

2-22-2005

The Impact of Peer Tutoring and Self-Monitoring on Oral Reading Fluency for Children who Exhibit Symptoms of Attention-Deficit/Hyperactivity Disorder

Shannon M. Leis
University of South Florida

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The Impact of Peer Tutoring and Self-Monitoring on Oral Reading Fluency for Children
who Exhibit Symptoms of Attention-Deficit/Hyperactivity Disorder

by

Shannon M. Leis

A thesis submitted in partial fulfillment
of the requirements for the degree of
Education Specialist
Department of Psychological and Social Foundations
College of Education
University of South Florida

Major Professor: Kelly A. Powell-Smith, Ph.D.
Members: Kathy L. Bradley-Klug, Ph.D.
Linda Raffaele-Mendez, Ph.D.

Date of Approval:
February 22, 2005

Keywords: ADHD Predominantly Inattentive Type, second grade students, self-graphing,
curriculum-based measurement, academic interventions

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The Impact of Self-Monitoring and Peer Tutoring on Oral Reading Fluency for Children who Exhibit Symptoms of Attention-Deficit/Hyperactivity Disorder

Shannon M. Leis

ABSTRACT

This study examined the effects of peer tutoring and self-monitoring interventions on the oral reading performance of students exhibiting symptoms of Attention-Deficit/Hyperactivity Disorder: Predominantly Inattentive Type. A multiple baseline across participants design was used to evaluate the effectiveness of the peer tutoring and self-monitoring interventions with four second grade students who were tutored by fourth grade students. Results indicated that the median number of words read correct per minute as measured by curriculum-based measurement reading probes increased from baseline to intervention phases for three of the four tutee participants. In addition, the median number of errors from baseline to intervention phases decreased for three of the four participants. However, data were highly variable for three of the four participants. In addition, the percentage of intervention data points that overlapped baseline data was higher than the percentage of non-overlapping data points. Consumer satisfaction was rated positively by tutee and teacher participants. All tutee participants rated peer tutoring as a fair intervention and agreed that this intervention would help them do better in school. In addition, teacher ratings indicated that peer tutoring was an acceptable and beneficial intervention for students. The teachers reported that they liked the procedures used in this intervention. Teacher ratings also indicated that these teachers would

recommend this intervention to other teachers and would implement this intervention with other students. These teachers also strongly agreed that this intervention would be appropriate for a variety of students. Implications for future research and practice are discussed.

Chapter One

Introduction

Attention-Deficit/Hyperactivity Disorder (ADHD) is a behavior disorder characterized by inattentive, hyperactive, and impulsive behaviors. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000) to be diagnosed with ADHD, an individual must exhibit six or more symptoms of inattention and/or hyperactivity-impulsivity for at least six months in which impairment is evident in social, academic, or occupation functioning across two or more environmental settings. Symptoms of inattention include poor attention to detail, difficulty sustaining attention, failure to complete tasks, disorganization, losing things necessary to perform tasks, easily distracted, and often forgetful (American Psychiatric Association, 2000). Symptoms associated with hyperactivity include fidgeting, leaving seat often in situations in which an individual is expected to remain seated, running or climbing around in inappropriate situations, difficulties in quietly engaging in leisure activities, and talking excessively. Impulsivity symptoms involve frequent blurting out when it is not the individual's time to give verbal responses, difficulty waiting patiently, and interrupting others or intruding upon others (American Psychiatric Association, 2000).

Students typically spend 6 hours per day, 5 days per week, for 9 months out of the year in school. Classroom environments require students to be able to sit quietly for sustained periods of time. Thus, children diagnosed with ADHD who have difficulties sitting still quietly and focusing their attention face several challenges in the school

environment as compared to a typical child. The prevalence of children diagnosed with ADHD in the school system is approximately 3% to 7% (American Psychiatric Association, 2000). Children diagnosed with ADHD experience difficulties in completing tasks in comparison to their peers. They typically complete fewer assignments with less accuracy than their classmates. As these children develop into adolescents, their rate of school dropout and suspension is significantly higher than among their peer counterparts (DuPaul & Stoner, 2003). Children who experience problems attending to tasks are often poor test takers, have problems listening to teachers' lectures and group discussions, are disorganized, and lack sufficient study skills. These children often make careless mistakes in their assigned tasks as a result of their impulsive responses to tasks (DuPaul & Stoner, 2003).

Association between ADHD and Academic Problems

Academic deficits. Students diagnosed with ADHD can be separated into two categories: those that exhibit academic skills deficits and those with academic performance deficiencies (DuPaul & Stoner, 1994). Academic skills deficits occur when students lack the abilities needed to learn academic subject matter as it is currently taught (DuPaul & Stoner, 1994). For example, a child has difficulty reading a story fluently when encountering unknown words because the decoding skills necessary to learn unfamiliar words are lacking. In contrast, academic performance deficiencies involve the ADHD student's inability to complete academic tasks due to impulsive, inattentive behaviors even though the child possesses the necessary skills (DuPaul & Stoner, 1994). For example, a child may have difficulty remaining seated to complete a written assignment although the child has the necessary skills to complete the writing

assignment. According to DuPaul and Stoner (2003), of children diagnosed with ADHD, between 20 to 30 percent are classified as learning disabled. In addition, the majority of children diagnosed with ADHD will exhibit academic underachievement likely due to incompleteness of assigned tasks and/or inaccurate responses to assignments and tests (DuPaul & Stoner, 2003).

Academic underachievement. Studies investigating the academic achievement of children with ADHD show that these children are more likely to receive lower grades in academic subjects and lower scores on standard measures of reading and math than children without disabilities (Saunders & Chambers, 1996). More than 80% of 11 year-olds diagnosed with ADHD were reported as behind by at least 2 years in reading, spelling, math, or written language (Anderson, Williams, McGee, & Silva, 1987). More than half of the children with ADHD taught in general education classrooms will experience failure in school, or be retained in at least one grade by adolescence, and more than one third will not complete high school (Weiss & Hechtman, 1986). In a study conducted by Rowe and Rowe (1992), inattentiveness was found to have strong negative influences on students' reading achievement. Their findings indicated that inattentiveness may have a stronger influence on reading achievement than other factors such as socioeconomic status. Fergusson and Horwood (1992) examined the possible reciprocal relationship between attention deficits and reading achievement. The results of this investigation support the notion that an attention deficit has a significant effect on a child's reading achievement.

Rationale for the Study

With the many challenges students with ADHD face in the classroom settings, effective interventions must be implemented to assist these children in becoming academically successful. Several empirical studies provide evidence for behavioral interventions used in the classroom to decrease inattentive, impulsive, and hyperactive behaviors among students diagnosed with ADHD. However, much less research has been published regarding interventions that address the academic performance outcomes of students with ADHD. The purpose of the study is to determine whether elementary aged children exhibiting symptoms of ADHD, Predominantly Inattentive Type, who engage in self-monitoring and peer tutoring strategies in reading will improve their reading achievement compared to baseline conditions. Baseline conditions will consist of the reading instruction these students typically receive in their classroom environment.

Research Questions

The following research questions will be addressed:

1. Does peer tutoring combined with self-monitoring strategies in the general education classroom improve oral reading fluency for elementary-aged children exhibiting symptoms of ADHD, who are identified as low-achievers in reading?
2. Do teachers find peer tutoring to be effective and acceptable interventions for children exhibiting symptoms of ADHD in the general education classroom?
3. Do students find peer tutoring to be effective and acceptable for improving their reading performance?

Chapter Two

Literature Review

This literature review will provide a summary and critique of the empirical research available regarding academic interventions that impact the academic performance of students with ADHD. Academic interventions are school-based interventions that focus on manipulating antecedent conditions (e.g., academic instruction, academic materials) (DuPaul & Eckert, 1997). DuPaul and Stoner (1994) suggested that interventions should primarily focus on increasing appropriate behaviors such as academic productivity and accuracy versus simply decreasing disruptive behavior. This literature review will focus on self-management and peer tutoring strategies, and the research supporting the impact of these strategies on the academic performance of students diagnosed with ADHD.

Self-management

Self-management interventions involve strategies that incorporate self-monitoring, self-reinforcement, and/or self-instruction (Barkley, 1998). Using these strategies, behavioral and academic performance can be evaluated separately. In self-monitoring, students are trained to observe and record their own behaviors (DuPaul & Stoner, 2003). Self-reinforcement requires students to evaluate and reinforce their own behaviors. Self-instruction involves teaching students the steps of “stop, look, and listen” to incorporate while they complete tasks. During this process, students initially receive reinforcements from trainers until the child self-initiates reinforcers (e.g., praise). Self-monitoring and self-reinforcement strategies have been somewhat successful with

students diagnosed with ADHD (Barkley, 1998). Self-instruction, when used by itself, has demonstrated minimal success among children with ADHD (Barkley, 1998).

Studies implementing self-management strategies. In a study conducted by Edwards, Salant, Howard, Brouger, and McLaughlin (1995), the impact of self-management on attention to task and reading comprehension of children diagnosed with ADHD was examined. Participants in this study included three male elementary-aged students diagnosed with ADHD, who spent the majority of their school day in a general education classroom. The teachers and teacher assistants were trained to observe and record their observations of participants' on task behavior during 20-minute reading lessons. Interobserver agreement among the teachers and aides was obtained prior to implementing observations and self-management procedures. An interscorer agreement criterion of 90% was met at that time. Self-management procedures involved teachers and students recording on task behavior when prompted by a tone at variable intervals averaging one minute. The teachers trained these students to ask themselves whether or not they were paying attention when prompted by the tone. During 20-minute reading lessons, the students were informed to record their responses to this question by writing a plus sign for on task behavior and a minus sign for off-task behavior on a card taped to their desks. Participants earned points for on-task behavior and reading comprehension accuracy. Earned points were exchanged for privileges determined by the teachers and students.

Edwards et al. (1995) used an ABABC with a follow-up single participant design. Baseline conditions consisted of the typical classroom routine during 20-minute independent work time on reading lessons and comprehension of reading passages.

During Baseline 1, a tape-recorded tone was played for teachers and aids to record participants' on-task behavior for a period of 2 weeks, students were told to ignore the tone. Next, students were trained by their teachers on the self-management procedures described above for a period of one week. Students were trained to self-manage attention to task by responding to pre-recorded tone prompts. Once participants reached 90% accuracy in self-recording, self-management procedures were implemented for a period of three weeks during reading lessons. Following the self-management procedures, the classroom returned to baseline conditions for two weeks. During Baseline 2, the teachers and aides continued to record their observations of on-task behavior. At this time, the tone was heard only by the teachers and aides. After this time, self-management procedures and fading was implemented for a period of three weeks. Fading involved gradually increasing the time of intervals in which the tone sounded, therefore decreasing the frequency of student's self-recording. Upon completion of the self-management phase, follow-up probes 1 & 2 were administered at one-month intervals.

Reading comprehension was measured by the percentage of correct responses on the comprehension exercises. Comprehension exercises consisted of 10 questions related to a passage or short story the students read. The questions entailed various forms such as cloze passages, fill-in-the-blanks, matching, or sequencing activities. The results of this study indicated that participants improved their reading comprehension during the self-management phases. On the reading comprehension exercises, participant 1 earned a mean score of 10% during Baseline 1 conditions, a mean score of 52 % during self-management, a mean score of 21% during return to baseline conditions, and a mean score of 38% during the self-management + fading phase. Participant 2 earned a mean score of

19% during Baseline 1, a mean score of 57.3% during self-management, a mean score of 40% during Baseline 2, and a mean score of 58.6% during self-management + fading.

Participant 3 earned a mean score of 33% during Baseline 1, a mean score of 79.3% during self-management, a mean score of 49% during Baseline 2, and a mean score of 72% during self-management + fading.

In addition to improved reading comprehension among the 3 participants in this study, on-task behavior also improved during self-management and self-management + fading compared to the baseline conditions. All 3 participants increased on-task behavior by an average of 37.5% from Baseline 1 to self-management + fading. This study provides empirical evidence that self-managing on task behavior in combination with a reward system increased attention to task and improved reading comprehension among these children diagnosed with ADHD.

Despite the positive outcomes of this study, several limitations exist. For instance, a variety of reading comprehension exercises were used in this study which may play a role in the varied levels of the participants' improvements in reading comprehension. Future studies considering self-management and reading comprehension may consider using a standard format for the reading comprehension exercises. Also, fading procedures may need to be individualized to have the most powerful impact such as more gradual fading. For instance, participant 1 showed a decrease in on-task behavior during self-management + fading as tones were faded. More gradual fading procedures may have resulted in higher levels of maintaining on task behavior for this participant. The authors concluded that future studies should consider individual variations of treatment characteristics to maximize the benefits of self-management. Additionally, future

research should examine the impact of self-management procedures without rewards or incentives. The authors suggested that pairing self-management with self-monitoring using graphs or self-developed goals may have a greater impact than incentives. Lastly, results from teacher interviews showed that the point system was found to be time-consuming and suggested that rewards/incentives systems should be simpler.

Ajibola and Clement (1995) incorporated goal setting along with self-monitoring and self-reinforcement strategies to determine the effects of these strategies on academic performance. In this study, six male participants aged 9 to 12 years of age with symptoms of ADHD participated in a 30-minute tutoring class for reading. Each day, the participants set goals for the number of reading questions they would answer and signed a performance contract. Whenever the students answered a reading question, they would give themselves a point on their wrist counters. The students received stamps when the number of points earned matched or exceeded the performance goal. At a later time, the stamps could be exchanged for backup reinforcers. This study focused on the amount of questions answered versus the accuracy of the answers. The results of this study showed that self-reinforcement procedures improved the amount of academic performance. However, Ajibola and Clement (1995) found that the combination of self-management strategies and stimulant medication provided the greatest improvement in the amount of academic performance.

