child shouldn't be able to play video games all afternoon. It is not as exciting to earn something we get on a regular basis.
- Can be given to the child immediately following the good behavior.
  - If a trip to grandma's house is a reward, then the parent must be able to drive to Grandma's on a moment's notice! Think carefully about the rewards selected.



Grab Bag

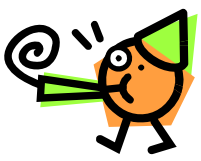
1. Help the parent and child think of 15-20 rewards (activities, items, privileges, etc.).
2. Write each reward on a piece of paper and put the pieces in a bag.
3. If the child meets the goal, he/she can pick a paper with a reward written on it from the bag.
4. The grab bag can also be used with Chart Moves described below.

Chart Moves

1. Select a chart (you can also make your own, use a dot-to-dot page, or a coloring page).
2. Help the parent and child select a reward the child will earn when the chart is complete (you can also create a grab bag of rewards).
3. If the child meets the goal, he/she can connect a dot or color in a portion of the chart.
4. When the chart is complete, he/she earns the pre-determined reward.

Reward Spinner

1. Help the parent and child think of 7 rewards (activities, items, privileges, etc.).
2. Order the rewards from most preferred to least preferred.
3. Write the most preferred rewards on the smallest sections of the spinner and other rewards on the larger sections.
4. If the child meets the goal, he/she can spin the spinner and receive the reward the spinner lands on.



Our Motivation Plan

Select one of the types of goals below and describe what must be done for your child to receive the reward specified below. Make sure to be very specific so that anyone who saw the plan would know whether or not your child should receive the reward.

___ 1. Improve reading performance (e.g., increase of 20 words correct from pre- check to post-check):

____ 2. Improve specific behaviors during reading practice (e.g., come to the table to start tutoring within 1 minute of being asked to come; read the word aloud when asked in a nice voice, not whining or complaining).

Rewards

What will happen when your child meets his or her goal (e.g., connect a dot on the chart, spin the reward spinner)?

Praise

Praise your child for good behavior throughout tutoring. Paying attention to behaviors you want to see again in the future lets your child know you want him or her to continue to show the behavior. Think about how to make your praise effective (**R**ight away, **O**ften, **S**ay what for, **E**nthusiastic). What are some statements you can use to praise your child?

_____

_____

_____

_____

Reward List

Together, think of 15-20 rewards (activities, items, privileges, etc.). Select rewards that:

- Are special to your child
- Are specific
- Are things your child doesn't get or have access to all the time
- Are things that can be given to your child immediately following the good behavior

1.	11.
2.	12.
3.	13.
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8.	18.
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10.	20.

