

INCREASING READING FLUENCY PERFORMANCE OF  
STUDENTS WITH EMOTIONAL AND BEHAVIORAL DISORDERS

BY

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## ABSTRACT

Reading fluency has been identified as one of the essential skills students must develop in order to learn to read. Fluency is also a critical factor in reading comprehension (National Reading Panel [NRP], 2000). Many students, however, lack the ability to read age-appropriate materials fluently, including students with emotional and behavioral disorders.

The primary purpose of this study was to examine the oral reading fluency, reading accuracy, and reading comprehension performance of five students with emotional and behavioral disorders as a result of using two reading interventions: repeated reading and listening teacher modeling. Both methods have been widely used and empirically evaluated as evidence-supported reading programs. During the repeated readings intervention, students repeatedly read a specific passage multiple times to a teacher without explicit assistance (Begeny, Krouse, Ross & Mitchell, 2009; Lo, Cooke & Starling, 2011; Stahl & Kuhn, 2002) in order to reach a predetermined criterion of words read correctly during a one-minute time trial (Lo et al., 2011). Teacher modeling involved the student receiving an explicit model of the text passage while following along silently. Under this condition, students were provided a correct model of the desired reading passage by a teacher prior to their attempt to read on their own (Dawson, Venn & Gunter, 2000). An alternating treatment design was employed to determine the effects of the two fluency interventions; i.e., repeated reading and teacher modeling.

Results supported the repeated reading intervention followed by the teacher modeling as most effective for improving the oral reading fluency rates of students with emotional and behavioral disorders. Limitations and recommendations for future research are addressed.

## **DEDICATION**

This work is dedicated to my father and mother, Joe and Teresa Hanway. My parents have always loved and supported me and taught me the value of learning and perseverance. They taught me to understand the meaning of responsibility and accountability and the importance of finishing my education. Through their actions and love, they modeled commitment, dedication, and hard work for our family. All of these traits were needed to complete this dissertation and doctoral program. Although my mother passed away in 1997, her spirit, unconditional love, and aspirations for a better tomorrow have been instrumental in the completion of this journey. I am so thankful to have such wonderful parents. Mom, I think of you often, you are truly missed, I love you.

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# CHAPTER 1

## INTRODUCTION

The long-term prognosis for students with emotional and behavioral disorders (EBD) in school and consequently beyond is not promising, particularly when effective and timely interventions are not provided. Increasing opportunities for the success of students with EBD in school and post school requires not only meeting their behavioral needs but addressing learners' academic needs as well (Epstein, Kinder & Bursuck, 1989; Ryan, Reid, & Epstein, 2004; Vaughn, Levy, Coleman & Bos, 2002). Appropriate academic interventions assist students with EBD in acquiring the necessary reading skills to effectively respond to demanding school requirements and in competing for meaningful jobs in the workplace (Hock et al., 2009; Hock & Deshler, 2003). Students with EBD typically perform below grade level when compared to their non-disabled peers (Trout, Nordness, Pierce & Epstein, 2003), yet they are held to the same grade level standards as other students. The measure and the accountability for student success is no longer aligned solely with each student's individualized education program (IEP) and individual special education programming. Rather, student performance and outcomes, including for learners with disabilities, is part of the larger accountability requirements of the Elementary and Secondary Education Act (ESEA, formerly known as NCLB, 2001). With its recent reauthorization, the Individuals with Disabilities Act (IDEIA, 2004), is now aligned with current educational legislation to continue high expectations for all students, including those identified as having a disability. ESEA (2001) reflects an era in which all children are expected to learn, high academic standards are expected, and schools are held accountable for student success. The need to achieve established accountability standards and demonstrate adequate yearly progress (AYP) (U.S. Department of Education, 2003a) for students who have traditionally been

unsuccessful in the classroom has significantly impacted public education and requires the use of effective and efficient practices in academic instruction (Vannest, Temple-Harvey, & Mason, 2009).

Historically, students with EBD have had a long legacy of negative school and life outcomes. Research has identified the EBD population as more likely to experience academic failure, grade retention, and a higher risk for dropping out of high school than any other disability group (Kauffman, 2001; Lane, Barton-Arwood, Nelson, & Wehby, 2008; Sitlington & Neubert, 2004; U.S. Department of Education, 2003b; Wagner & Cameto, 2004; Wagner & Davis, 2006; Wagner, Kutash, Duchnowski, & Epstein, 2005). These students are also less likely to receive A and B letter grades, have poor social adjustment, and exhibit more behavioral difficulties than other learners with disabilities (Bradley, Henderson, & Monfore, 2004; Kauffman, 2001). Trout et al. (2003) found that 91% of students with EBD were “academically deficient” (p. 204), and none performed above grade or age levels.