It is important to note that Ajibola and Clement's (1995) study focused on the amount of questions participants answered completely. Students were reinforced for the number of reading questions each answered; accuracy of responses was not reinforced. This procedure raises concerns because participants may have made careless responses to

questions to increase opportunities for reinforcement. In the classroom setting, academic productivity is equally important as accuracy. Additionally, this study was conducted in a separate classroom in the morning prior to school starting. The participants were the only students in the classroom during these sessions. Because these conditions do not reflect conditions in a typical classroom setting, generalizing the effectiveness of these procedures for students in typical classroom conditions is unknown. During baseline and throughout all the experimental phases, students were paid one dollar each for each day they attended the sessions. Additionally, a response-cost program was implemented in which participants were fined 10 cents for engaging in any of the following behaviors: arriving late to a session, destroying classroom property, physical aggression towards others, and leaving the classroom once the session began. With the combination of self-management strategies and the response-cost program, the specific effects of the response-cost program on students' academic performance are unknown. Therefore, it is also difficult to determine to what degree self-management procedures alone impacted students' academic performance.

Shapiro, DuPaul, and Bradley-Klug (1998) studied the impact of a cognitive-based self-management strategy from the work of Rhode, Morgan, and Young (1983), which combines self-monitoring and self-evaluation techniques. Procedures used by Rhode et al. (1983) included the following five phases: baseline conditions, teacher management, matching, fading to self-management, and complete self-management. Baseline conditions consisted of identification of target behaviors either academic, non-academic, or both. A numerical scale was developed to rate student performance of these behaviors within a specified period when the intervention was implemented. The scale

ranged from 1 “poor” to 5 “excellent.” The specified period was then divided into equal intervals. The teacher rated student performance of behavior at the end of each interval, and this information is not shared until the teacher management phase (phase 2).

During the teacher management phase, the teacher informed the student of his/her rating at the end of each interval. The rating was transferred to points which in turn could be exchanged for rewards that the student picked from a reinforcement menu developed by the student and the teacher. The teacher ratings were graphed and provided to the student. Once the student reached desirable ratings for approximately 3 to 4 consecutive school days, the student moved onto the matching phase.

During the matching phase, the student rated his or her own behavior at the end of each interval while the teacher also continued to rate the student’s behavior. These ratings were compared with one another. If these ratings matched exactly, then the student earned the number of points equivalent to the rating plus an additional bonus point. For example, if both the student and teacher rated the behavior a “4,” the student earned 5 points. If the student’s rating differed from the teacher’s rating by 1 point, the student earned the number of points equivalent to his/her rating provided by the teacher. For example, if the child earned a “3” rating by the teacher and the child rated him/herself a “4”, then he/she would earn 3 points. When the student’s rating differed from the teachers’ rating by more than 1 point, the student received zero points for that interval. When a discrepancy existed between the student’s and teacher’s rating, the teacher provided a brief explanation to the student. This explanation was provided to assist the student in becoming a more accurate judge of his/her behavior in relation to the teacher’s perception.

The fourth phase involved fading to self-management, which consisted of the fading of both the frequency of student and teacher rating comparisons and available backup reinforcers. To reduce the frequency of rating comparisons, the amount of opportunities to earn bonus points lessened. More specifically, the intervals in which the student had the opportunity to earn bonus points were reduced by 25% beginning with 100% of the intervals providing this opportunity to 75%, then 50%, and so on, until matching no longer occurred. To achieve this reduction in opportunities, at the end of each interval, the teacher presented the student with red and black playing cards beginning with 3 red cards and 1 black card. The student was prompted by the teacher to randomly draw a card. The red cards resulted in rating comparisons or matches for bonus points; the black cards resulted in the student receiving the number of points from his/her self-rating, without comparing with the teacher's rating. Gradually, the teacher replaced the number of red cards with black cards resulting in a shift from 100% matching opportunities to zero.

Simultaneously as a reduction in matching opportunities occurred, the duration of the intervals gradually increased. For instance, if the initial interval was 10 minutes in duration, the interval would be increased to 15 or 20 minutes until only one rating occurred at the end of the specified academic period, which would eventually be moved to the end of the day, to every other day, or to the end of the week. As a result, the time it took a student to earn enough points for backup reinforcers increased, while the frequency of earning these reinforcers decreased; therefore, fading to self-management. During this phase, the teacher randomly implemented "surprise matches" in which student and teacher ratings were compared for the student's opportunity to earn bonus

points. These surprise matches were designed to maintain student performance as the student progressed towards complete self-management.

The final phase of these procedures developed by Rhode et al. (1983) was referred to as complete self-management. Complete self-management was achieved when the student reached the level of desirable behavior using self-ratings without any comparison matches with the teacher ratings. Progression to complete self-management resulted in complete removal of the rating system and backup reinforcers. During this phase, self-evaluation procedures were gradually faded to facilitate maintenance of the student's self-managed behavior. Self-evaluation procedures consisted of oral versus written reports of student ratings at the end of specified periods. No teacher rating matches occurred at this time. Next, oral ratings were faded to more covert ratings in which the teacher prompted the student to think of their performance over a specified time period.

Shapiro et al. (1998) altered the procedures used by Rhode et al. (1983) by changing the rating system to a yes/no format. In the Shapiro et al. (1998) study, teachers identified five desirable, target behaviors (three or four that the student was not demonstrating prior to the self-monitoring intervention and one or two that the student was currently engaging in). "Yes" responses were given point values; 1 point per "yes" response for behavior occurrence during the rating interval. A "4" rating would be given if the student engaged in 4 of the target behaviors.

Participants in the Shapiro et al. (1998) study included two adolescent, male students identified with a learning disability and ADHD. For student 1, the teacher identified the following 5 target behaviors: having all materials needed for the lesson, attending to task, not talking to peers, using appropriate language, and raising his hand to

be called upon. The self-monitoring procedures described above were implemented during a 45 minute social studies class period, beginning in 15 minute intervals for the teacher management and matching phases. Then, fading procedures were implemented which gradually led to complete self-management.

Additionally, data were collected from teacher reports using the ADHD Rating Scale (DuPaul, 1991) and the Conners Teacher's Rating Scale-Revised (CTRS-R; Goyette, Conners, & Ulrich, 1978). Data were obtained from the CTRS-R both before and after the intervention was implemented. The ADHD Rating Scale was completed by teachers after the first four phases of the intervention were implemented. Systematic direct observations of the student's on-task behavior were conducted for three of the social studies class periods.

Results for student 1 demonstrated improvements in the student's behavior during the teacher management phase, which continued at or above this level during the matching phase. Data collected during direct observations showed improvements in the student's on-task behavior from 75% of the intervals observed during baseline conditions to 100% during implementation of the self-monitoring intervention. Data collected from the CTRS-R showed reductions on the Hyperactivity and Attention Indices with scores on the additional indices falling within the average range. Data obtained from the ADHD Rating Scale demonstrated improvements on the Inattention, Impulsivity, and Total scales.

For student 2, the following five behaviors were targeted: being prepared for class, completing homework, following instructions the first time given, staying on task, and completing classroom assignments. The same procedures described earlier were used

when implementing the intervention. Data were collected from the CTRS-R before and after intervention implementation. Additionally, data were obtained from teachers using the Child Attention Profile (Barkley, 1990) after the first four phases of the intervention was conducted. Systematic direct observations of on-task behavior were also conducted during three of the social studies class periods. Results for student 2 showed improvements in academic performance and on-task behavior during the self-monitoring intervention. Improvements in inattentive behavior were demonstrated in reduced scores on the Child Attention Profile and the CTRS-R.

One limitation regarding the use of self-management techniques involves the practicality of implementing these techniques in the naturally occurring classroom setting. Additionally, teachers may perceive the self-monitoring intervention as too time-consuming to implement. Because teachers' acceptability of interventions can have a significant impact on treatment fidelity, it is critical that such issues be addressed. One way to address these concerns is to provide teachers with detailed descriptions of intervention procedures. School psychologists can provide teacher training on self-monitoring interventions which should include modeling and/or demonstrating the procedures to be used. Also, an understanding that an initial investment of time for learning and implementing the intervention will lead to decreased teacher time spent addressing academic performance and/or behavioral concerns that the student will learn to manage him/herself. Providing teachers with empirical evidence regarding the effectiveness of self-management techniques may also facilitate teachers' acceptance of these interventions. Lastly, self-management procedures provide students the opportunity to become actively involved in their education.

Studies have also shown that self-monitoring academic accuracy and productivity simultaneously has beneficial effects for all of the target behaviors observed, as well as improved on-task behavior. Shimabukuro, Prater, Jenkins, and Edelen-Smith (1999) studied the impact of self-monitoring both productivity and accuracy on the academic performance of students with learning disabilities diagnosed with attention-deficit/hyperactivity disorder (ADHD) across the following three academic areas: reading comprehension, mathematics, and written expression. Observations of on-task behavior were also recorded by both the classroom teacher and the classroom assistant teacher. The participants were three males in the sixth and seventh grade that attended a private school for students with learning disabilities. Self-monitoring procedures were implemented in a self-contained, mixed grade classroom which consisted of 17 students from the sixth through eighth grade. Instruction of self-monitoring procedures was provided by the classroom teacher, certified in special education. A single group, multiple baseline design across academic areas (reading, math, and written expression) was used to determine the effectiveness of this self-monitoring intervention on the academic performance of three students.

Instruction of self-monitoring procedures was provided by the classroom teacher, certified in special education. Self-monitoring instruction involved the teacher instructing the entire class in computing scores for class assignment completion (i.e., number of questions completed from the total number of questions provided) into percentages using calculators. The teacher demonstrated several examples of possible student scores. Next, the teacher demonstrated how to record these scores on a graph on an enlarged graph presented on the chalkboard. Scores were graphed as data points using bullets and lines

were drawn to connect the data points demonstrating the trend in performance. Then, the teacher had the students practice computing accuracy scores as percentages (number of questions answered correctly from the total number of questions completed). Additionally, these scores were also graphed sequentially as data points on the chalkboard graph using small x's and connecting these data points to demonstrate student progress.

Baseline conditions for each academic area consisted of the teacher computing and recording the student's academic performance (both accuracy and productivity) across all three academic areas. Additionally, the teacher and teacher's assistant collected data regarding the on-task behavior of these three students' by conducting systematic behavior observations using behavioral recording sheets. Behavior observations of students were conducted for 10 minutes during each of the three academic periods using a 10-second time sampling procedure. Baseline observational data were collected over a period of four days during all three academic periods. Interobserver agreement was assessed every fourth day of the experiment. Interobserver reliability was computed by dividing the number of agreements for on-task behavior between both observers (teacher and teacher assistant) by the total number of observations.

During implementation of the intervention phase, students corrected their completed assignments as the teacher provided correct responses orally to the class. Next, the students computed their accuracy and productivity scores as described above. Once the scores were computed, the students graphed their scores as data points on progress graphs for each academic period. The teacher monitored student accuracy in reporting

and graphing scores by circulating among the students while they computed and graphed their scores.

Results of the Shimabukuro et al. (1999) study indicate that self-monitoring improved academic productivity and accuracy as well as on-task behavior for all three students across all three academic areas. More specifically, improvements of academic productivity were greater than improvements in academic accuracy, and academic productivity gains were higher in reading comprehension and math than in written expression. Additionally, improvements in on-task behavior were greater in math and reading than in written expression. This may partially be due to the difference in small group versus large group instruction.

When reviewing the findings of this study, the following important limitations should be considered. Because this study was conducted in a restricted setting, a self-contained classroom in a private school for students with learning disabilities, generalization of these findings across settings was not considered. Additionally, results of this study could be influenced by experimenter bias because the classroom teacher implemented the intervention and observed behavior without the involvement of an outside observer. Formal measures of social validity were not included in this study. Information obtained from the teacher and students involved would be helpful in understanding their perceptions of the effectiveness of the self-monitoring intervention. Lastly, a checklist to monitor the integrity of intervention implementation would provide a systematic means for assessing treatment integrity.

Peer Tutoring

Peer tutoring is an instructional strategy that has empirical support for its effectiveness with children (DuPaul & Stoner, 1994). According to the literature, peer tutoring is defined as an instructional strategy in which two students pair up with one another (one is the tutor, and one is the tutee) to work together on academic activities. Teachers monitor students' progress and participation through a supervisory role. Three empirically supported peer tutoring programs reviewed extensively in the peer tutoring literature include: classwide peer tutoring (CWPT), peer assisted learning strategies (PALS), and reciprocal peer tutoring (RPT). Classwide peer tutoring programs include the following components within the general education classroom: one-on-one tutoring in which dyad pairs are selected (either randomly or according to matched ability) within a given classroom to include all students in the classroom; group contingencies for reinforcement are implemented based upon points earned within a given dyad or team of dyads; tutors monitor tutees performance and points earned; reciprocal tutoring occurs in which students switch tutor-tutee roles; tutors provide immediate feedback, modeling correct responses as a form of error correction (Greenwood, Maheady, & Delquadri, 2002). Teachers provide initial training for students regarding procedures for presenting academic material, awarding points, and rehearsing tutoring techniques. Teams are designed within the classroom and compete for the total highest points earned. The winning team is determined on a weekly basis and earns social rewards (e.g. applause of peers). Individual student performance and team performance presented in points earned is posted for the entire class to view (Greenwood et al., 2002). Greenwood, Delquadri,

and Carta (1997) have developed a manual of CWPT procedures to guide teachers' implementation (Greenwood, Maheady, & Delquadri, 2002).

Peer-assisted learning strategies (PALS) include similar components of CWPT while adding different elements of peer teaching strategies (Greenwood et al., 2002). PALS reading involves classwide activities that include: partner reading, story retell with partners, paragraph shrinking, and prediction relays (Greenwood et al., 2002). In PALS, dyads are selected by matching high-performing readers with low-performing readers. First, high-performing peers take on the role of tutors, modeling tutor procedures while low-performing peers participate as tutees (Greenwood et al., 2002). After a predetermined period of time, the students switch roles. Reading materials consist of classroom textbook materials, which the teacher may choose to individualize according to level of difficulty for each dyad (Greenwood et al., 2002). Individualized materials focus on the needs of the low-performing readers (Greenwood et al., 2002). Tutees earn points based upon accuracy of performance and cooperative behavior during sessions, which is monitored by the tutor (Greenwood et al., 2002).