Sample combined Grab Bag and Chart Moves

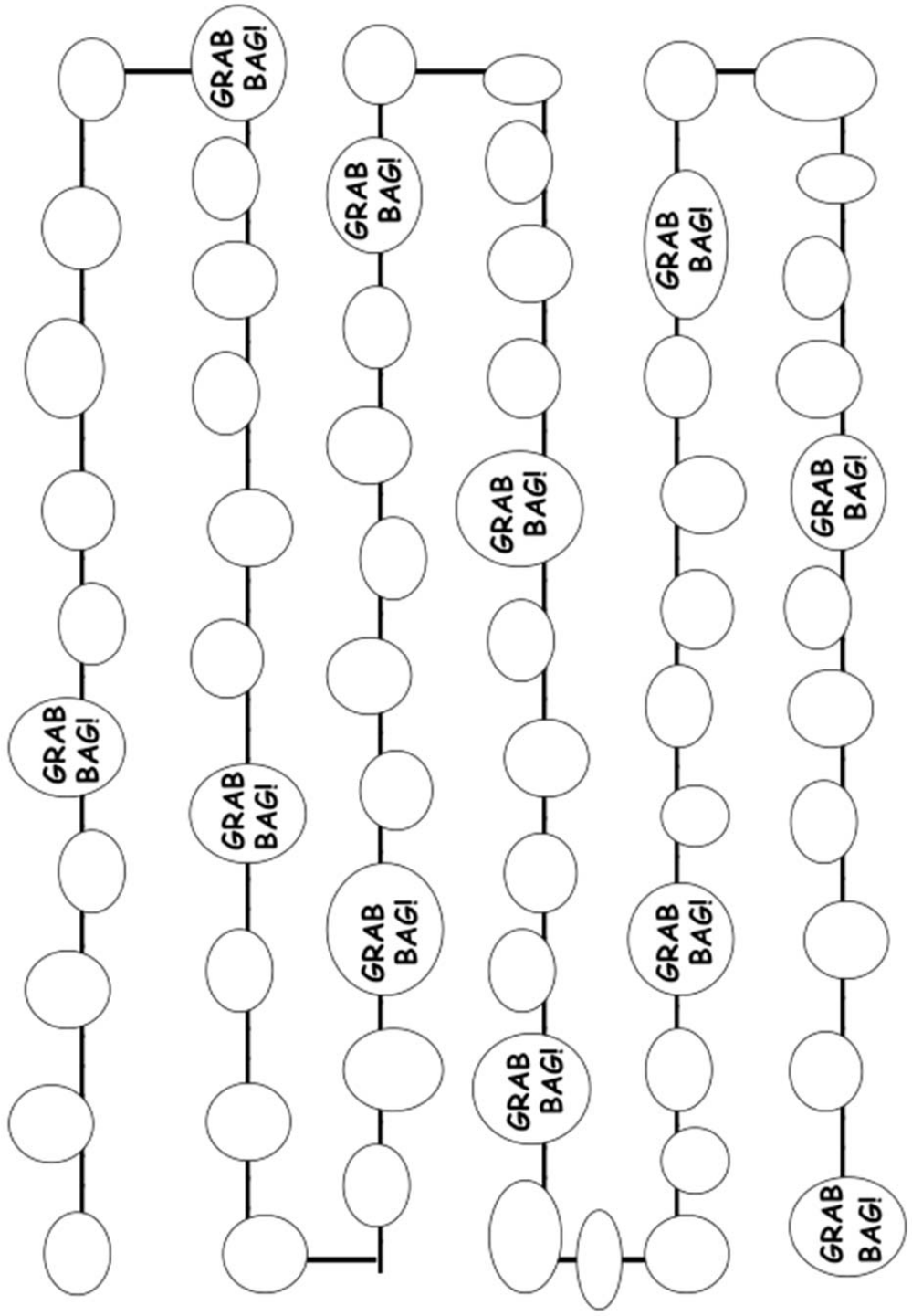
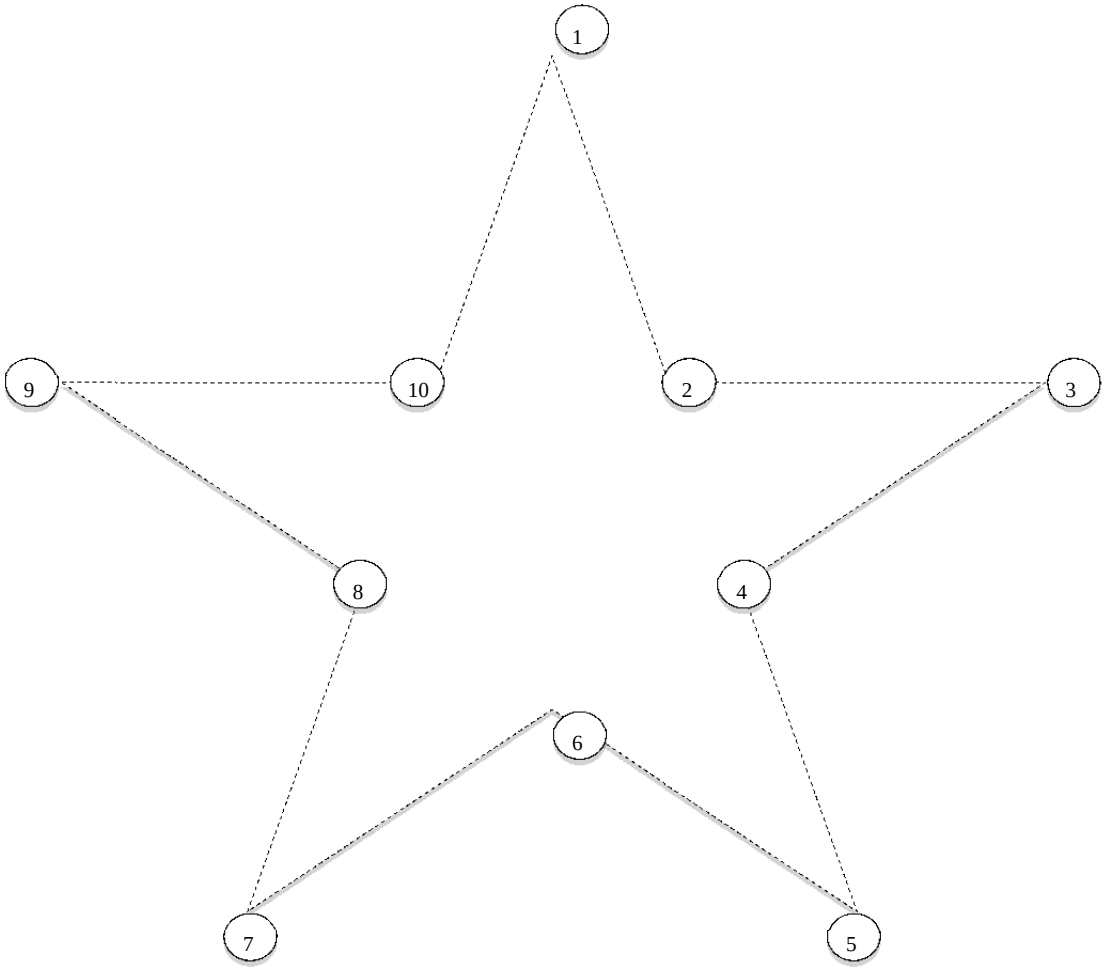
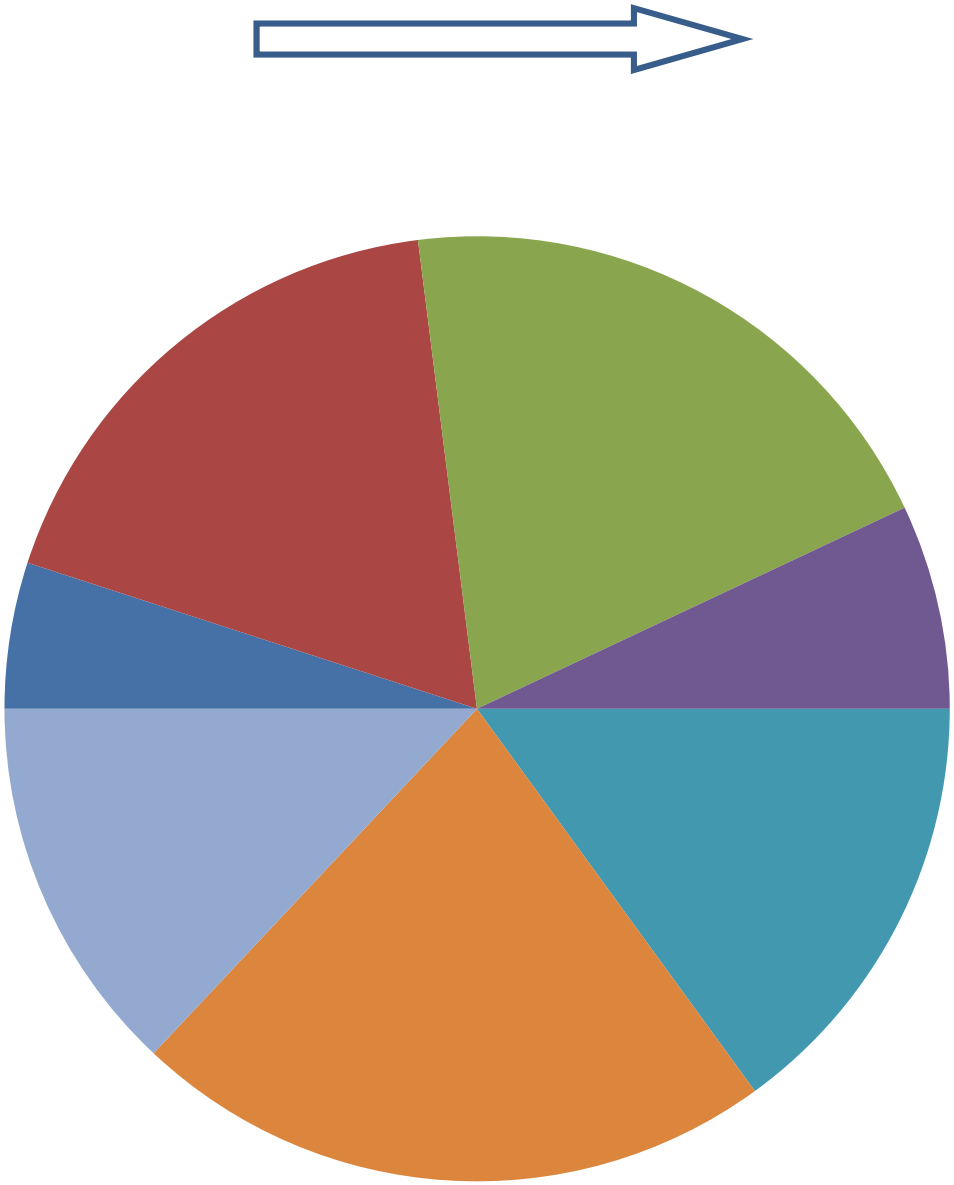


Chart Moves





Reward Spinner





Parents as Tutors: Partnering to Improve Oral Reading Fluency

Parent Handbook



Dear Parent,

The purpose of this handbook is to provide you with information about ways to tutor your child in reading. The accompanying video provides examples of the different tutoring strategies described in this book.

To learn how to improve your child's reading fluency:

- Watch the video "Parents as Tutors"
- Look through this book
- Meet with your child's teacher to put together a plan and practice using the strategies

After you have met with your child's teacher:

- Tutor your child at least three days per week
- Keep a log of the times you practice reading with your child and any notes for your child's teacher and return the materials to school each week

Your child's teacher will:

- Work with you to plan and use the strategies
- Monitor your child's reading fluency
- Share updates about your child's progress

We hope you enjoy working with your child's teacher and helping your child with reading!

Sincerely,

Sara Kupzyk, MA
School Psychology Doctoral Candidate
University of Nebraska-Lincoln

*This handbook was developed as part of the Wing Institute Graduate Research Grant.

Effective Strategies for Improving Oral Reading Fluency



Importance of Reading Fluency

Reading is important to children's success in school because it is a skill that is required in all subjects. In fact, more than 85% of the work in school across subjects such as history, math, and science, requires children to read text (e.g., textbooks, worksheets, computer screens). If children struggle to read fluently, it is harder for them to learn from reading. Reading fluently helps students to better understand what is read because they do not have to focus on sounding out each letter or word. The child can focus more attention on understanding what is read.

Reading is a skill just like playing an instrument or a sport. To become good readers, students must practice reading. Even when students are good readers, it is important for them to practice on a regular basis to continue to do well. This book describes strategies that improve oral reading fluency. In other words, the strategies help children learn to read more quickly, accurately, and with good expression.

<u>Students who read fluently:</u>

- Read quickly
- Read accurately
- Read with good expression

Overview of Strategies for Improving Reading Fluency

Three specific tutoring strategies should be used to improve children's oral reading fluency. **Repeated readings** is the main strategy, which involves the child reading the same passage three to four times. Practicing reading in this way leads to improved speed of reading on the same passage as well as on new passages. **Correcting mistakes** is another effective strategy as it helps children learn how to pronounce difficult words so they read the word accurately in the future. **Feedback** on reading performance is also a valuable strategy because it increases the child's motivation to practice reading and participate in tutoring.

Three additional tutoring strategies can be added when needed. First, children who make several errors benefit from having adults **show** what reading should sound like by reading the text aloud to them before reading the text themselves. Hearing a good model read the story helps children learn new words and hear what fluent reading sounds like. Second, practicing difficult words missed during reading on **flashcards** helps children master words so that they are more likely to read them correctly in the passage. Finally, it can be useful to **discuss** the passage after children have had a chance to practice reading it because comprehension is the ultimate goal of reading. Discussing the content and asking questions gives children an opportunity to learn about the content and gain meaning from text.

Tutoring plans for fluency <u>should include</u>	Additional strategies that <u>may be included</u> in the tutoring plan
Repeated readings	Show
Correcting mistakes	Flashcard word practice
Feedback	Discussion of text

Repeated Readings

Why it is important:
Repeated readings is a well-founded strategy that gives children many opportunities to practice reading the same passage so that they can improve their reading speed and accuracy.

What it looks like:
The child reads the passage aloud three to four times. Each time, the child tries to read more quickly and accurately while learning about the topic.

Correcting Mistakes

Why it is important:
Reading fluency is improved when children's mistakes are corrected because they read more accurately. Perfect practice is key to increasing accuracy. There are several different ways to correct reading mistakes. An error or mistake is made when the child reads a word incorrectly, misses the word, or struggles with the word for more than 3 seconds. Common ways to correct errors include word supply, word practice, phrase practice, and syllable-by-syllable practice. Tutoring plans should include at least one way to correct mistakes.

What it looks like:

- **Word Supply**- When the child misses a word or struggles to read a word, the parent reads the word for the child and asks the child to read the word aloud again before moving on to the next word.

- **Word Practice**—After reading the passage, the parent points to and reads the words the child missed and asks the child to point to and read the words three times.

- **Phrase Practice**—After reading the passage, the parent points to and reads the words the child missed and asks the child to point to and read the word along with part of the sentence three times.

- **Syllable-by-Syllable Practice**— After reading the passage, the parent reads each syllable of the words the child missed, has the child read each syllable and then blend the syllables together.

Feedback

Why it is important:
Feedback on reading is beneficial because it motivates students to improve their reading and practice during tutoring. Tutoring plans should include feedback in at least one of the following ways. Additional materials and ideas for increasing motivation are also included in the "Additional Materials" section.

What it looks like:

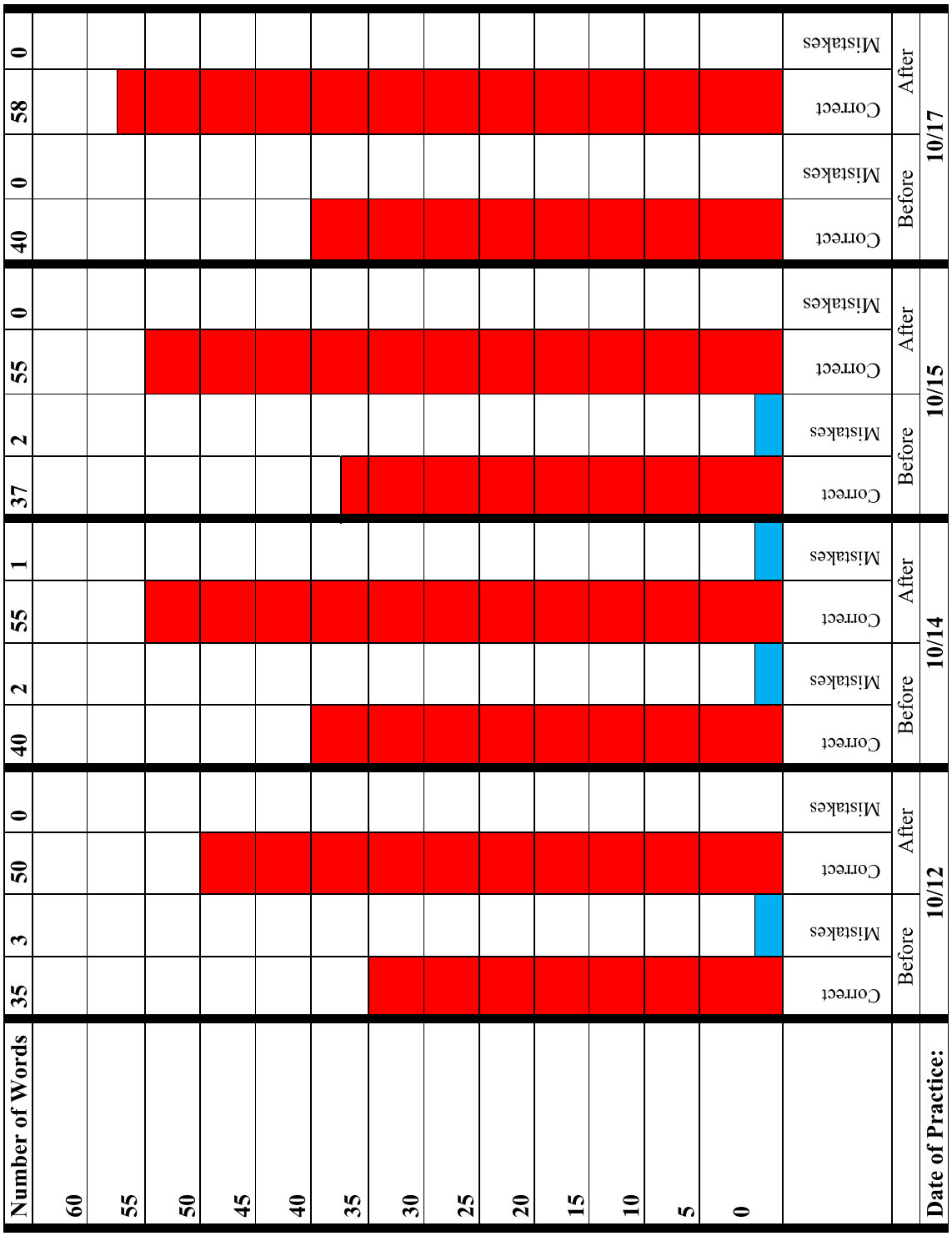
- **Pre-Check/Post-Check**— The Parent times the child reading for 1 minute on the first and last time the child reads the passage, then counts and graphs the number of words read to see if more words were read correctly at the post-check.