Reciprocal peer tutoring (RPT) also includes many similar elements used in CWPT and PALS such as, students participate as both tutors and tutees, a structured format of procedures are implemented, and peers monitor their performance (Greenwood et al., 2002). However, in RPT, students are randomly matched with same-age peers to form tutoring dyads. The current literature reviews RPT as an effective supplemental instructional strategy for math. In RPT, students have four opportunities to respond to problems presented; these four opportunities are identified as Try 1, Try 2, Help, and Try 3 (Greenwood et al., 2002). Tutors present individual math problems on flashcards with

the answer and structured format for corrections provided on the back of the flashcard. The tutee completes the math problem on the provided, structured worksheet. If the tutee's response is accurate, the tutor provides the tutee with verbal praise and continues with the next problem. If the tutee's response is incorrect, the tutor refers to the structured format for providing assistance on the back of the flashcard. Next, the tutee attempts to answer the problem a second time (Try 2). If the tutee fails to complete the problem the second time, a teacher aide is called upon to provide additional coaching using the correct-solution model. The tutee is given the opportunity to solve the problem after receiving this help (HELP). In Try 3, the tutee is given a final opportunity to solve the problem independently (Greenwood et al., 2002). After 10 minutes, students switch tutoring roles. Once a full 20 minute tutoring session ends, students are given a quiz (of 16 math problems) covering the math material taught. Individual student performance is compared to individual predetermined goals. If a student exceeds his/her goal, he/she earns a "win" for the day. After each dyad earns five "wins," the dyad is given a pre-selected reward.

Studies implementing peer tutoring. DuPaul and Henningson (1993) examined the effects of peer tutoring on the classroom performance of a student diagnosed with ADHD. The study involved a seven year-old male diagnosed with ADHD who had never received stimulant medication, nor was he on any stimulant medication at the time the study was conducted. The study was implemented in the participant's second grade, general education classroom during mathematics instruction. Observations of the participant's on-task and fidgeting behaviors were recorded using a modified version of the ADHD Behavior Coding System (Barkley, 1990, as cited in DuPaul & Henningson, 1993). Curriculum-based measurement (CBM) probes were used to assess the

participant's performance in math skills. Each probe assessed mixed math skills consisting of 25 two- and three-digit addition and subtraction math problems. The participant had 2 minutes to complete each math probe. The scoring of the math probes consisted of the number of digits written correctly.

DuPaul et al. (1993) examined the effects of peer tutoring on the participant's classroom performance using an ABAB reversal experimental design. Baseline data were collected during the second grade classroom's typical math instruction, which involved the teacher providing verbal instructions to the entire class, and intermittently selecting students to answer related math problems on the board or at their desks. The teacher-led math instruction was 10-20 minutes in length. After the teacher-led instruction, students were assigned math worksheets related to the math instruction during independent seatwork. As necessary, the teacher provided individual assistance to students during independent seatwork. Throughout the study, observations of the student's (on-task and fidgets) behavior were conducted for 10 minutes during math instruction for at least 3 days per week. Interobserver agreement checks were conducted during 17% of the observation sessions with an overall agreement of 92%. Following the observation sessions, CBM multiple-skill math probes were administered to the participant and randomly selected peers to protect the participant's confidentiality as a research participant. CBM data were collected at a minimum of twice per week throughout the study. During the second phase of this experiment, classwide peer tutoring was implemented. The participant was paired with a second grade peer of above-average math skill level. Tutorial sessions occurred during the same time teacher-led math instruction that typically occurred during the baseline phases. Therefore, peer tutoring in math

replaced teacher-led math instruction during experimental phases. After the initial peer tutoring phase, a return to baseline conditions occurred in which math instruction was teacher-led as previously discussed. After this period of baseline conditions, peer tutoring was reimplemented. To incorporate reinforcers, the class was divided into two teams. At the end of each week during peer tutoring conditions, the team with the most points was declared the winner. Each member of the winner's team could participate in a classwide lottery, in which small toys (reinforcers) were awarded on a random basis.

Results of this study showed that the participant's on-task and fidgets behaviors were variable across the initial baseline condition phase. During the initial peer tutoring condition, the participant demonstrated an increase in on-task behavior and a decrease in fidgeting. As a result of return to baseline conditions, he showed a decrease in on-task behavior, and an increase in fidgeting. Lastly, when the second phase of classwide peer tutoring was implemented, the participant's attention to instruction and his off-task motor activity improved. The student's performance on CBM math probes also was examined. During the first baseline condition, his performance ranged from 0 to 10 correct digits. During the first phase of peer tutoring, his scores ranged from 7 to 10 correct digits. During the return to baseline conditions phase, the participant received an average of 7 correct digits. Finally, during the last peer tutoring phase, his performance improved to an average score of 13.3 digits correct (DuPaul et al., 1993). Given these results, peer tutoring was associated with an improved performance on CBM math probes demonstrating an improvement in math skills.

DuPaul et al. (1993) showed peer tutoring to be associated with improved performance in math skills. The participant's scores increased in the mean number of

correct digits on CBM math probes. The findings of this study support the notion that children diagnosed with ADHD are better able to sustain their attention to instruction and complete academic material more accurately when they receive one-on-one instruction that provides immediate feedback, allows the student to actively respond, provides the student with frequent prompts, and provides instruction at their level of academic ability and pace (DuPaul & Henningson, 1993). Although the participant improved his performance on CBM math probes during peer tutoring conditions, this study is limited to one participant. Thus, the results need to be replicated with other children diagnosed with ADHD. Although interobserver reliability checks were conducted for behavioral observation data, interscorer reliability checks on CBM data were not conducted. DuPaul and Henningson's study was conducted over a 30-day time frame. Future studies should be conducted over a longer time period to assess the long term impact of peer tutoring on academic achievement and to allow for analysis of trend data. Additionally, this study did not include methods for monitoring treatment integrity. Studies involving peer tutoring should consider using a peer tutoring implementation checklist to monitor treatment integrity. Although teachers and students typically report satisfaction with peer tutoring (Greenwood, Carta, & Maheady, 1991), studies examining peer tutoring should include measures of social validity. Information regarding the students' and teachers' views of this peer tutoring intervention was not reported. Lastly, the authors could have considered comparing the participant's work products using similar math skills during baseline conditions and peer tutoring phases or at the beginning of baseline 1 and at the end of peer tutoring phase 2.

In another study, DuPaul, Ervin, Hook, and McGoey (1998) examined the effects of classwide peer tutoring on classroom behavior and academic performance of students diagnosed with ADHD. The study consisted of 18 children (15 boys, 3 girls) diagnosed with ADHD and 10 peer comparison students with ages ranging from 6 through 10 years of age. Participants attended general education classes ranging from first through fifth grade. The peer comparison students were from the same classrooms as the study participants with ADHD and were rated by their teachers as average regarding their behavior and academic performance. The peer comparison students were not tutors for any of the students diagnosed with ADHD in this study.

Direct observations were conducted using a modified version of Behavioral Observations of Students in Schools (DuPaul et al., 1998). The behaviors observed were categorized as active on task (e.g., writing or answering questions), passive on task (e.g., listening to instruction), off task (visual inattention), and fidgets (task irrelevant motor activity). A partial interval coding procedure, in which behavior was observed for 15 seconds with 5 seconds for recording behavior, was used. Observation sessions were conducted during academic instruction and activities and lasted for a total of 15-20 minutes each.

DuPaul et al. (1998) examined academic performance by weekly comparisons of pre-test and post-test scores for 14 of the 18 students with ADHD and for all 10 peer comparison students. The tests consisted of 10 to 20 items, which took approximately 2 to 3 minutes to complete. The math tests consisted of addition, subtraction, multiplication, or division problems that were taught in the classroom. Spelling tests involved the teacher verbally stating the spelling words of the week, and the students

responding by writing the spelling word. Pre-tests were administered on Mondays prior to instruction, and post-tests were administered at the end of Friday's lesson.

In this study, an ABAB reversal design was implemented in 18 classrooms. Initially, baseline conditions were incorporated involving typical classroom activities, which included small and large group instruction, as well as independent written assignments. Students actively responded when called upon individually and when completing written assignments. Next, classwide peer tutoring (CWPT) was implemented in math or spelling. During CWPT conditions, students were paired with other students for 15 to 20 minutes per day learning math facts or spelling words related to current curriculum for 3 to 4 days per week. The tutor dictated items from a script, and the tutee responded to the items verbally. The tutee earned two points for each initial correct response. When the tutee responded incorrectly, the tutor supplied the correct answer. The tutee then had the opportunity to repeat the correct response three times to earn a point. The item list was administered as many times as possible during the 10 minutes. During CWPT, the teacher monitored the interactions between the tutoring pairs and provided assistance as needed. Bonus points were awarded to tutoring pairs on a random 5-minute basis for appropriate instructions and behaviors. After the CWPT phase was implemented, baseline conditions were reestablished. Lastly, CWPT was reimplemented. Each conditional phase was implemented for 1 to 2 weeks. The class was divided into two teams, and points were totaled for each team. At the end of each week, the members of the team with the most points were declared the winners and received applause from the other team.

The results of this study showed that peer tutoring had a positive effect on active engaged behavior, decreasing passive engaged time, and decreasing off-task behavior among the ADHD participants. Changes in the academic performance of students with ADHD were variable across participants. Seven of the participants with ADHD and seven of the peer comparison participants earned higher pretest scores in CWPT in comparison to baseline conditions. Implementation of CWPT led to increases in posttest scores for 5 of the 14 students with ADHD. Posttest scores decreased for 6 of the students with ADHD during the return to baseline conditions. The final CWPT phase showed improvements in posttest scores of nine of the students with ADHD. It was determined that 50% of the participants with ADHD were treatment successes based upon an index of improvement using the following formula for each participant: $[(CWPT\ M\ posttest - CWPT\ M\ pretest) - (baseline\ M\ posttest - baseline\ M\ pretest)]$. Two indices of improvement were averaged to provide a summary index of improvement. The first index compared the first baseline phase with the first CWPT phase. The second index compared the second baseline phase with the second CWPT phase. Participants with at least a 10% index of improvement were considered treatment successes.

In addition to examining treatment outcomes, consumer satisfaction questionnaires were administered to the teachers and students who participated in the study. All except one of the teachers reported satisfaction with peer tutoring and planned to continue peer tutoring after termination of the study. Thirteen of the 16 participants with ADHD who completed the question reported that they enjoyed peer tutoring and would recommend it to a friend.

Although the results of this study show promise for CWPT as an effective intervention for students with ADHD in general education settings, some important limitations of this study should be noted. For example, no measures were conducted prior to peer tutoring conditions to determine students' initial skill levels. As a result, for some of the students, the curriculum instructed during peer tutoring was not challenging. DuPaul et al. (1998) note that the lack of challenging material may have resulted in a ceiling effect resulting in minimal change in posttest scores when comparing performance among CWPT and baseline conditions. To address this limitation, future studies involving peer tutoring should include assessments (e.g. survey level assessments) to determine students' instructional levels for peer tutoring curriculum. Additional limitations include concerns of social validity. For instance, one of the teachers involved in this study reported that peer tutoring was ineffective and an inefficient use of class time. The teacher's perceptions of the peer tutoring intervention could have a negative impact on treatment integrity. More specifically, the teacher may have been less likely to follow intervention implementation procedures accurately contributing to a negative influence on treatment results. Although 50% of the participants with ADHD were determined treatment successes, 50% of the participants with ADHD were determined treatment failures. Additionally, of the 10 peer comparison participants only 3 participants were determined treatment successes.

Summary

Overall, self-management and peer tutoring strategies show promise in improving academic performance of students with ADHD. However, the current literature on academic interventions focuses primarily on improvements in academic productivity and

academic engagement among children with ADHD. Further studies should examine the effects of self-management and peer tutoring strategies on academic achievement outcomes among children with ADHD. When using academic interventions, it is important to measure students' instructional level to determine the level of curriculum to be included in interventions. Although previous studies have included standardized measures of intelligence and achievement, some of these studies have failed to include measures that identify students' instructional levels. Survey level assessments should be conducted to determine instructional levels of peer tutoring curriculum, and CBM probes should be used to measure the effects of these interventions on achievement outcomes over time. DuPaul et al. (1998) suggest that CBM probes may be more sensitive to intervention effects compared to published norm-referenced achievement measures. In the studies included in this review, interobserver reliability checks were typically conducted on behavioral observations, but interscorer reliability checks on measures of academic performance were not always included. Future studies involving CBM measures should conduct interscorer reliability checks to further validate accuracy of CBM data collection. Additionally, some of the current studies have failed to include measures that monitor implementation of treatment procedures, which can lead to issues with treatment fidelity. Studies examining effectiveness of interventions should include some form of monitoring intervention implementation procedures. Social validity appears to be another area of concern that is not always considered in research studies. The views and perceptions of those implementing interventions is an important consideration which could have a tremendous impact on treatment integrity and results. Studies regarding academic interventions should include measures that gather qualitative information

regarding participants' perceptions of interventions. Lastly, future research should also examine maintenance effects of self-management and peer tutoring strategies on academic performance among children with ADHD. Follow-up assessments could be implemented to determine treatment gains over a period of time.