- **Reward**—Set a goal for the number of words to read or length of time to finish the passage. The parent provides a reward if the child meets a goal number of words read correctly (see Tools for Helping with Behavior for ideas).



														Mistakes	After	
														Correct		
														Mistakes	Before	
														Correct		
														Mistakes	After	
														Correct		
														Mistakes	Before	
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														Correct		
														Mistakes	After	
														Correct		
														Mistakes	Before	
														Correct		
Number of Words																**Date of Practice:**

Beth's Reading Practice



Beth's Reading Practice

Show

Why it is important:
Reading the passage aloud to children before they read the passage shows them what fluent reading should sound like. It also gives children a chance to hear any difficult words in the passage pronounced correctly so that they are less likely to make a mistake.

What it looks like:
The parent reads the story aloud at a comfortable pace with good expression and makes sure the child follows along on their copy of the passage.



Flashcard Word Practice

Why it is important:
Practicing difficult words on flashcards provides many opportunities for the student to hear the correct pronunciation and correctly practice the word. When children master words on flashcards, they are more likely to read the words correctly in a passage.

What it looks like:
The parent or child writes the words the child missed more than once when reading on index cards. For each new word, the parent holds up the word, says the word (e.g., this word is pencil), and asks the child to read the word. If the child reads the word correctly, the parent shuffles the cards and adds a new word. The parent shows each of the cards until the child consistently gets all of the words correct on the first try.

Discussion

Why it is important:
Talking about the passage helps to improve reading comprehension. Children should be encouraged to use vocabulary from the passage and answer in complete sentences. Graphic organizers can also be used to help children organize the information (see example on next page).

What it looks like:

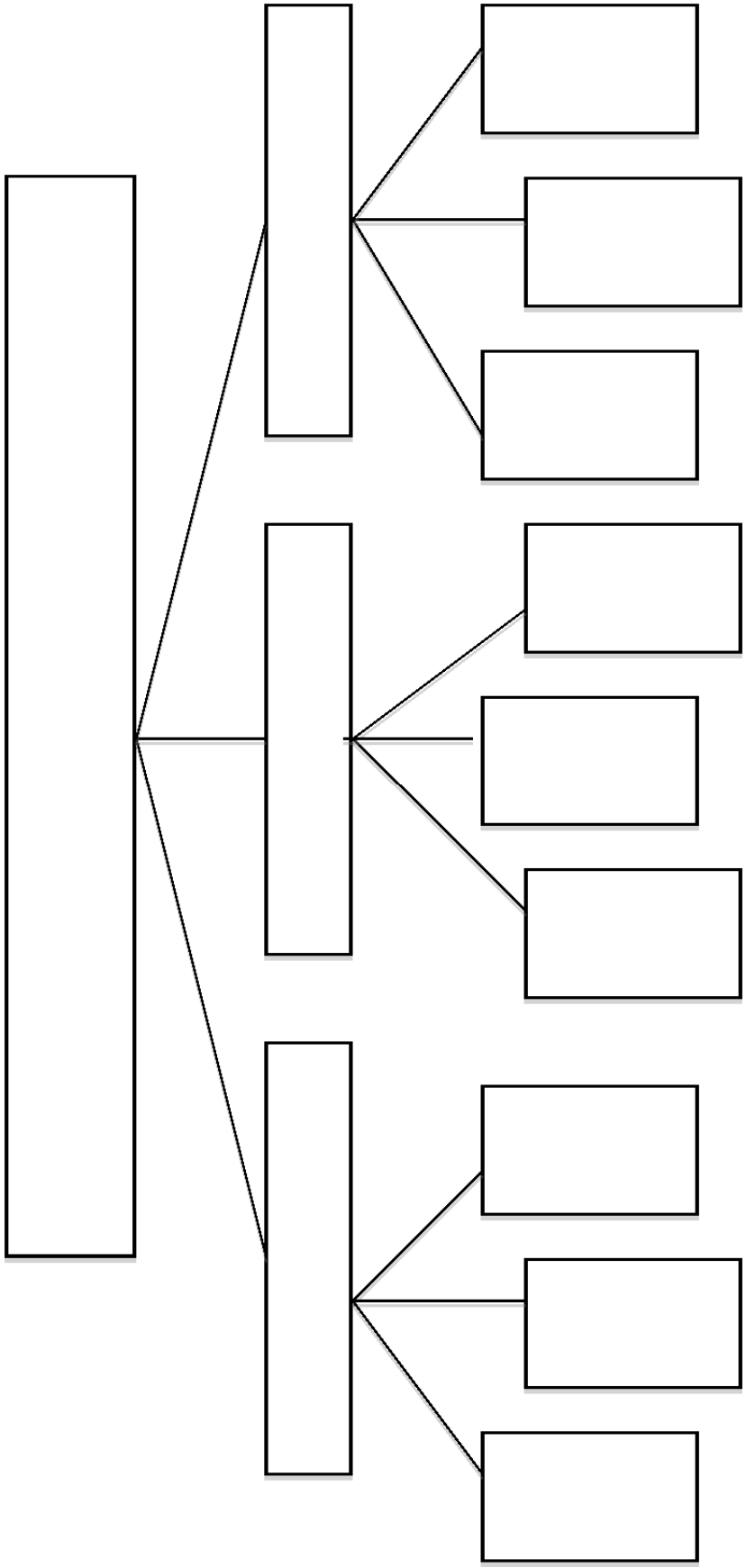
- Before reading—The child brainstorms what he/she already knows about the topic and predicts what the passage will be about
- After reading— the child summarizes the passage and answers questions (2-3 factual and inferential)

Sample questions:

4. Summarize means to briefly tell about the main ideas of the passage in your own words.
    - What was the text about?
    - Tell me about the main points.
    - What did you learn about fingerprints?
5. Factual questions can be answered from reading or looking back at the passage.
    - What did the scientists find in the desert?
    - Tell me about how a windmill works.
    - What is a democracy?
6. Inferential questions can be answered from child's knowledge, related to child's experiences
    - Tell me about how a windmill works.
    - What do scientists do?
    - What do you think the pioneers will do if the wagon breaks down?
    - Tell me about a time when you saw an animal in the wild.
    - When have you been to the mountains and what did you see?

**Sample questions will be provided for each passage your child brings home

Graphic Organizer: Main topic and points of the passage



Collaborating With Teachers

Why Work with Teachers?

Parents and teachers each have an important and meaningful role in teaching children to read and to be successful in school. You both have valuable information, experience, and ideas that you can share with one another to develop plans that support your child. When teachers and parents work together, everyone benefits, especially children! *Parents as Tutors* is one program that helps teachers and parents work together to support reading at school and home.

After you have watched the video, you and your child will meet with the teacher to do the following:

1. Talk about why you want to practice reading
2. Review tutoring strategies and decide what your plan will look like (see Our Practice Plan on the next pages)
3. Practice the plan
4. Decide how to keep in touch

Our Reading Practice Plan

☐ Why do you want to practice reading together?

Parent:_____

Child:_____

☐ How many times per week will you practice reading using the program (at least 3 days per week)?

_____ days Best days to tutor (circle): M T W Th F Sa Su

☐ What time will you practice reading (not tired or busy)? ____:_____

☐ Where will you practice reading (quiet location with few distractions and little clutter)?

☐ Check the Strategies you will use in tutoring:

Strategies	How it helps
☑ Repeated Reading	Practicing reading gives children opportunities to practice reading fluently and increases success with reading
☑ Correcting Mistakes ☐ Word Supply ☐ Word Practice ☐ Word and Phrase Practice ☐ Syllable Segmentation	Fixing mistakes and practicing words correctly helps children to learn to read the words better. Perfect practice makes perfect! Error correction decreases the likelihood students will make the same errors again.
☑ Feedback ☐ Pre-check/Post check ☐ Reward	Giving feedback helps to motivate children to do their best and allows the child see how practice helps.
☐ Show	Modeling reading shows children what fluent reading sounds like and decreases the likelihood students will make lots of errors.
☐ Flashcard Word Practice	Practicing reading words gives children opportunities to practice with hard words found in a story and increases the likelihood students will read words correctly the next time.
☐ Discussion	Talking about stories helps children to build comprehension and vocabulary skills. Children gain a better understanding of what is read.

☐ What will the plan look like? List the steps in order:

Step	Things to keep in mind
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	

How will you keep in touch?

- ☐ Notes
- ☐ Phone Calls
- ☐ Email
- ☐ Meetings

How frequently will you discuss the plan and reading progress?

_____

When will you meet next? _____

What will you do when you meet?

_____

_____

_____

_____

Sample Reading Practice Log

Each time you practice, write the date and number of minutes you practiced. Then, check the boxes for the steps that were done. Return this note to your child's teacher each week.

	Date			
Minutes of practice				
Strategies for Practicing Reading:	**Check if each step was completed**			
1. Discussion before reading				
2. Repeated Reading with Word Supply 1				
3. Phrase Practice 1				
4. Repeated Reading with Word Supply 2				
5. Phrase Practice 2				
6. Repeated Reading with Word Supply 3				
7. Phrase Practice 3				
8. Feedback: Pre-check/Post-check				
9. Discussion after reading				

Notes for the parent:

Notes for the teacher:

Additional Resources

Frequently Asked Questions

If we miss a day of practice, should we do two sessions on one day?

No, the best way to practice is to space the sessions out across days because children learn more in shorter, more frequent periods than in longer but less frequent sessions. Also, reading for a longer period may be difficult and less enjoyable for both you and your child. If you miss a day, try to practice on another day.

Why does my child read a word correctly one time and not another?

When children are learning a new word, it is common for them to be inconsistent. The best way to help your child be more consistent is to correct errors and continue practicing.

Should I correct words my child reads incorrectly if the word means the same thing (e.g., the word is "large", but the child says "big")?

Yes, you should correct your child if he/she replaces the written word with another word that means the same thing because it is important to focus on what is written (e.g., the letters and words) to become a good reader.

Should I have my child sound out words when we practice?

Learning how to sound out words is an important part of learning to read. If your child seems to struggle when he or she tries to sound out words, it is important to talk to your child's teacher about your concern. The focus of this program is to help children read accurately and quickly, so if your child struggles to read a word for more than 3 seconds, tell him or her the word and have him or her repeat the word. This lets your child continue reading, focusing on reading fluently, and decreases the chances that your child will become frustrated when reading.

What if my child reads too fast?

When children race through a passage, making careless mistakes, it can be helpful to set a goal for the number of words they should meet, but not go past.

What if my child does not want to read?

Motivation systems can be helpful if your child resists practicing. You can use the section in this handbook 'Tools to Help with Behavior' to develop a plan to make tutoring a more pleasant experience. Working with your child's teacher to develop the plan is beneficial because you can share ideas and information that will make the plan more successful.

How many days should I practice reading with my child per week?

You should practice reading with your child at least 3 days per week during the school year. If you are using the program during school vacations, it is best to practice reading with your child daily.

Should I correct expression?

As children practice reading, their expression (e.g., pausing at commas, saying words in an excited tone if there is an exclamation point) improves, so you do not need to focus on correcting expression as your child reads.

How fast should I read when I read to my child?

You should read to your child at a comfortable pace. Your child should be able to follow along as you read (if you are reading too quickly or too slowly, your child may lose his or her place often).

What if my child has more than one error in the same sentence? Should I correct one word at a time and have him re-read the same sentence each time?

If your child has more than one error in the same sentence, read each word and have your child repeat each word. Then, have your child re-read the sentence with both words three times.

*Modified from Erion, J. & Ronka, C.S. (2004) Improve reading fluency with parent tutoring. *TEACHING Exceptional Children Plus,* 1(2) Article 2. Retrieved from http://escholarship.bc.edu/education/tecplus/vol1/iss2/2

Tools to Help with Behavior

Setting reading practice up for success

- Include reading as part of your routine.
- Set up reading as an expectation, not an option.
- Talk about reading and reading practice positively.
- Practice reading when your child is not tired.
- Minimize distractions such as the TV, radio, friends, clutter at work space, etc.

Making praise effective ·

- **R**ight away- praising immediately after children do something good is more effective than waiting until later.
- **O**ften- praising children often is important when they are learning and practicing a skill. Try to make 3-4 positive statements for any 1 correction.
- **S**ay what for- telling children exactly what you are praising helps them know what behavior they should increase.
- **E**nthusiastic- showing children that you are excited and sincere makes praise more effective.

Motivation systems

Motivation systems can be helpful if your child resists practicing. Setting a goal for your child and providing an inexpensive item, preferred activity, or special privileges can be make tutoring more positive. Working with your child's teacher to develop a plan is beneficial because you can share ideas and information that will make the plan more successful. Writing down the plan is also useful and can help you to implement the plan consistently so your child knows exactly what to expect and what he or she needs to do to earn a reward. Sample materials for each of the systems described below are provided. After reviewing the information below, write the plan on the "Our Motivation Plan" sheet.

Goals may be set for improving reading performance (e.g., number of words read) or for improving specific behaviors during the session (e.g., starting on time, not complaining, following directions).

Rewards may include a new pencil, a bouncy ball, playing a game together, staying up a little later, or picking dessert. Having a variety of rewards and changing them on a regular basis is helpful because children may get tired of the working for the same things.

Select rewards that:

- Are special to you child- things your child likes and would like to work for.
  - Not all children like the same things- while one child may like to work for time to play catch, another child may want to avoid time to play catch, so he would not try to meet his goal.
  - Let your child help come up with things he/she would like to work for.
- Are specific.
  - You and your child know exactly what will be earned if the goal is met (e.g., 20 minutes to play a board game with mom or dad)
- Your child doesn't get all the time.
  - If ice cream is a reward, your child should not have ice cream unless they have earned it.
  - If playing video games is a reward, your child shouldn't be able to play video games all afternoon. It is not as exciting to earn something we get on a regular basis.
- Can be given to your child immediately following the good behavior.
  - If a trip to grandma's house is a reward, then the parent must be able to drive to Grandma's on a moment's notice! Think carefully about the rewards selected.



Grab Bag

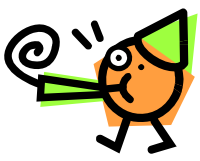
1. With your child, think of 15-20 rewards (activities, items, privileges).
2. Write each reward on a piece of paper and put the pieces in a bag.
3. If your child meets the goal, he/she can pick a paper with a reward written on it from the bag.
4. The grab bag can also be used with Chart Moves described below.