Chapter 3

Methodology

This chapter focuses on the participants, setting, and procedures that comprised this study. Participants in this study included four second grade students who exhibited symptoms of Attention-Deficit/Hyperactivity Disorder: Predominantly Inattentive Type, who were identified as low achievers in reading. These students were tutees in the peer tutoring sessions. Data obtained from the Woodcock-Johnson III Tests of Achievement (WJ-III ACH; Woodcock, McGrew, & Mather, 2001), the ADHD Rating Scale-IV (DuPaul, Power, Anastopoulos, & Reid, 1998), and survey level assessments (SLA) were compared to the inclusion criteria described in this chapter to select tutee participants. Fourth grade students identified as good readers and well behaved students were selected as tutors for the peer tutoring sessions. The researcher trained the tutors in the peer tutoring procedures detailed in this chapter. Peer tutoring occurred three times per week for 15 minutes each session. Curriculum-based measurement (CBM) reading probes were administered to each tutee twice per week to assess the effectiveness of the peer tutoring and self-monitoring interventions. Tutee participants graphed their performance on CBM reading probes twice per week. A multiple-baseline design was incorporated comparing the performance of participants in relation to baseline conditions. Baseline conditions consisted of the typical reading instruction received in the general education classroom. Teachers of the tutees and the tutee participants completed modified versions of the Intervention Rating Profile (IRP) and the Children's Intervention Rating Profile (CIRP), respectively. The data collected from the IRP and CIRP provided qualitative information

regarding the acceptability and effectiveness of the self-monitoring and peer tutoring interventions.

Participants

Participants included four students enrolled in general education second grade classrooms at an elementary school in central Florida. The students exhibited at least 6 of the 9 inattention symptoms for Attention-Deficit/Hyperactivity Disorder: Predominantly Inattentive Type, and were considered low achievers in reading determined by CBM survey-level assessment (SLA). Students who participated as tutees in this study met the following criteria:

1. Students identified as low achievers in reading as determined by performing below instructional level for their grade placement on the Word Attack and Word Identification subtests of the Woodcock-Johnson III Tests of Achievement and on Survey Level Assessment (SLA) CBM reading probes (less than 40 words correct per minute with more than 4 errors for second graders in second grade level reading materials; Fuchs & Deno, 1982). Participants were included if they read 40 or more words correct, but were considered below instructional level according to their performances on the Word Attack and Word Identification subtests from the WJ III Tests of Achievement.
2. Teacher ratings on the ADHD Rating Scale-IV Inattention subscale (DuPaul et al., 1998) were at or above the 90th percentile, and teacher ratings on the Hyperactivity-Impulsivity subscale were below the 80th percentile. Students who exhibited at least 6 of 9 Inattention symptoms based on DSM-IV-TR

criteria (APA, 2000) determined by teacher responses on the ADHD Rating Scale-IV (DuPaul et al., 1998).

3. Parent ratings on the Hyperactivity-Impulsivity subscale were at or below the 80th percentile.
4. Students who were currently in general education classrooms and who were not in the process of being referred for special education or who were not already receiving special education services.
5. Students whose cumulative school records did not indicate presence of co-morbid disorders.

Although none of the participants were on medication for Attention-Deficit/Hyperactivity Disorder, medication was not considered a factor when determining participant inclusion. In addition, retention was not considered when determining eligibility for participation in this study. According to school records, Participant 3 had been retained previously.

Table 1

Summary of Tutee Participants' Demographic Information

	Gender	Ethnicity	Age	Grade
Participant 1	Male	Caucasian	8	2
Participant 2	Male	African American	7	2
Participant 3	Male	Hispanic	10	2
Participant 4	Male	African American	8	2

Table 2

Results from ADHD Rating Scale IV- School and Home Versions (DuPaul et al., 1998)

	School Version			Home Version	
	Sum of Inattention Scores	Inattention Percentile	Number of Items Rated "Often" or "Very Often"	Sum of Inattention Scores	Inattention Percentile
Participant 1	24	88th-92nd	11	12	84th-86th
Participant 2	22	92nd-94th	13	11	84th-85th
Participant 3	27	98th-99th	12	5	25th-50th
Participant 4	24	88th-92nd	12	8	50th-75th

In addition to the four participating tutees, four fourth grade students at the elementary school identified as well-behaved and above average in reading achievement as reported by their teachers were selected as tutors. Research supports the benefits of cross-age tutoring for both tutors and tutees (Utley, Mortweet, & Greenwood, 1997). In cross-age tutoring, older students who have already mastered the academic skills being taught are selected as tutors for younger children with lower academic skills (Greenwood, Carta, & Hall, 1988).

Table 3

Summary of Tutor Participants' Demographic Information

	Gender	Ethnicity	Grade
Tutor 1	Female	Caucasian	4
Tutor 2	Female	Caucasian	4
Tutor 3	Male	Caucasian	4
Tutor 4	Male	Caucasian	4

Setting

This study was conducted at an elementary school in central Florida. At the time of this study, the population of the elementary school was 541 students, of which 53% were males and 47% were females. The ethnic groups that make up the population of this school include: 43% Caucasian, 23% African American, and 34% Hispanic. Ninety percent of the students at the school received free or reduced cost lunch. A summary of the demographic information for the school is provided in Table 4.

Table 4

Demographic Information for Elementary School

	Caucasian	African American	Hispanic	Asian
Number of Males	124	74	89	0
Number of Females	109	50	95	0

Evidence of Ethical Considerations

Permission from the Institutional Review Board was secured before the study was conducted. District permission also was obtained prior to conducting this study. Parental

written consent and participant assent was acquired prior to students' inclusion in this study. Participants were referred to as Participant 1, Participant 2, Participant 3, and Participant 4 when reporting results to ensure the confidentiality of individuals involved in this study.

Participant Recruitment Procedures

The principal investigator asked for teachers to volunteer participation in this study. With the assistance of the school psychologist and the Exceptional Student Education (ESE) services coordinator at the school, potential student participants (tutees) were identified within the second grade classrooms of the teachers who volunteered. These students were evaluated according to the criterion procedures previously outlined. Additionally, fourth grade participants (tutors) were recruited based upon teachers identifying students as good readers and well-behaved students. The school psychologist provided fourth grade teachers with a tutor recommendation form to nominate students in their classrooms (Appendix B).

Dependent Measures

Curriculum-based measurement (CBM) reading probes were administered to the participants two times per week over the course of 7 weeks to document changes in oral reading fluency as a function of peer tutoring. CBM can best be characterized as dynamic indicators of basic skills (Shinn, 2002). CBM is dynamic in that probes are brief measures designed to be sensitive to gains in student performance over short periods of time. Therefore, CBM provides an effective means for monitoring student progress frequently. In regard to CBM as indicators, CBM probes measure key behaviors that indicate overall performance in an academic area (Shinn, 2002). For example, in reading,

CBM probes measure oral reading fluency. Oral reading fluency has shown strong correlation with overall reading performance. Additionally, CBM data provides both quantitative and qualitative information regarding student performance in basic skill areas. Importantly, multiple probes are available, allowing for repeated measurement of student performance. These progress data can be used to evaluate the effectiveness of interventions (e.g., peer tutoring) in basic skill areas such as reading or math. CBM probes can be taken directly from the curriculum in which the student is instructed. Research also supports the use of same level probes not taken directly from the student's curriculum as effective in monitoring change regardless of which reading curriculum series the student is being instructed (Fuchs & Deno, 1992; Fuchs & Deno, 1994; Powell-Smith & Bradley-Klug, 2001).

Technical adequacy of CBM reading probes. Numerous studies have demonstrated CBM's strong technical adequacy, in particular for CBM reading (see Marston, 1989; Shinn, Good, Knutson, Tilly, & Collins, 1992). Deno, Mirken, and Chiang (1982) examined the validity of CBM reading measures by correlating these measures with the following criterion, norm-referenced tests of reading: the Stanford Diagnostic Reading Test (Karlsen, Madden, & Gardner, 1975), the Woodcock Reading Mastery Test (WRMT; Woodcock, 1973), and the Peabody Individual Achievement Test (PIAT; Dunn & Markwardt, 1970). Results showed that CBM reading measures, in which students read from their basal reader for one minute, were valid measures of reading with correlation coefficients ranging from .73 to .91. In addition to studies examining the validity of CBM as technically adequate measures of reading, several studies have investigated the reliability of CBM reading measures. Marston (1989)

reviewed several of these studies (Shinn, 1981; Tindal, Germann, et al., 1983); the following three methods were used to determine reliability: test-retest estimates, parallel form estimates, and interrater agreement coefficients. Among these five studies, test-retest reliability coefficients ranged from .82 to .97; parallel form estimates ranged from .84 to .96; and interrater agreement coefficients were .99.

Selection and administration of CBM reading probes. CBM standard reading passages developed by Edformation (Howe & Shinn, 2001) as part of AIMSweb formative assessment were randomly selected to conduct survey level assessments and to monitor students' oral reading fluency. AIMSweb reading passages are technically adequate with reliability correlations ranging from .81 to .89 across grades 1 through 7 (Howe & Shinn, 2001). The principal investigator used a standardized script to provide instructions when individually administering CBM probes. The principal investigator used a stopwatch to monitor the time; each student was given one minute to read the passage aloud. While the student was reading, the principal investigator also held a copy of the same passage to record any errors the student made. Examples of errors include: omitting word(s), substitution of word(s), or mispronunciations of word(s) (Shinn, 1989). At the end of the one-minute time period, the principal investigator marked the last word the student read on the CBM probe. Probes were scored by counting the number of words read correctly and errors in one minute. The principal investigator, a school psychology graduate student, collected CBM data for each tutee participant in this study. The principal investigator previously had received seven weeks of training in administering and scoring curriculum-based measures during her Psychoeducational Assessment I course in the School Psychology Program at the University of South Florida. In addition,

the principal investigator has conducted survey level assessments and collected CBM progress monitoring data in her practicum setting. The principal investigator checked her own accuracy in scoring CBM reading probes prior to data collection. The principal investigator scored videotaped samples provided by her faculty advisor of children reading selected CBM passages. Then, the principal investigator checked her accuracy with the scoring key. Interrater agreement was calculated using the following formula: number of agreements divided by total number of agreements plus disagreements multiplied by 100. A criterion of 95% accuracy was required to be obtained before proceeding with the study. Interrater agreement was 100 percent.

Woodcock-Johnson III Tests of Achievement

The Woodcock-Johnson III Tests of Achievement (WJ III ACH; Woodcock, McGrew, & Mather, 2001) is an individually administered, standardized, and norm-referenced comprehensive test battery of achievement tests. The Word Identification and the Word Attack subtests were used to assess tutee participants' basic reading skills. The Word Identification subtest requires pronunciation of isolated words (Sattler, 2001). The Word Attack subtest requires the pronunciation of either nonsense words or low frequency words (Sattler, 2001). From the raw score earned by the child, a standard score and an instructional range score can be determined.

The Woodcock-Johnson III Tests of Achievement has adequate reliability and validity for measuring academic achievement. Median internal consistency reliabilities for the WJ III ACH range from .76 to .97 (*Mdn* $r_{xx} = .88$) for subtests and from .85 to .96 for clusters (Sattler, 2001). In addition, total test comparisons between the WJ III ACH and the Kaufman Test of Educational Achievement (K-TEA) show a correlation of .79

(Sattler, 2001). A correlation of .65 was found between the WJ III Total Achievement and the WIAT Total Achievement (Sattler, 2001).

Based on the *WJ III Compuscore and Profiles Program* (Schrank & Woodcock, 2001), all of the participants' grade placements were 2.8. Participant 1's Basic Reading Skills fell at the beginning second grade level 2.0, with 1.8 grade level reading material deemed easy and 2.3 grade level material determined difficult (See Table 5). Participant 2's Basic Reading Skills fell at the 2.3 grade level, with 2.0 grade level reading material considered easy and 2.6 grade level reading material considered difficult for this participant. For Participant 3, Basic Reading Skills fell at the 1.8 grade level, with 1.6 grade level material deemed easy and 2.1 grade level reading material identified as difficult. Lastly, Participant 4's Basic Reading Skills composite fell at the 2.2 grade level, with 1.9 reading level materials determined easy and 2.5 reading level materials indicated as difficult.

Table 5

Results of Woodcock-Johnson III Tests of Achievement Reading – Basic Reading Skills

	Grade Equivalent	Easy to Difficult	Standard Scores	Percentiles
Participant 1	2	1.8 to 2.3	85	16
Participant 2	2.3	2.0 to 2.6	91	27
Participant 3	1.8	1.6 to 2.1	80	9
Participant 4	2.2	1.9 to 2.5	89	22

Consumer Satisfaction

Student tutees completed a modified version of the Children's Intervention Rating Profile (CIRP; Witt & Elliot, 1985), and their teachers completed a modified version of the Intervention Rating Profile (IRP; Martens & Witt, 1982) to determine the acceptability of this intervention (Appendix J and K). Witt and Martens (1983) examined the technical adequacy of the IRP and found that the IRP correlated .86 with the Evaluative Scale of the Semantic Differential. Witt and Martens (1983) also found the reliability coefficient of the IRP to be .98. Currently, no information is available regarding the reliability and validity of the CIRP. The modified version of the CIRP required participants to rate each item based on a 5-point Likert scale (e.g., 1 = agree, 5 = disagree). The modified version of the IRP required teacher participants to rate each item based upon a 6-point Likert scale (e.g., 1 = strongly disagree, 6 = strongly agree).

Research Design

This study used a multiple baseline design across participants to evaluate the effectiveness of self-monitoring and peer tutoring on the oral reading fluency for children exhibiting symptoms of ADHD; Predominantly Inattentive Type, who are low achieving in reading. Effects of the intervention were demonstrated by introducing the intervention to different baselines, across the four participants, at different times (Kazdin, 1982). Procedures specific to each phase of the study are described in the following sections.

Pre-baseline. Peer tutors participated in two training sessions. Each session was approximately 20 minutes in length and was conducted by the principal investigator. First, the principal investigator modeled the role of the tutor. Next, the investigator and tutor role-played with the tutor in-training performing the role of tutee while the

investigator played the role of tutor. Then, the investigator and tutor in-training switched roles. Once the tutor followed the tutoring procedures with 100% accuracy with the investigator in the role of the tutee, the tutoring session ended. The principal investigator assessed the tutor in-training's accuracy of implementing tutoring procedures using a checklist for training (Appendix C).