Chart Moves

1. Select a chart (you can also make your own, use a dot-to-dot page, or a coloring page).
2. With your child, select a reward he/she will earn when the chart is complete (you can also create a grab bag of rewards).
3. If your child meets the goal, he/she can connect a dot or color in a portion of the chart.
4. When the chart is complete, he/she earns the pre-determined reward.

Reward Spinner

1. With your child, think of 7 rewards (activities, items, privileges, etc.).
2. Order the rewards from highest preferred/biggest to lowest preferred.
3. Write the highest preferred rewards on the smallest sections of the spinner and other rewards on the larger sections.
4. If your child meets the goal, he/she can spin the spinner and receives the reward the spinner lands on.



Our Motivation Plan

Select one of the types of goals below and describe what must be done for your child to receive the reward specified below. Make sure to be very specific so that anyone who saw the plan would know whether or not your child should receive the reward.

___ 1. Improve reading performance (e.g., increase of 20 words correct from pre- check to post-check, make fewer than 2 mistakes):

____ 2. Improve specific behaviors during reading practice (e.g., come to the table to start tutoring within 1 minute of being asked to come; read the word aloud when asked in a nice voice, not whining or complaining).

Rewards

What will happen when your child meets his or her goal (e.g., connect a dot on the chart, spin the reward spinner)?

Praise

Praise your child for good behavior throughout tutoring. Paying attention to behaviors you want to see again in the future lets your child know you want him or her to continue to show the behavior. Think about how to make your praise effective (**R**ight away, **O**ften, **S**ay what for, **E**nthusiastic). What are some statements you can use to praise your child?

_____

_____

_____

_____

Reward List

Together, think of 15-20 rewards (activities, items, privileges, etc.). Select rewards that:

- Are special to your child
- Are specific
- Are things your child doesn't get or have access to all the time
- Are things that can be given to your child immediately following the good behavior

1.	11.
2.	12.
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Sample combined Grab Bag and Chart Moves

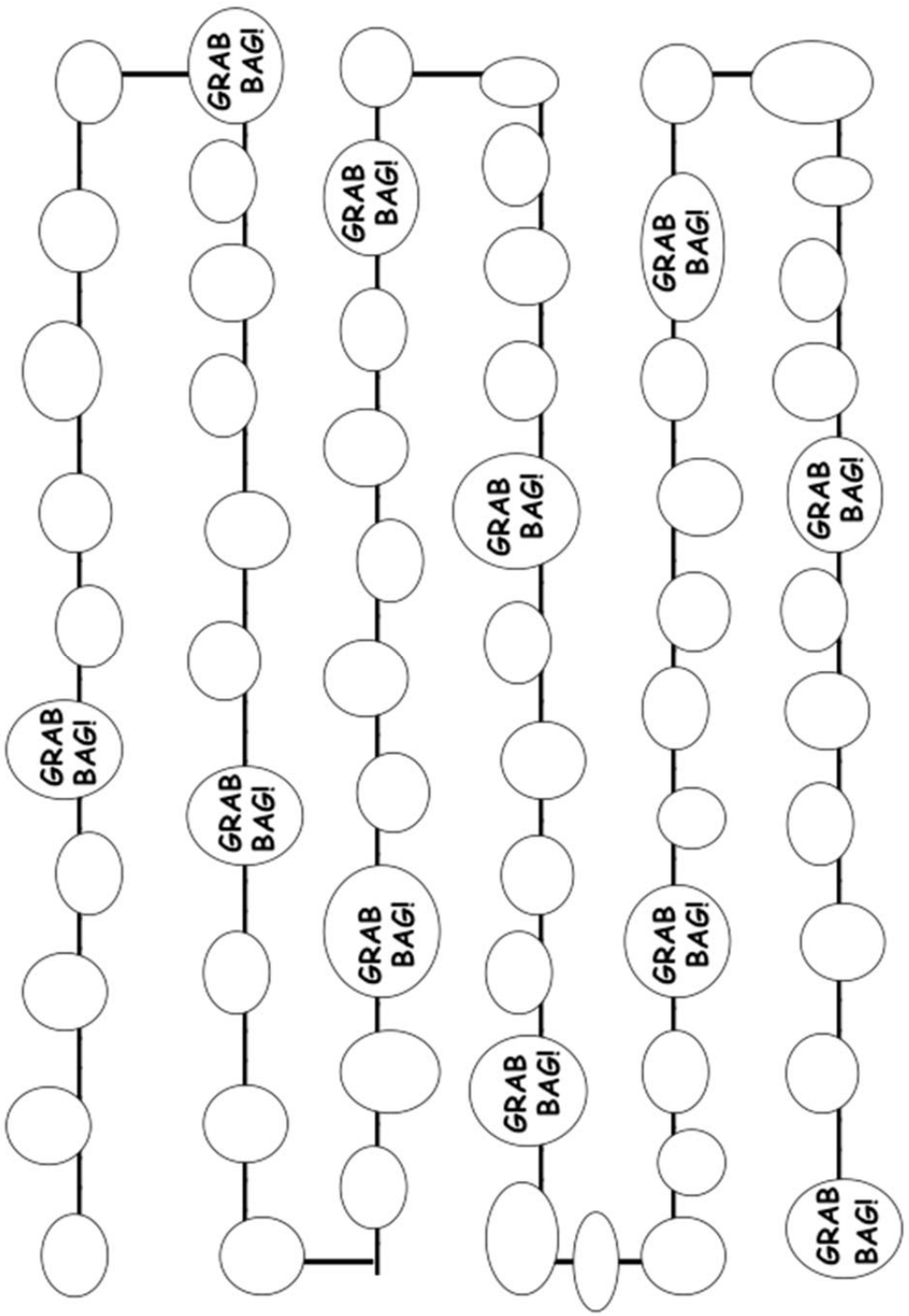
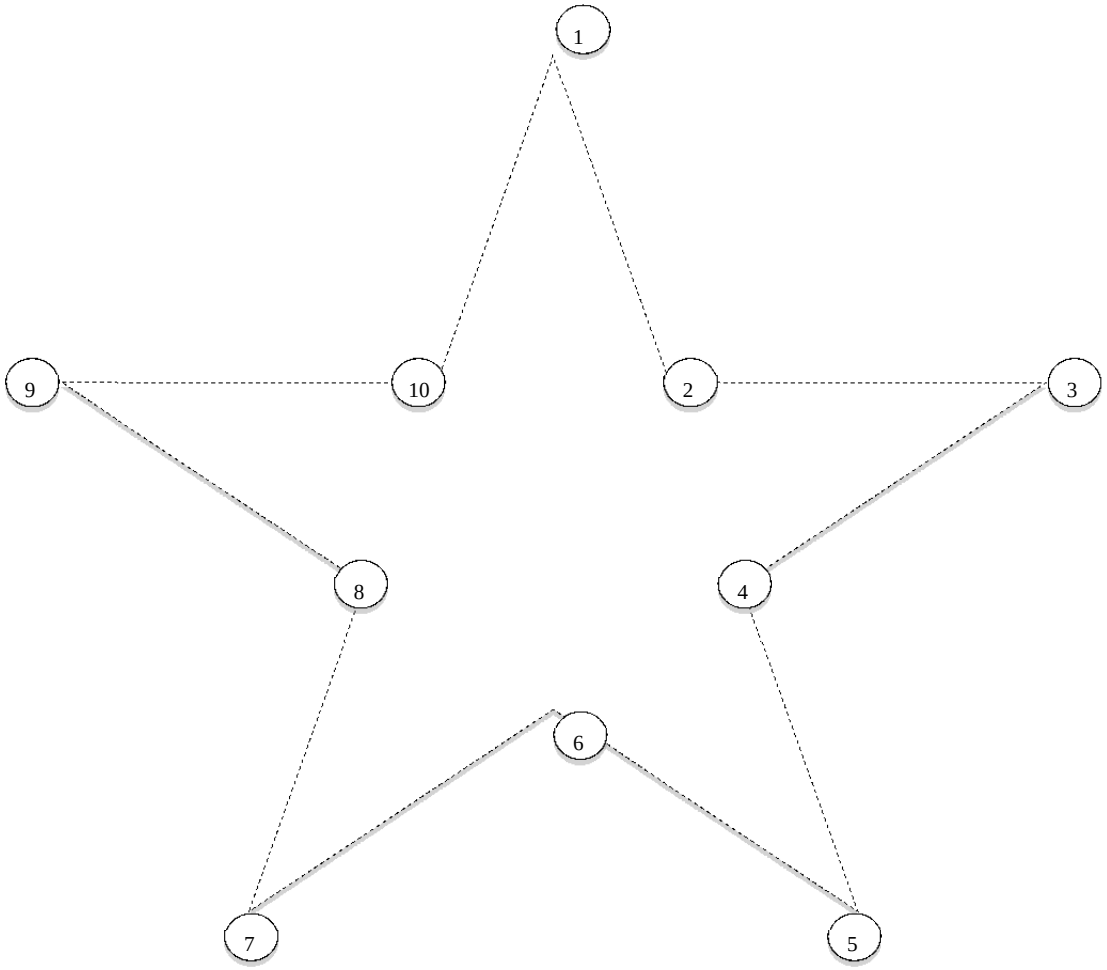
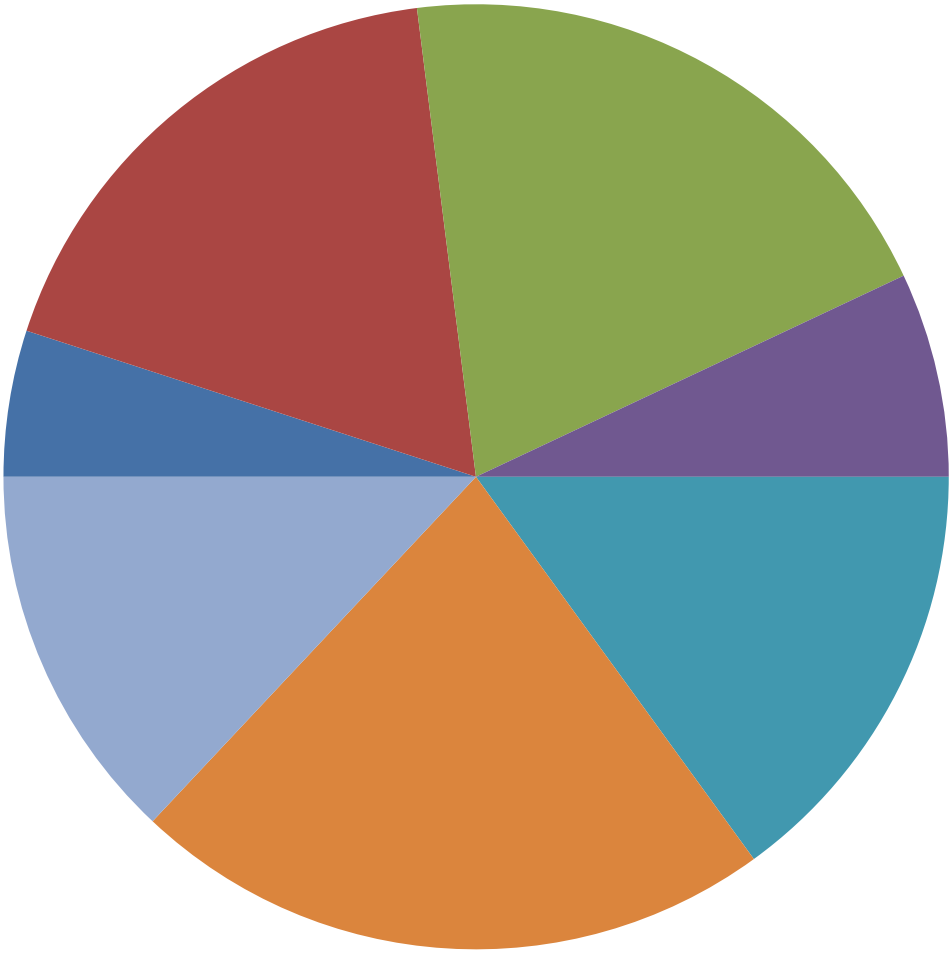