Baseline. Baseline conditions consisted of the typical classroom routine for reading instruction. During baseline conditions, survey level assessments were administered to gather data regarding the students' current level of reading performance. Survey level assessment is a method involving the administration and scoring of curriculum-based measurement (CBM) probes to determine if a discrepancy exists between a student's expected performance level in the curriculum and actual performance level (Shinn, Johnston, Malmquist, & Sweetland-Baker, 1993). Probes were administered at each level in the curriculum beginning with the student's grade level, and testing continued in successively lower levels until the student reached a level at which he/she was successful. This level is referred to as the student's instructional level. Following scoring procedures for reading probes developed by Shinn, Johnston, Malmquist, and Sweetland-Baker (1993), the median score of words read correctly and the median number of errors from these probes were used to determine each participant's instructional level.

Based upon survey level assessment data and oral reading fluency benchmarks (Good, Simmons, Kame'enui, Kaminski & Wallins, 2002), a goal and aimline for each tutee participant was established. According to Good, Simmons, Kame'enui, Kaminski, and Wallins (2002), a benchmark goal for Spring of second grade is 90 words read

correct per minute in grade-level material. The aimline and goal based on oral reading fluency benchmarks without intervention were compared to the participant's progression with intervention. However, if a student was reading so far below benchmarks that according to Fuchs et al. (1993) progress was completely unrealistic, a goal was set in between benchmarks and realistic standards for growth. According to Fuchs et al. (1993), realistic standards for growth are between 1.5 to 2 words per week at Grade 2. For each of the participants, goals and aimlines were set at a gain of 3 words per week over the course of seven weeks. Once little variability was demonstrated across baseline data points, the intervention was implemented for Participant 1 while baseline data collection was continued for Participants 2, 3, and 4. The intervention was implemented for each participant sequentially. For example, baseline conditions continued for Participant 2 for one additional week once the intervention had been implemented for participant 1. Baseline conditions continued for Participant 3 for 2 ½ additional weeks once the intervention had been implemented for Participant 1. Additionally, baseline conditions continued for Participant 4 for 3 additional weeks once the intervention has been implemented for Participant 1. Once the intervention had been implemented, data collection continued throughout the duration of this study.

Peer tutoring. Students were paired with fourth-grade peer tutors who were achieving above average in reading and who did not demonstrate behavior problems. Tutoring sessions occurred in the tutee participants' general education classrooms. During the tutoring sessions, the tutor presented a story from the tutee's reading curriculum. Tutors set a timer for 5 minutes to begin when the tutee began reading the story aloud. When the tutee made errors such as omission of words, substitution of

words, or mispronunciations of words, the tutor used an error correction procedure described by Hook and DuPaul (1999). First, the tutor pointed to the place of the error and correctly stated the error word. Next, the tutor directed the child to restate the error word and reread the sentence correctly. The tutor provided positive praise for tutee's corrections. At the end of the five minutes, the tutor reset the timer for another five minutes and redirected the tutee to return to the beginning of the passage to read aloud. The principal investigator trained the tutors and tutees on these peer tutoring procedures prior to implementation of this intervention. It was expected that the number of words read correctly would increase for Participant 1, while the number of words read correctly for Participants 2, 3, and 4, who had yet to be exposed to the intervention, would continue at their baseline levels. When the number of words read correctly for Participant 1 demonstrated little variability, the intervention was implemented with Participant 2. These procedures continued until the intervention had been implemented across all four participants. Tutoring sessions were 15 minutes in length and were implemented three times per week. The effects of the intervention were monitored by each student's performance on a one minute CBM reading probe, which was administered two times per week by the principal investigator.

Self-monitoring/self-graphing. Throughout the experimental phase of this study, the tutees' reading progress was monitored using CBM reading probes. After each tutee's first peer tutoring session, CBM progress monitoring data were collected. Once these data were collected, the principal investigator trained the tutees on procedures for graphing data points for the number of words read correctly per minute (Appendix E). Tutee graph training involved the investigator providing each tutee with a sample graph and 5 sample

data points (CBM scores of words read correctly per minute). First, the investigator described the procedures of how to graph one of the sample CBM scores orally. Next, the investigator described the procedures orally to the tutee while implementing graphing procedures as follows: (a) locate the date the score was obtained on the x-axis, (b) locate the number of words read correct per minute on the y-axis, and (c) make a mark where these two lines intersect or meet. Then, the investigator prompted the tutee to follow these steps using the remaining three CBM scores. When the tutee had performed this task with 100% accuracy, the training ended.

Tutees graphed data points for each CBM data collection session using graphing paper provided by the investigator. These graphs provided visual displays of each student's performance. The x-axis was labeled with dates of CBM data collection while the y-axis was labeled *words read correct per minute* (WRCM) in equal intervals. The principal investigator spoke to the tutees individually about their performance once the data were graphed. In addition, tutees were provided folders to hold their graphs and were given the opportunity to decorate their folders. By having participants graph their performance, the participants may have been motivated to try their best when reading each passage (Fiala & Sheridan, 2003).

Procedural Reliability

The principal investigator monitored implementation of peer tutoring procedures by randomly observing 40% of the total peer tutoring sessions using a procedural implementation checklist (Appendix D). Gresham (1989) recommends that observations occur on a random schedule to aid in reducing potential reactive effects of observations. The procedural implementation checklist included the following items: (a) did the peer

tutor arrive on time for the session; (b) did the peer tutor use the appropriate reading materials during the session; (c) did the peer tutor adhere to the peer tutoring procedures; (d) did the peer tutor complete the session within 15 minutes; and (e) did the peer tutor administer corrective and positive feedback to the tutee appropriately? Corrective action and feedback regarding integrity of implementing procedures may facilitate greater integrity (Gresham, 1989). Thus, if tutors were not following the procedures with 100% accuracy during random observations, peer tutor training booster sessions were provided by the examiner after the observation was complete.

Results from the observation checklists indicate that during one of the seven sessions tutor 1 was observed using the procedural implementation checklist, tutor 1 was five minutes late. During 40% of the observed sessions, tutor 2 could have provided additional positive feedback to Participant 2. In addition, for 25% of the observed sessions for tutors 3 and 4, more positive praise and feedback could have been provided to tutee participants. Tutor 3 also was observed arriving 5 minutes late to one of the four sessions he was observed. Lastly, tutor 4 was observed missing tutee Participant 4's errors during 25% of the tutoring sessions observed (1 of 4 sessions observed). Therefore, tutor 4 did receive one training booster session. All other items included on the procedural implementation checklist were followed 100% of the time they were completed.

Interrater Agreement

An audiotape was used to record participants' performance during CBM data collection sessions. No participant identification information was provided on the tapes. Participants were referred to as Participant 1, Participant 2, Participant 3, and Participant

4 on the audiotape. CBM reading probes were labeled in the same manner to protect participants' confidentiality. A second, outside scorer (school psychology graduate student) trained in scoring CBM reading probes randomly selected 30% of the audiotaped sessions across all four participants to review and score CBM probes accordingly. Therefore, interrater agreement was obtained on 20 of the possible 64 probes that were administered in this study. Interrater percent agreement was calculated by dividing the number of agreements by the total number of agreements plus disagreements multiplied by 100. Prior to implementing this study, it was determined that interrater agreement must fall above 90%. Results of the calculation described above indicate an interrater percent agreement of 97%.

Data Analysis

Data collected from the participants' performances on CBM reading probes were graphed to monitor students' progress and the effects of the intervention. Data collected during the intervention phase were compared to the data collected during baseline conditions. Trendlines were drawn to demonstrate rate of change in student performance over time. To summarize CBM progress monitoring data, linear trendlines were calculated and drawn using Microsoft Excel graphing program. The Excel program created trendlines by using the linear equation $y = mx + b$. Trends were analyzed comparing the trend in performance during baseline conditions to the trend in performance during the intervention phase across participants. In addition, aimlines drawn based upon goals derived from survey level assessment data were compared to trendlines of participants' performances. This analysis provided information as to how each participant performed in comparison to their individual goals.

The principal investigator visually inspected graphed data points to determine variability among student's performance. Variability refers to the consistency in day-to-day performance within each phase (Shinn, Johnston, Malmquist, & Sweetland-Baker, 1993). If variability in data demonstrated stable performance, then one could infer that the data were an accurate representation of the student's performance. Additionally, the degree of non-overlapping data points prior to and following the intervention were analyzed to determine effectiveness of the intervention. The percentages of non-overlapping data points were calculated using the following formula: the number of data points that fell above the highest baseline data point, divided by the total number of data points during the intervention phase, multiplied by 100 (Stape, 2000). Lastly, student performance was summarized according to median of words read correct and errors within each phase. Therefore, the median for words read correct during baseline was compared to the median of words read correct during the intervention phase. If performance increased during the intervention phase sequentially as the intervention was applied to each participant, then one can infer that the intervention influenced the change in performance.

Chapter Four

Results

This chapter provides the results of the peer tutoring and self-monitoring intervention on participants' oral reading fluency. First, survey level assessment data, which were collected to determine each participant's goal, are discussed. Next, each participant's progress monitoring data collected during the intervention phase are analyzed and compared to baseline data. Graphed results are examined according to level, trend, variability, and non-overlapping data points. Lastly, qualitative data from the intervention rating profiles (CIRP and IRP) completed by the tutees and teachers are provided to determine the perceived acceptability and effectiveness of this intervention.

Survey Level Assessment Data

Survey level assessment (SLA) data were collected for all four participants during the first week of baseline data collection. Survey-level data are reported in Table 6. The median number of words read correct per minute from three reading probes at each participant's instructional level was used as the first baseline data point. Participant 1 obtained a median score of 31 words correct with 5 errors on the second grade reading probes that were administered for SLA. Participant 2 scored a median of 55 words read correct with 4 errors on second grade probes. Participant 3 earned a median score of 27 words read correct with 6 errors, and Participant 4 obtained a median score of 54 words correct with 5 errors.

Survey level assessment data in conjunction with oral reading fluency benchmarks (Good, Simmons, Kame'enui, Kaminski & Wallins, 2002), and realistic

standards for growth were used to determine a goal and aimline for each participant. According to Good, Simmons, Kame'enui, Kaminski, and Wallins (2002), a benchmark goal for Spring of second grade is 90 words read correct per minute in grade-level material. Each participant's survey level assessment median scores fell well below this benchmark; therefore, goals were established at a 3 word gain per week, which fell between the benchmark and realistic standards for growth according to Fuchs, Fuchs, Hamlett, Walz, and Germann (1993). For Participant 1, a goal of 52 words read correct per minute was established based upon a 3 word gain per week across 7 weeks. A goal of 76 words correct was developed for Participant 2 based upon a 3 word gain per week across 7 weeks. Forty-eight words read correct per minute was the goal at the end of the 7 weeks for Participant 3. Lastly, a goal of 75 words read correct was established for Participant 4.

Table 6

Survey Level Assessment Data

	Grade 1 WCM	Grade 1 Errors	Grade 2 WCM	Grade 2 Errors
Participant 1	50	5	20	7
	43 ^a	4	31 ^a	4
	42	2	44	5
Participant 2	-	-	55 ^a	6
	-	-	67	3
	-	-	52	4
Participant 3	40	5	27 ^a	5
	51 ^a	5	47	6
	78	1	22	9
Participant 4	-	-	69	5
	-	-	54 ^a	4
	-	-	42	10

Note. – Indicates survey level assessment data were not collected

^aMedian words read correct per minute.

Data Analysis

Participant 1. For Participant 1, baseline data were collected for 1 week, and the intervention was implemented for 6 weeks. Progress monitoring data for Participant 1 are reported in Appendix F. Graphed data for all participants are presented in Figure 1. During baseline, Participant 1 obtained a median of 32 words read correct per minutes

with 5 errors compared to a median of 41.5 words read correct with 4.5 errors during the intervention phase. Analysis of the graphed data indicates a very slight increase in level and trend between baseline and intervention phases. Data from baseline demonstrate a flat trend; whereas, data during the intervention phase indicate a slight increase in trend of the number of words read correctly. Forty-two percent of the data points during intervention phase were above this participant's aimline; whereas, 58% of the data points were below the aimline. Although the majority of this participant's scores were below the aimline, four of his scores were at or above his goal of 52 words read correct per minute during the intervention phase. This participant's performance during the intervention phase was highly variable with scores ranging from 20 to 58 words read correctly. Fifty-eight percent of the data points from the intervention phase did not overlap with baseline data.

Participant 2. Baseline data were collected for 2 weeks for Participant 2. Interventions were implemented with this participant for 4 weeks due to the participant's absence during the final week of intervention. This participant's progress monitoring data are reported in Appendix G. Participant 2 obtained a median of 56 words read correct per minute with 4 errors during baseline compared to a median of 64.5 words read correct with 4.5 errors during the intervention phase. The graphed data illustrates a slight increase in level and trend from baseline to intervention phase. During baseline, this participant's performance demonstrates a decrease in trend. Upon intervention implementation, a slight increase in level is evident; however the general trend throughout this phase is flat. During the intervention phase, 50% of the data points were above the aimline and 50% of the data points were below the aimline. Three of the eight

data points collected during the intervention phase were above this participant's goal of 76 words read correct per minute. During the intervention phase, Participant 2's performance was highly variable with data points ranging from 44 to 83 words read correctly. In addition, 38% of the intervention data points did not overlap with baseline data.

Participant 3. Baseline data were collected for 3 ½ weeks due to this participant's absence on one of the data collection days during week three of baseline. The intervention also was implemented for three and a half weeks. Progress monitoring data for Participant 3 can be found in Appendix H. This participant was absent for one of the data collection days during the intervention phase as well. During baseline, Participant 3 obtained a median score of 36 words read correct with 7 errors, and a median of 50.5 words read correct with 5 errors during the intervention phase. According to the graphed data, a slight increase in trend is indicated during the baseline phase, whereas the trend during intervention is relatively flat. A slight increase in level between the baseline and the intervention phases is evident. Sixty-seven percent of the intervention data points were above the aimline, while 33% were below the aimline. In addition, 67% of the intervention data points fell above this participant's year-end goal of 48 words read correct per minute. Data points ranged from 31 to 59 words read correctly with four of the six total data points collected during the intervention phase in the range of 50 to 59. Lastly, 17 % of the intervention data points did not overlap with baseline data.