Chart Moves





Reward Spinner

Parents as Tutors:
Partnering to Improve Oral Reading Fluency



Appendix C

Adherence and Quality of Parent Training

- Record the appropriate score for each component of the plan in the box.

Component	0	1	2
Welcome and Introduction to Meeting ☐	The teacher did not welcome or thank the parent and child for attending the session or review the purposes for the meeting.	The teacher either did not welcome or thank the parent and child for attending OR did not review the primary purposes of the meeting (a) review tutoring strategies, (b) develop plan, (c) practice plan, (d) identify ways to keep in communicate about progress.	The teacher welcomed or thanked the parent and child for attending and reviewed the primary purposes of the meeting (a) review tutoring strategies, (b) develop plan, (c) practice plan, (d) identify ways to keep in communicate about progress.
Discuss individual goals of tutoring ☐	The teacher did not involve parent or child in discussion of tutoring goals (i.e., why they want to practice reading together).	The teacher involved the parent and child in discussion of tutoring goals (i.e., why they want to be involved in tutoring), but did not praise the stated goals.	The teacher involved the parent and child in discussion of tutoring goals (i.e., why they want to be involved in tutoring) and praised the stated goals.
Review the Tutoring Strategies ☐	The teacher did not review the tutoring strategies with the parent.	The teacher reviewed the tutoring strategies, but did not involve the parent in the discussion and/or ask if the parent had questions. The conversation was characterized by the teacher telling the parent information—not interactive.	The teacher reviewed the tutoring strategies and actively involved the parent in the discussion and/or asked if the parent had questions. The conversation was characterized by two-way exchange of information—interactive.
Plan Development ☐	The parent and teacher did not select strategies or finalize a tutoring plan following the provided guidelines.	The parent and teacher selected strategies and finalized a tutoring plan following the provided guidelines. However, parent involvement is limited.	The parent and teacher selected strategies and finalized a tutoring plan following the provided guidelines. Parent and teacher are actively involved and collaboratively develop the plan.
Plan Practice ☐	The parent did not practice the plan with the child.	The parent practiced the plan with the child and the teacher provided feedback on steps completed and not completed as well as quality of implementation; however, the practice did not continue until the parent implemented the plan as intended (i.e., 85% of steps completed with a score of 2).	The parent practiced the plan with the child and the teacher provided feedback on steps completed and not completed as well as quality of implementation. Practice continued until the parent implemented the plan as intended (i.e., 85% of steps completed with a score of 2).
Plan for Ongoing Communication ☐	The teacher and parent did not create or agree on a plan for ongoing communication.	The teacher and parent created and agreed on a plan for ongoing communication, but contact information was not exchanged.	The teacher and parent created and agreed on a plan for ongoing communication and contact information was exchanged.
Collaboration throughout the Meeting ☐	The teacher did not actively engage the parent throughout the meeting or provide praise for positive parent and child behaviors. Communication was one-sided.	The teacher actively engaged the parent throughout the meeting by asking questions and encouraging sharing. Provided praise for positive parent and child behaviors.	The teacher actively engaged the parent throughout the meeting by asking questions and encouraging sharing. Provided specific praise for positive parent and child behaviors and incorporated parent ideas into plan development.