Participant 4. Baseline data were collected for 4 weeks for Participant 4 while the peer tutoring and self-monitoring interventions were implemented for 3 weeks.

Progress monitoring data for Participant 4 are reported in Appendix I. This participant scored a median of 54 words read correct per minute during both baseline and intervention phases. However, the median number of errors during baseline was 9 and the median number of errors was 4.5 during the intervention phase indicating a decrease in the number of median errors from baseline to intervention phase. Analysis of the graphed data indicate no change in level between the baseline and intervention phases. In addition, the general trend in both phases is relatively flat. It should be noted that this participant's data points are highly variably with intervention data points ranging from 46 to 98. Without the outlying score of 98, this participant's intervention data points would range from 45 to 66. During the data collection session that Participant 4 read 98 WCM, he was observed speed reading the CBM passage. When speed reading occurs during CBM data collection, it is recommended that the student is (a) informed that the assessment is not a speed reading test, (b) given a different CBM reading probe, and (c) encouraged to do his best reading (Shinn, Johnston, Malmquist, & Sweetland-Baker, 1993). However, a second probe was not provided to this participant because the principal investigator did not have access to additional probes at the time of this CBM data collection session. As with Participant 3, 17% of this participant's intervention data points did not overlap with baseline data.

In summary, the graphed results indicate some evidence for establishing experimental control. More specifically, when the intervention was implemented for Participant 1, this participant showed an increase in level while the other three participants did not show improvements in words read correctly. However, when intervention was implemented initially with Participant 2, Participant 3 was absent and

Participant 4 demonstrated a slight gain in words read correct. When the intervention was implemented for Participant 3, this participant demonstrated an increase in level while Participant 4 showed a decrease in words read correctly. Although the results show some evidence of experimental control, additional data points separating intervention implementation between each participant, particularly between Participants 3 and 4, would provide more information as to whether experimental control was established.

Overall, the peer tutoring and self-monitoring intervention were not effective in improving participants' oral reading fluency. The general trend in performance among participants remained relatively flat demonstrating minimal change. Participants 1, 2, and 3 demonstrated a very slight change in level upon intervention implementation, while Participant 4 demonstrated no change in level. In addition, intervention data points across Participants 1, 2, and 4 were highly variable. For Participants 2, 3, and 4, the percentage of intervention data points that overlapped baseline data was higher than the percentage of non-overlapping data points. However, it is important to note that the median number words read correctly increased for three of the four participants. In addition, the percentage of data points above the aimline was equal to or greater than the percentage of data points below the aimline for Participants 2 and 3.

Social Validity

The tutee participants completed the CIRP and their teachers completed the IRP to provide input on the perceived acceptability and effectiveness of this intervention. Results from the input received indicate that this intervention was considered both acceptable and effective at enhancing reading skills. On the CIRP, all of the participants agreed that peer tutoring to practice reading was a fair intervention, and all participants

agreed that this intervention would be good to use with other children (See Table 7). In addition, three of the four tutee participants indicated that they liked peer tutoring to help practice reading. On the IRP, both teachers strongly agreed that this intervention was an acceptable intervention for the students' reading difficulties (See Table 8). Both teachers also indicated that they would suggest the use of this intervention to other teachers.

Lastly, both teachers strongly agreed that the intervention would be appropriate with a variety of children and both liked the procedures used in this intervention.

Table 7

CIRP Results

Questions	P1	P2	P3	P4
1. Peer tutoring to practice reading was fair.	Agree	Agree	Agree	Agree
2. Peer tutoring to practice reading may cause problems with my friends.	Disagree	Disagree	Disagree	Disagree
3. There are better ways to practice reading than peer tutoring.	Agree	Disagree	Neutral	Neutral
4. Peer tutoring would be a good method to use with other children.	Agree	Agree	Agree	Agree
5. I like peer tutoring for practicing reading.	Agree	Agree	Agree	Neutral
6. I think that peer tutoring in reading would help me do better in school.	Agree	Agree	Agree	Agree

Table 8

IRP Results

Questions	Teacher 1	Teacher 2
1. The child's reading problem is severe enough to warrant use of this intervention.	Strongly Agree	Strongly Agree
2. This intervention should prove effective in enhancing the child's reading performance.	Strongly Agree	Strongly Agree
3. This would be an acceptable intervention for the child's reading problem.	Strongly Agree	Strongly Agree
4. Overall, the intervention would be beneficial for the child.	Strongly Agree	Strongly Agree
5. This intervention would not result in negative side effects for the child.	Strongly Agree	Strongly Agree
6. I would suggest the use of this intervention to other teachers.	Strongly Agree	Strongly Agree
7. Most teachers would find this intervention appropriate for enhancing academic achievement.	Slightly Agree	Strongly Agree
8. Most teachers would find this intervention suitable for the academic problem described.	Slightly Agree	Strongly Agree
9. I would be willing to use this intervention in the classroom setting.	Strongly Agree	Strongly Agree
10. This intervention is consistent with those I have used in the classroom setting.	Slightly Agree	Agree
11. This intervention would be appropriate for a variety of children.	Strongly Agree	Strongly Agree
12. I liked the procedures used in this intervention.	Strongly Agree	Strongly Agree

Chapter Five

Discussion

The present study examined the effectiveness of peer tutoring combined with self-monitoring strategies on the oral reading fluency of elementary-aged children exhibiting symptoms of Attention-Deficit/Hyperactivity; Predominantly Inattentive Type. These interventions were implemented using a multiple baseline design across participants. Tutee participants included four second grade students identified as low achievers in reading. Tutee participants were paired with fourth grade tutor participants three times per week for fifteen minute peer tutoring sessions. Tutee participants read stories aloud from their reading curriculum while tutor participants used an error correction procedure described by Hook and DuPaul (1999) to correct tutees' reading mistakes. CBM reading probes were administered twice per week across seven weeks to each tutee participant to measure the number of words read correctly per minute. After each CBM data collection session, tutees graphed the number of words read correctly. The effectiveness of the peer tutoring and self-monitoring interventions was assessed by visually inspecting graphed data. Data were examined according to change in level, change in general trend of performance, and the percentage of non-overlapping data points.

The following three research questions were investigated in this study: (a) did peer tutoring combined with self-monitoring strategies in the general education classroom improve oral reading fluency for elementary-aged children with symptoms of ADHD, who were identified as low achievers in reading; (b) did teachers find peer tutoring to be effective and acceptable interventions for children with symptoms of ADHD in the

general education classroom; and (c) did students find peer tutoring to be effective and acceptable for improving their reading performance? Responses to these research questions are discussed in the following paragraphs.

Regarding the first question, results were inconclusive whether or not the peer tutoring and self-monitoring interventions improved oral reading fluency. Although the median number of words read correctly as measured by CBM reading probes increased for three of the four participants, the general trend in performance across participants remained relatively flat with minimal change. A change in level between baseline and intervention implementation ranged from no change in level to a very slight change in level across participants. In addition, data points for participants demonstrated high variability in reading performance on CBM probes.

As discussed previously, prior research demonstrates the effectiveness self-management strategies with students diagnosed with ADHD (Ajibola & Clement, 1995; Edwards, Salant, Howard, Brougher, & McLaughlin, 1995; Shapiro, DuPaul, & Bradley-Klug, 1998; Shimabukur, Prater, Jenkins, & Edelen-Smith, 1999). Specifically, Ajibola and Clement (1995) demonstrated that self-reinforcement procedures improved the amount of academic performance in reading among students with ADHD. Edwards et al. (1995) found that self-monitoring attention to task improved the reading comprehension of children with ADHD. Shapiro, DuPaul, and Bradley-Klug (1998) found that self-monitoring combined with self-evaluation techniques resulted in improved on-task behavior and academic performance among adolescent males identified with a learning disability and ADHD. Results from the Shimabukuro et al. (1999) study indicate that self-monitoring improved academic productivity and accuracy in reading comprehension,

math, and written expression for sixth and seventh grade students diagnosed with ADHD. According to Barkley (1998), self-monitoring strategies have demonstrated success with students diagnosed with ADHD. In addition, the literature supports the effectiveness of peer tutoring for students with ADHD (DuPaul, Ervin, Hook, & McGoey, 1998; DuPaul & Henningson, 1993). DuPaul and Stoner (1994) report that peer tutoring is an empirically supported instructional strategy for children. Therefore, although the results of this study show inconclusive evidence as to the effectiveness of the peer tutoring and self-monitoring interventions implemented, prior research indicates the potential effectiveness of these interventions on the academic performance of students with ADHD.

It is important to note the differences in this study compared to prior studies involving peer tutoring and/or self-monitoring that may account for differences in results. For example, in the study conducted by Ajibola and Clement (1995), participants developed their goals and signed performance contracts. In addition, the target behavior measured was amount of academic performance versus accuracy. In the present study, goals were established for the participants and no performance contracts were used. In addition, the present study emphasized accuracy in words read correctly on curriculum-based measures. A common factor in previous self-monitoring and/or peer tutoring studies involves the inclusion of awarding points, privileges, and/or rewards as reinforcers. Although the self-management incentive program in the Edwards' et al. (1995) study measured accuracy on reading comprehension probes, participants were awarded points for meeting set criteria. Points were exchanged for privileges previously determined by participants and their teachers. In a classwide peer tutoring study

conducted by DuPaul and Henningson (1993), tutees were awarded points for accurate responses to math problems and teachers awarded tutor pairs bonus points for following peer tutoring procedures. The class was divided into two teams. The team with the most points participated in a class “lottery” for reinforcers. In the Shimabukuro et al. (1999) study, reinforcers were not included; however, the authors suggest that incorporating reinforcers when pre-determined performance criteria were met may have resulted in more consistent academic improvement among participants. The present study did not include reinforcers, which may have impacted the effects of the intervention.

In the present study, teachers of the tutee participants completed the Intervention Rating Profile (IRP) to provide qualitative information on their perceptions of the acceptability and effectiveness of the peer tutoring intervention. Both teacher participants rated 9 of the 12 items on the IRP as strongly agree. More specifically, both teachers strongly agreed that the intervention would prove effective for enhancing participants’ reading performance and was an acceptable intervention for improving participants’ reading performance. In addition, both teachers strongly agreed that peer tutoring would be beneficial for the participants, that the intervention would not result in negative side effects, that they would suggest the intervention to other teachers, that they would be willing to use this intervention in the classroom setting, that the intervention would be appropriate for a variety of children, and that they liked the intervention procedures used. Therefore, although the intervention did not demonstrate significant change in the participants’ oral reading fluency, and the teachers were aware of the variability in participants’ performance, they still viewed and rated this intervention positively. This finding indicates that these teachers’ positive perceptions of this

intervention were not based on the lack of effects on the participants' reading performance. This issue raises the concern that teachers may accept classroom interventions that fail to demonstrate positive change in student performance. It is hypothesized that both teachers rated this intervention positively due to the minimal teacher time needed, the one-on-one reading instruction provided, the academic engaged reading time required of the tutee participants, and the immediate feedback tutees received from their fourth grade tutors.

Tutee participants completed the Children's Intervention Rating Profile (CIRP) to provide qualitative data on their perceptions of the peer tutoring intervention. All four participants agreed that peer tutoring to practice reading was fair, that peer tutoring would be a good method to use with other children, and that peer tutoring in reading would help them do better in school. In addition, all participants disagreed that peer tutoring in reading may cause problems with their friends. These results indicate that tutee participants found peer tutoring to be an acceptable and effective intervention for improving their reading performance. It is hypothesized that tutee participants viewed peer tutoring positively because it provided them with one-on-one instruction with older fourth grade students whom they admired and allowed them to be actively engaged in reading while receiving immediate feedback.

Practical Implications

Reading is an academic skill that is critical for successful academic achievement. Many students with ADHD struggle in reading (DuPaul & Stoner, 1994, 1998). This study provided interventions used in the general education classroom to assist in improving reading performance for students exhibiting symptoms of ADHD. Although

the participants in this study did not show significant improvements in oral reading fluency, it is hypothesized that these interventions may prove beneficial if the limitations discussed in the following section are addressed (e.g., increased duration and frequency of the interventions). Students with ADHD are known to benefit from one-on-one, self-paced instruction that provides immediate feedback (DuPaul & Stoner, 1998). Peer tutoring is a practical instructional strategy that provides these benefits to students and requires minimal teacher time.

In addition to peer tutoring, participants in this study engaged in self-monitoring. Each tutee participant graphed their own performance on CBM reading probes. Self-graphing provided tutee participants with a visual display of their reading performance over the course of the seven weeks. Although not assessed directly in this study, when students monitor their own performance through self-graphing, they may be motivated to give their best effort (Fiala & Sheridan, 2003).

With the recent re-authorization of IDEA, the education system is adopting a model that emphasizes students' responses to empirically supported interventions. Therefore, the need for educators to be familiar with such interventions is evident. This study provides educators with a detailed description of how peer tutoring and self-monitoring interventions can be implemented and progress monitored in the general education classroom. In order to determine the effectiveness of interventions, educators must be familiar with appropriate progress monitoring techniques. This study demonstrates how curriculum-based measurement probes and self-graphing can be used to monitor interventions to determine effectiveness with individual students. Monitoring intervention effects is crucial in cases where students might not respond to initial

intervention attempts and adjusting the intervention might be needed. Although initial teacher time is needed for training students for initial implementation of these interventions, once students learn the steps involved, less teacher time is required, making it a practical intervention for the general education classroom.

Limitations

Several limitations should be considered when examining the results of this study. Future research that addresses these limitations could result in more favorable results. First, lengthening the duration of peer tutoring sessions may have a more positive impact on reading performance. Increasing the number of weeks or the number of days per week the intervention was implemented could have a positive influence on gains in oral reading fluency also. This study was conducted over the course of seven weeks. Of those seven weeks, Participant 1 received 6 weeks of intervention; Participant 2 received 4 weeks of intervention; Participant 3 received 3 ½ weeks of intervention; Participant 4 received 3 weeks of intervention. Ideally, the intervention would have been implemented for a minimum of ten weeks as initially proposed to demonstrate significant growth in reading performance. However, due to the time needed to identify tutee participants who met the inclusion criteria, the time lapse between sending home consent forms and retrieving signed consent forms, and the limited number of weeks left in the school year, the intervention was not implemented for ten weeks.

Another limitation of this study is that the tutee participants were not informed of their specific goal for the number of words read correct for the end of the seven week period. Participants were expected to make a three word gain per week; however, the participants were not informed of this. Instead, participants were informed that these

interventions were implemented to help improve their reading skills and that the goal was to increase the number of words they read correctly. Research suggests that pairing self-monitoring with self-graphing or self-developed goals may have a greater impact on intervention outcomes than incentives (Edwards, Salant, Howard, Brougher, & McLaughlin, 1995). In the present study, self-monitoring involved self-graphing; however, the goals developed were based on survey-level assessment data. Therefore, participants were not involved in the decision-making process for developing goals.

Thirdly, the intervention may not have been tailored to each student's specific reading skill deficit. The National Reading Panel (NRP) identifies five essential components to reading instruction (Langenberg et al., 2000). These components include: phonemic awareness, phonics, fluency, vocabulary, and comprehension. Reading practice has been identified as an important contributor to fluency (Langenberg et al., 2000). The peer tutoring intervention used in this study provided opportunities for participants to practice reading with a peer who provided error correction and feedback. Therefore, the intervention was geared towards students' oral reading fluency. However, participants may have had reading skill deficits in other areas identified by the NRP as necessary components to reading, which were not addressed in this study.

Fourthly, the reading materials used in the peer tutoring sessions were limited to stories from the reading curriculum instructed in the classroom. These tutee participants received reading instruction on one story from their Macmillan reading books per week. Per teacher participants' request, tutee participants were tutored using these same stories each week. Although research supports the use of instructing students with reading materials within their curriculum and instructional level, this researcher believes that

reading materials used in this study were limited. More specifically, reading materials used in peer tutoring sessions were the same stories these students were reading that week in their general education classrooms. Therefore, participants practiced reading the same weekly story three times. It is hypothesized that additional reading materials at the participants' instructional level would have provided these students with exposure to a larger variety of words, which could have impacted their performance on CBM reading probes.

Another limitation of this study involves school absences and a scheduled class event. Although this researcher requested that teachers consider good school attendance when identifying potential participants for this study, school absences still occurred inevitably. More specifically, Participant 2 was absent for two of the three peer tutoring sessions that occurred during the last week of intervention. In addition, CBM data collection did not occur on these days for this participant due to his absences. Participant 3 received two peer tutoring sessions during the final week of intervention due to his school absence on one of the peer tutoring session days that week. Lastly, Participants 2 and 4 received two versus three peer tutoring sessions during the sixth week of this study due to a scheduled class event occurring during the designated peer tutoring time. School attendance is required for participants to receive these interventions; therefore, when participants were absent they did not receive the intervention, which may have impacted the outcomes of this study.

Although consumer satisfaction ratings of the peer tutoring intervention were completed by tutee and teacher participants, evaluations of the self-monitoring component of this intervention were not included on the rating profiles. Therefore, input

received from teachers and tutee participants were based on their views of peer tutoring only. To gather qualitative data on teacher and tutee perceptions of self-graphing procedures used in this study, self-monitoring items should have been included on the consumer satisfaction rating profiles.

Potential tutee participants for this study were sent home parent consent forms, which offered parents the opportunity to meet with the principle investigator to assist in completing the ADHD-IV Rating scale – Home Version (DuPaul et al., 1998). However, none of the parents of the potential tutee participants chose to meet with the principal investigator. It is hypothesized that more accurate responses to the ADHD rating scale – Home Version (DuPaul et al., 1998) would have resulted from an opportunity for the researcher to clarify parents' questions regarding items from the rating scale. For Participant 3, parent responses on the ADHD rating scale differed substantially from teacher responses. English is this participant's second language; therefore, second language issues may have impacted the results of the ADHD-IV Rating Scale – Home Version (DuPaul et al., 1998) for this participant. Parent involvement is beneficial to intervention success. It is hypothesized that parent involvement may have had a positive influence on the effectiveness of this intervention. Parent involvement could have included tutee participants showing their self-monitoring graphs to their parents.

Recommendations for Future Research

The limitations discussed previously should be addressed in future studies related to peer tutoring and self-monitoring in the general education classroom in attempts to produce more positive outcomes. The following recommendations are suggested to assist future researchers in addressing the limitations of this study. First, the principal

investigator recommends that the duration of the peer tutoring sessions be lengthened to 20 minutes three times per week. In addition, this investigator suggests that the intervention should be implemented for a minimum of ten weeks to allow sufficient time for students to benefit from the peer tutoring and to demonstrate gains in the number of words read correctly.

To better identify specific reading skill deficits, it is suggested that additional reading assessments be included in future studies involving reading interventions. When considering additional reading assessments, future researchers should incorporate assessments which measure the five essential components of reading identified by the National Reading Panel. Interventions should be selected based upon each student's specific reading skill deficit.

To address the issue of the limited selection of reading materials provided in the current study, it is recommended that once participants' instructional levels in reading are determined that a variety of reading materials are made available for tutees to choose to read during tutoring sessions. Future research that incorporates a wider range of stories may expose participants to a wider variety of words. If participants are exposed to a wider variety of words, the participants have an opportunity to learn more words, which could have a positive impact on reading performance.

To gather qualitative data on the perceptions of the self-monitoring component of this intervention, future investigators could modify the CIRP and IRP to include this component. Each item from the CIRP and IRP could be expanded by adding the self-monitoring intervention; therefore, teacher and tutee participants would rate items based upon both the peer tutoring and self-monitoring interventions. Another alternative to

incorporating perceptions on the self-monitoring intervention would be to have a separate rating scale with items specific to the self-monitoring intervention. This alternative would allow researchers to assess and compare consumer satisfaction of each intervention separately. Lastly, another consideration related to consumer satisfaction is to have the tutors complete an intervention rating scale to gather their views on the effectiveness and acceptability of these interventions. This process is recommended due to the fact that peer tutors play an integral role in the peer tutoring process. Input gathered from the tutors could provide valuable information for evaluating and modifying these interventions.

It is suggested by this investigator that more effort is made to involve parents of tutee participants in future research endeavors. In this study, the principal investigator offered to meet with parents prior to implementation of the study to provide clarification of the study procedures and assist in answering questions related to the ADHD Rating scale – Home version. However, none of the participants' parents chose to take advantage of this offer.

Parent involvement can have a positive impact on students' academic success. Research indicates that parent-school involvement is associated with mastery of early basic school subjects (Marcon, 1999). As this relates to the current study, the principal investigator hypothesizes that parents could have played a motivating role in participants' performance. For example, tutees could have shown their graphs to their parents to share their progress.

A final recommendation for future research involves careful monitoring of the peer tutoring sessions. It is critical that the tutoring procedures are followed with

integrity. In this study, checklists were used to monitor peer tutoring sessions randomly. The information from these checklists indicates that verbal praise for tutees' error corrections were limited. In addition, this investigator noticed on one occasion that one of the tutors did not engage in the error correction procedures for all of the tutee's errors. More specifically, the tutor missed two of the tutee's errors. To ensure that the tutee's errors were corrected, this investigator engaged in the error correction procedures for the two missed errors. This tutor received a "booster" training session in peer tutoring procedures once the tutoring session ended. Since only 40% of the tutoring sessions were monitored using the procedural integrity checklists, the frequency that this tutor did not engage in the error correction procedures with 100% accuracy is unknown. To address this issue, future investigators should consider monitoring all peer tutoring sessions. In addition, researchers may consider providing tutors with inexpensive, academic related incentives (i.e. pencils, erasers, stickers) for following tutoring procedures with 100% accuracy. Lastly, researchers should consider verifying potential tutor participants' reading skill levels using curriculum-based measurement before selecting tutor participants.

Conclusions

In conclusion, this study investigated the impact of peer tutoring and self-monitoring strategies on the reading performance of children who exhibit symptoms of ADHD: Predominantly Inattentive Type. The purpose of this study was to expand upon the current peer tutoring literature that focuses on students with ADHD. Primarily the literature examines peer tutoring with this population in math. This study investigated the impact of peer tutoring in reading for students exhibiting symptoms of ADHD;

therefore, expanding upon the current literature in this area. The results indicate that participants demonstrated some improvement in the median number of words read correct as a result of these interventions; however, more research is needed to determine the effectiveness of these interventions. The teacher and tutee participants in this study rated the interventions as both acceptable and effective for improving reading achievement for children showing symptoms of ADHD. Several limitations, which may have had an impact on the outcomes of this study, were discussed. Based upon these limitations, several recommendations were suggested for future researchers to consider when examining these interventions with this population. This study contributes to the limited research available on reading interventions for students exhibiting symptoms of ADHD; Predominantly Inattentive type in general education classrooms.

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Appendices

Appendix A

Consent Forms

Parental Informed Consent

Social and Behavioral Sciences
University of South Florida

Information for Parents

Who are being asked to allow their child to take part in a research study

The following information is being presented to help you decide whether or not you want to allow your child to be a part of a minimal risk research study. Please read this carefully. If you do not understand anything, ask the person in charge of the study.

Title of research study: *The Impact of Self-monitoring and Peer Tutoring on Oral Reading Fluency for Children with Inattention Problems*

Person in charge of study: Principal Investigator: Shannon M. Leis, M. A.
Faculty Advisor: Kelly Powell-Smith, Ph.D.

Where the study will be done: Jesse Keen Elementary

Your child is being asked to participate because your child has been recommended to receive individual, one-on-one reading tutoring. It is believed that your child will benefit from receiving peer tutoring in reading.

General Information about the Research Study

The purpose of this research study is to examine the effects of self-monitoring and peer tutoring on the reading achievement for children with inattention problems.

Plan of Study

Your child's participation in this study will last a maximum of 10 weeks. He/she will receive peer tutoring 3 times per week for approximately 15 minutes. The session will take place in the back of your child's classroom.

Appendix A (Continued)

Procedures

During this study, the following procedures will occur:

1. Your child will be paired with a fourth grade peer tutor.
2. Your child will participate in peer tutoring for reading for 15 minutes, 3 times per week. Your child will read from reading materials used in his/her classroom while the peer tutor provides your child with corrective feedback to address errors your child may make while reading. Your child will have the opportunity to correct his/her errors and will receive positive praise for corrections made.
3. Your child will complete a timed oral reading task that will be administered by the examiner twice weekly. These reading tasks will be audiotaped for scoring purposes. Your child will graph the number of words read correct and errors. The examiner will show your child how to graph this information.
4. The examiner will give your child a survey, which will take approximately 5 minutes to complete. Items on the survey require a response from a 5-point scale (1= I agree and 5 = I do not agree). Examples of items on the survey include: "Peer tutoring to practice reading was fair;" and "Peer tutoring would be a good method to use with other children."
5. The examiner will assess your child's reading skills using the Woodcock-Johnson III Tests of Achievement, which will take approximately 15 minutes to administer.
6. The examiner is requesting that you, the parent, complete the enclosed home version of the ADHD Rating Scale-IV, which should take approximately 10 minutes to complete. In addition, the examiner is offering to meet with you at a mutually agreed upon time at Jesse Keen Elementary prior to conducting the study to answer questions you may have.
7. Your child's teacher will complete the school version of the ADHD Rating Scale-IV.
8. The examiner will review your child's cumulative school record and school medication records.
9. The examiner is offering to show parents how to conduct the tutoring at the conclusion of the study should it appear to be helpful.

Payment for Participation

At the end of this study, your child will receive a McDonald's gift certificate for his/her participation in this study.

Appendix A (Continued)

Benefits of Taking Part in this Research Study

The potential benefits for participating in this study include your child receiving individual attention and one-on-one instruction from the peer tutor. In addition, your child will receive additional practice in reading. If the findings from this study indicate that self-monitoring (graphing reading performance) and peer tutoring is effective at improving reading for children with inattention problems, school personnel could incorporate these strategies in the general education classroom. Self-monitoring and peer tutoring have the potential for improving the academic instruction and achievement of children with inattention problems.

Risks of Being a Part of this Research Study

Your child will participate in tutoring sessions three times each week during a time determined by the classroom teacher. Therefore, your child and the tutor may miss some class instruction. However, the researcher and the teacher will work together to minimize the amount of class instruction that is missed.

Confidentiality of Your Child's Records

You and your child's privacy and research records will be kept confidential to the full extent required by law. Authorized research personnel, employees of the Department of Health and Human Services, and the USF Institutional Review Board and its staff, and other individuals, acting on behalf of USF may inspect the records from this research project.

The results of this study may be published. The published results will not include your child's name or any other information that would personally identify your child in any way.

Data obtained from the teachers and parents regarding second and third grade participants will be kept in a locked file cabinet at Jesse Keen Elementary. Returned consent forms that include the names of each child (tutors and tutees) participating in this study will be kept in the same locked file cabinet. The researcher, faculty advisor, student's teacher, and school psychologist at Jesse Keen Elementary will be the only ones who have access to this data. This information will not be placed in the student's school records. A summary of the results from this study will be provided to any interested participant. The summary will be brief and will include whether or not the intervention was effective at increasing the reading skills of children with inattention problems.