Appendix D

Sample Adherence and Quality of Parent Tutoring

- Record the appropriate score for each component of the plan in the box.

Component	0	1	2
Repeated Readings ☐	The student did not read the passage more than one time.	The student read the passage 2 times.	The student read the passage at least 3 times.
Correcting Mistakes (word supply) ☐	The parent did not correct words read incorrectly by the child.	The parent stated the correct pronunciation for words the child read incorrectly, but did not have the child read the words correctly.	The parent immediately stated the correct pronunciation for words the child read incorrectly and had the child read the words correctly.
Correcting Mistakes (word practice) ☐	Following the reading, the parent did not correct words read incorrectly by the child.	Following the reading, the parent stated the correct pronunciation for words the child read incorrectly, but did not have the child practice reading the words correctly three times.	Following the reading, the parent stated the correct pronunciation for words the child read incorrectly and had the child read the words correctly three times.
Correcting Mistakes (phrase practice) ☐	Following the reading, the parent did not correct words read incorrectly by the child.	Following the reading, the parent stated the correct pronunciation for words the child read incorrectly, but did not have the child practice reading the words correctly within the phrase three times.	Following the reading, the parent stated the correct pronunciation for words the child read incorrectly and had the child read the words correctly within the phrase three times.
Correcting Mistakes (syllable-by-syllable practice) ☐	Following the reading, the parent did not correct words read incorrectly by the child.	Following the reading, the parent stated each syllable in the words the child read incorrectly and blended the syllables together to form the word, but did not have the child practice reading the syllables and words correctly.	Following the reading, the parent stated each syllable in the words the child read incorrectly and blended the syllables together to form the word and then had the child practice reading the syllables and words correctly.

Feedback (Pre-check/ Post-check) ☐	The parent did not time the child reading or graph performance with the child.	The parent timed the child reading and graphed performance, but did not use specific praise and/or there was not high contrast (e.g., not change in voice tone, lack of enthusiasm).	The parent timed the child reading, graphed performance, and used specific praise and/or there was high contrast (excitement, sincere).
Feedback (Reward) ☐	The parent did not provide the reward contingent on the goal set for reading improvement.	The parent provided the reward contingent on the goal set for reading improvement, but did not use specific praise and/or there was not high contrast (e.g., not change in voice tone, lack of enthusiasm).	The parent provided the reward contingent on the goal set for reading improvement, and used specific praise and/or there was high contrast (excitement, sincere).
Show ☐	The parent did not read the passage aloud to the child prior to having the child repeatedly reading the passage.	The parent read the passage aloud to the child prior to having the child repeatedly reading the passage, but reading was not at a comfortable pace and/or lacked proper expression.	The parent read the passage aloud to the child at a comfortable with proper expression prior to having the child repeatedly read the passage.
Flashcard Word Practice ☐	Following the reading, the parent did not have the child practice words read incorrectly more than once on flashcards.	Following the reading, the parent presented the words read incorrectly more than once on flashcards, but did not model correct pronunciation for each new word, did not correct mistakes, and/or did not have the child read all of the words correctly before continuing with tutoring.	Following the reading, the parent presented the words read incorrectly more than once on flashcards by modeling correct pronunciation for each new word, correcting mistakes, and having the child read all of the words correctly before continuing with tutoring.
Discussion (Before and After) ☐	The parent and student did not discuss the passage.	The parent and student discussed the passage, but the parent did not elaborate on the child's responses, encourage the child to use vocabulary from the passage, or encourage the child to respond in complete sentences (i.e., majority of student responses were one word).	The parent and student engaged in a meaningful discussion of the passage. The parent encouraged the child to use vocabulary from the passage and respond in complete sentences.

Appendix E

Student Engagement Observation Form

Student Code: Date of Session: Duration of Tutoring Session:

- Engagement includes: reading aloud, correcting mistakes, asking questions about the text, discussing text, counting words during performance feedback, and making statements regarding graphed performance.
- Non-examples of engagement included problematic behavior such as talk unrelated to text or program, whining, no response or no talking, and disruptions (e.g., answer the phone, going to get materials).
- Record whether or not the student is engaged in tutoring at 10-s intervals using momentary time sampling. If the student is engaged make an "X" in the box. If the student is not engaged, make an "O" in the box.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108
110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145
146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163
164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181
182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199
200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217
218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235
236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253
254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271
272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289
290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307

Number of intervals student was engaged _____/Total number of intervals scored_____*100= _____Percentage of intervals student was engaged during the tutoring session

Appendix F

Baseline Reading Practice Log

Reading Log

Each time you have your child practice reading at home, write the date, number of minutes you practiced, and any notes you might have. This will help us to see how students usually practice reading.

Date	Minutes of practice	Comments or Notes

Appendix G

Tutoring Plan Form

Our Reading Practice Plan

☐ Why do you want to practice reading together?

Parent:_____

_____

Child:_____

_____

☐ How many times per week will you practice reading using the program (at least 3 days per week)?

_____ days M T W Th F S Su

☐ What time will you practice reading (not tired or busy)?

____:_____

☐ Where will you practice reading (quiet location with few distractions and little clutter)?

_____

☐ Check the Strategies you will use in tutoring:

Strategies	How it helps
☑ Repeated Reading	Practicing reading gives children opportunities to practice reading fluently and increases success with reading
☑ Correcting Mistakes ☐ Word Supply ☐ Word Practice ☐ Word and Phrase Practice ☐ Syllable Segmentation	Fixing mistakes and practicing words correctly helps children to learn to read the words better. Perfect practice makes perfect! Error correction decreases the likelihood students will make the same errors again.
☑ Feedback ☐ Provide feedback based on progress from pre- to post-reading practice ☐ Provide a reward contingent on meeting a goal number of words read correctly	Giving feedback helps to motivate children to do their best and allows the child see how practice helps.
☐ Show	Modeling reading shows children what fluent reading sounds like and decreases the likelihood students will make lots of errors.
☐ Flashcard Word Practice	Practicing reading words gives children opportunities to practice with hard words found in a story and increases the likelihood students

	will read words correctly the next time.
☐ Discussion	Talking about stories helps children to build comprehension and vocabulary skills. Children gain a better understanding of what is read.

☐ What will the plan look like? List the steps in order:

Step	Things to keep in mind
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	

How will you keep in touch?

- ☐ Notes
- ☐ Phone Calls
- ☐ Email
- ☐ Meetings

How frequently will you discuss the plan and reading progress?

_____

When will you meet next? _____

What will you do when you meet?

_____