Appendix A (Continued)

Volunteering to Take Part in this Research Study

Your decision to allow your child to participate in this research study is completely voluntary. You are free to allow your child to participate in this research study or to withdraw him/her at any time. If you choose not to allow your child to participate or if you remove your child from the study, there will be no penalty or loss of benefits that you or your child are entitled to receive. If you sign below allowing your child to participate in this study and your child meets inclusion criteria, your child may be selected for participation.

Questions and Contacts

- If you have any questions about this research study, contact Shannon Leis at (813) 657-8625.
- If you have questions about your rights as a person who is taking part in a research study, you may contact the Division of Research Compliance of the University of South Florida at (813) 974-5638.

Consent for Child to Take Part in this Research Study

I freely give my consent to let my child take part in this study. If my child meets inclusion criteria for participation, my child may be selected for participation in this study. I understand that this is research. I have received a copy of this consent form.

Signature of Parent
of child taking part in study

Printed Name of Parent

Date

Investigator Statement:

I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida's Institutional Review Board and that explains the nature, demands, risks, and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

Signature of Investigator

Printed Name of Investigator

Date

Appendix A (Continued)

Parental Informed Consent

Social and Behavioral Sciences
University of South Florida

Information for Parents

Who are being asked to allow their child to take part in a research study

The following information is being presented to help you decide whether or not you want to allow your child to be a part of a minimal risk research study. Please read this carefully. If you do not understand anything, ask the person in charge of the study.

Title of research study: *The Impact of Self-monitoring and Peer Tutoring on the Oral Reading Fluency of Children with Inattention Problems*

Person in charge of study: Principal Investigator: Shannon M. Leis, M. A.
Faculty Advisor: Kelly Powell-Smith, Ph.D.

Where the study will be done: Jesse Keen Elementary

Your child is being asked to participate because your child has been recommended by his/her teacher to tutor a second or third grader in reading due to your child's above average reading skills and display of model behavior in school.

General Information about the Research Study

The purpose of this research study is to examine the effects of self-monitoring and peer tutoring on the reading achievement for children with inattention problems.

Plan of Study

Your child's participation in this study will last a maximum of 10 weeks. He/she will peer tutor a second or third-grade child with inattention problems. Your child will participate in three peer tutor training sessions for approximately 20 minutes each provided by the researcher. During peer tutoring sessions, your child will follow along while the child reads and stop the child when an error is made. Your child will provide the correct word to the child and request the child to reread the sentence in which the error occurred using the correct pronunciation of the word. Tutoring sessions will occur three times per week for approximately 15 minutes. The sessions will take place in the back of the tutee's classroom.

Payment for Participation

At the end of this study, your child will receive a McDonald's gift certificate for his/her participation in this study.

Appendix A (Continued)

Benefits of Taking Part in this Research Study

If the findings from this study indicate that self-monitoring and peer tutoring is effective at improving the oral reading fluency for children with inattention problems, school personnel could incorporate these strategies in the general education classroom. Self-monitoring and peer tutoring have the potential for improving the academic instruction and achievement of children with inattention problems.

Risks of Being a Part of this Research Study

Your child will tutor a second or third grade student three times per week during a time determined by the classroom teacher. Therefore, your child may miss some class instruction. However, the researcher and teacher will work together to minimize the amount of class instruction that is missed.

Confidentiality of Your Child's Records

You and your child's privacy and research records will be kept confidential to the full extent required by law. Authorized research personnel, employees of the Department of Health and Human Services, and the USF Institutional Review Board and its staff, and other individuals, acting on behalf of USF may inspect the records from this research project.

The results of this study may be published. The published results will not include your child's name or any other information that would personally identify your child in any way.

No data will be collected on your child. Any data obtained from the teachers and parents regarding the second and third grade children will be kept in a locked file cabinet at Jesse Keen Elementary. Returned consent forms that include the names of each child (tutors and tutees) participating in this study will be kept in the same locked file cabinet. The researcher, faculty advisor, student's teacher, and school psychologist at Jesse Keen Elementary will be the only ones who have access to these data.

Volunteering to Take Part in this Research Study

Your decision to allow your child to participate in this research study is completely voluntary. You are free to allow your child to participate in this research study or to withdraw him/her at any time. If you choose not to allow your child to participate or if you remove your child from the study, there will be no penalty or loss of benefits that you or your child are entitled to receive.

Questions and Contacts

- If you have any questions about this research study, contact Shannon Leis at (813) 657-8625.
- If you have questions about your rights as a person who is taking part in a research study, you may contact the Division of Research Compliance of the University of South Florida at (813) 974-5638.

Appendix A (Continued)

Consent for Child to Take Part in this Research Study

I freely give my consent to let my child take part in this study. I understand that this is research. I have received a copy of this consent form.

Signature of Parent
of child taking part in study

Printed Name of Parent

Date

Investigator Statement:

I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida's Institutional Review Board and that explains the nature, demands, risks, and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

Signature of Investigator

Printed Name of Investigator

Date

Appendix A (Continued)

The following information is being presented to help you decide whether or not you want to participate in a minimal risk research study. Please read carefully. If you do not understand anything, ask the Person in Charge of the Study.

Title of Study:	<i>The Impact of Self-Monitoring and Peer Tutoring on Oral Reading Fluency for Children with Inattention Problems</i>
Principal Investigator:	Shannon M. Leis, M.A.
Study Location(s):	Jesse Keen Elementary

Dear Teacher,

I am conducting a study on the impact of self-monitoring and peer tutoring on oral reading fluency for children exhibiting symptoms of Attention-Deficit/Hyperactivity Disorder (ADHD). The purpose of the study is to determine the effectiveness of self-monitoring and peer tutoring on the reading skills of second and/or third grade students with inattention problems.

I am requesting your participation, which will involve completing the school version of the ADHD Rating Scale-IV and a paper and pencil questionnaire about your perceptions regarding the effectiveness and acceptability of self-monitoring and peer tutoring interventions. You will only be asked to complete this rating scale and questionnaire for student(s) whose parents have consented for them to participate in the study. The total time commitment will be about 20 minutes.

Your participation in this study is strictly voluntary. If you choose not to participate or if you withdraw from the study at any time, there will be no penalty to you. Your job status will not be affected by your decision to participate. The questionnaire is anonymous. The results of the research study may be published, but your name and the names of your students will not be reported.

There are no foreseeable risks to you if you agree to participate. Your privacy and research records will be kept confidential to the extent of the law. All information collected will be assigned identification numbers and kept separate from identifying information. Identifying information (e.g., names) will not appear in any results. Only authorized research personnel, employees of the Department of Health and Human Services, the USF Institutional Review Board and its staff, and other individuals, acting on behalf of USF may inspect the records from this research project. Direct benefits to you for participating are not known.

Appendix A (Continued)

If you have any questions about this research study, contact **Shannon M. Leis at 813-657-8625** or **Dr. Kelly A. Powell-Smith at 813-974-9698**. If you have questions about your rights as a person who is taking part in a research study, you may contact a member of the Division of Research Compliance of the University of South Florida at (813) 974-5638.

Your Consent—By signing this form I agree that:

- I have fully read or have had read and explained to me this informed consent form describing a research project.
- I have had the opportunity to question one of the persons in charge of this research and have received satisfactory answers.
- I understand that I am being asked to participate in research. I understand the risks and benefits, and I freely give my consent to participate in the research project outlined in this form, under the conditions indicated in it.
- I have been given a signed copy of this informed consent form, which is mine to keep.

Signature of Participant

Printed Name of Participant

Date

Investigator Statement

I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida’s Institutional Review Board. That contains the nature, demands, risks and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

Signature of Investigator

Shannon M. Leis, M. A.

Printed Name of Investigator

Date

I have carefully explained to the subject the nature of the above protocol. I hereby certify that to the best of my knowledge the subject signing this consent form understands the nature, demands, risks and benefits involved in participating in this study.

Signature of Investigator
Or Authorized research
investigators designated by
the Principal Investigator

Printed Name of Investigator

Date

Appendix A (Continued)

Institutional Approval of Study and Informed Consent

This research project/study and informed consent form were reviewed and approved by the University of South Florida Institutional Review Board for the protection of human subjects. This approval is valid until the date provided below. The board may be contacted at (813) 974-5638.

Appendix B

Tutor Recommendation Form

Teacher's Name: _____ **Grade Level:** _____

Please list below students from your classroom that you would like to recommend as peer tutors. *The students should be above average readers and well-behaved.*

Student's Name

1. _____
2. _____
3. _____

Please indicate the best time of day for these students to provide tutoring on Tuesdays, Wednesdays, and Thursdays (15 minutes each day).

Please return this form to the USF mailbox by _____.

Thank you!

Shannon Leis
USF School Psychology Practicum Student

Appendix C

Peer Tutoring Training Checklist

- _____ 1. Researcher reviewed directions with tutor-in-training for peer tutoring in reading (Appendix D).
- _____ 2. Researcher models role of the peer tutor.
- _____ 3. Researcher and tutor-in-training role play with the researcher as tutor and the tutor-in-training as tutee.
- _____ 4. Role play with the tutor-in-training as tutor and the researcher as tutee.
- _____ 5. Tutor-in-training implements the procedures accurately (in accordance with directions in Appendix D).

Appendix D

Peer Tutoring Implementation Checklist

Tutor Name: _____ Date: _____

- _____ 1. Did the peer tutor arrive on time for the session?
- _____ 2. Did the peer tutor use the appropriate reading materials during the session?
- _____ 3. Did the peer tutor adhere to the peer tutoring procedures?

_____ Tutor presented a story from tutee's reading curriculum.

_____ Tutor instructed the tutees to begin reading aloud. Tutor set timer for 5 minutes to begin when the tutee began reading the story.

_____ When the tutee made errors such as omission of words, substitution of words, or mispronunciations of words, the tutor pointed to the place of the error and correctly stated the error word.

_____ The tutor instructed the child to restate the error word and reread the sentence correctly.

_____ The tutor provided positive praise for tutee's corrections.

_____ At the end of the five minutes, the tutor reset the timer for another five minutes and redirected the tutee to return to the beginning of the passage to read aloud. These procedures continued until the tutor completed three 5 minute readings totaling 15 minutes for the entire tutoring session.

- _____ 4. Did the peer tutor complete the session within 15 minutes?

Appendix E

Tutee Graph Training Checklist

- _____ 1. Researcher presents graph with labeled axes.
- _____ 2. Researcher provides tutee with 5 sample scores for Words Read Correct Per Minute (WCM) and errors with five respective dates sample scores were obtained.
- _____ 3. Researcher informs tutee on graphing procedures verbally.
- _____ 4. Researcher models steps for graphing one of the sample scores by locating the date score was obtained on the x axis and locating score on y axis, making a mark where these two lines intersect.
- _____ 5. Researcher instructs tutee on each graphing step as the tutee performs each step.
- _____ 6. Researcher instructs tutee to graph three sample CBM scores without researcher's assistance.
- _____ 7. Tutee graphs three sample scores with 100% accuracy.

Appendix F

Progress Monitoring Data for Participant 1

Data collection session	WCM	Errors
1	53	3
2	32	5
3	36	4
4	20	9
5	47	5
6	36	7
7	58	2
8	36	8
9	55	5
10	52	4
11	41	3
12	42	4

Appendix G

Progress Monitoring Data for Participant 2

Data collection session	WCM	Errors
1	66	6
2	55	2
3	83	5
4	82	4
5	44	7
6	53	8
7	63	3
8	82	2
9	-	-
10	-	-

Note.- Indicates data not collected due to participant's absence

Appendix H

Progress Monitoring Data for Participant 3

Data collection session	WCM	Errors
1	50	6
2	31	9
3	53	4
4	51	2
5	59	4
6	-	-
7	40	8

Note.- Indicates data not collected due to participant's absence

Appendix I

Progress Monitoring Data for Participant 4

Data collection session	WCM	Errors
1	51	8
2	54	4
3	66	4
4	98	5
5	46	10
6	54	4

Appendix J

Children's Intervention Rating Profile

	I Agree				I Do Not Agree
1. Peer tutoring to practice reading was fair.	1	2	3	4	5
2. Peer tutoring to practice reading may cause problems with my friends.	1	2	3	4	5
3. There are better ways to practice reading than peer tutoring.	1	2	3	4	5
4. Peer tutoring would be a good method to use with other children.	1	2	3	4	5
5. I like peer tutoring for practicing reading.	1	2	3	4	5
6. I think that peer tutoring in reading would help me do better in school.	1	2	3	4	5

Appendix K

Intervention Rating Profile

The purpose of this questionnaire is to obtain information that will aid in the selection of classroom interventions. These interventions will be used by teachers of children with academic and behavior problems. Please circle the number which best describes your agreement or disagreement with each statement (e.g., 1 = strongly disagree, 6 = strongly agree).

	Strongly Disagree	Slightly Disagree	Disagree	Agree	Slightly Agree	Strongly Agree
1. The child's reading problem is severe enough to warrant use of this intervention.	1	2	3	4	5	6
2. This intervention should prove effective in enhancing the child's reading performance.	1	2	3	4	5	6
3. This would be an acceptable intervention for the child's reading problem.	1	2	3	4	5	6
4. Overall, the intervention would be beneficial for the child.	1	2	3	4	5	6
5. This intervention would not result in negative side effects for the child.	1	2	3	4	5	6
6. I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
7. Most teachers would find this intervention appropriate for enhancing academic achievement.	1	2	3	4	5	6
8. Most teachers would find this intervention suitable for the academic problem described.	1	2	3	4	5	6
9. I would be willing to use this intervention in the classroom setting.	1	2	3	4	5	6
10. This intervention is consistent with those I have used in the classroom setting.	1	2	3	4	5	6
11. This intervention would be appropriate for a variety of children.	1	2	3	4	5	6
12. I liked the procedures used in this intervention.	1	2	3	4	5	6

Figure Caption

Figure 1 . Progress monitoring data for participants 1, 2, 3, and 4 across 7 weeks