Despite the poor academic outcomes of students with EBD, annual yearly progress initiatives under ESEA mandate that the academic achievement of students with disabilities be measured in the same manner as their non-disabled peers (U.S. Department of Education, 2003a, 2003b). Under AYP, at least 95% of students receiving special education must be assessed (U.S. Department of Education, 2004), and failure of specific subgroups to achieve adequate progress may result in serious consequences (McLaughlin & Thurlow, 2003). Annual Yearly Progress is measured by students demonstrating progress in specified levels of achievement after two years and relative to subsequent thresholds (U.S. Department of Education, 2003a). Proficiency standards are presently measured in reading and math. Failure to meet progress markers may result in the identification of schools needing improvement, supplemental educational services

for students from low-income families, implementation of corrective actions, and school restructuring after failure to meet the criteria for consecutive years (U.S. Department of Education, 2003a).

Although a child's rate of academic progress year-to-year is not the only measure of progress for students with disabilities, it is clearly an important variable. Moreover, it is a public measure of success and progress, and there are significant consequences for districts that fail to meet the established standards. Accountability and AYP do not measure changes in social behavior; rather they focus exclusively on academic performance. As such, teachers are expected to use their expertise to address the educational needs of all students, including high risk students and those with emotional and behavioral problems (Rosenberg, Sindelar, & Hardman, 2004). There has been a shift in the philosophical approach that supports a belief that academic achievement gains for students with EBD requires not only interventions focused on social behavior, but also an increased emphasis on using effective academic intervention practices to mitigate inappropriate social behaviors (Ryan et al., 2004; Vaughn et al., 2002).

Although research has documented a comorbid relationship between academic underachievement and students with behavioral challenges, such as those with EBD (Lane et al., 2007; Lane, O'Shaughnessy, Lambros, Gresham, & Beebe-Frankenberger, 2001; Levy & Vaughn, 2002; Kauffman, 2001; Nelson, Benner, Lane, & Smith, 2004; Reid, Gonzalez, Nordness, Trout, & Epstein, 2004) there is limited research on academic interventions for students with EBD (Coleman & Vaughn, 2000; Falk & Wehby, 2001; Lane, 2004; Pierce, Reid, & Epstein, 2004; Rivera, Al-Otaiba & Koorland, 2006; Ryan et al., 2004; Vannest et al., 2009; Vaughn et al., 2002). The limited extant literature makes the task of finding scientifically based research practices a challenging and daunting one for practitioners. Moreover, the limited



available research results for this population are not promising. Some research supports the assumption that an improvement in academic skills and performance results in improved behavior (Lane, Little, Redding-Rhodes, Phillips, & Welsh, 2007; Lane et al., 2001; Lane, Wehby, Menzies, Gregg, Doukas, & Munton, 2002). Other research suggests that students' academic deficits do not improve over time, or rather become worse as they age, independent of academic interventions (Anderson, Kutash, & Duchnowski, 2001; Lane et al., 2007; Mattison, Hooper, & Glassberg, 2002; Reid et al., 2004). Vaughn and her colleagues state "students' behavioral and academic successes are not independent: Improved behavior is associated with academic success, which links to further improvements in behavior" (Vaughn et al., 2002, p. 2). Historically, researchers have debated the issue of which came first; academic problems or behavior problems. The extant literature reveals that multiple factors contribute to behavior and academic problems, and researchers have been unable to consistently and reliably isolate specific variables responsible for these difficulties (Hinshaw, 1992). Independent of the causes of these problems, it is imperative that researchers address both behavior and academic problems in order to improve outcomes for children with EBD.

Specifically in the area of reading, Coleman and Vaughn (2000) identified a gap in the literature on the identification of effective reading strategies for students with emotional and behavioral concerns. There are research-based reading methodologies identified in the literature, such as direct instruction (Adams & Carnine, 2003), partner reading (Fuchs, Fuchs, Mathes, & Simmons, 1997; Utley, Mortweet, & Greenwood, 1997; Vaughn et al., 2002), and collaborative strategic reading (Klingner, Vaughn, Arguelles, Hughes, & Leftwich, 2004; Klingner & Vaughn, 1999; Vaughn & Klingner, 1999; Vaughn, Klingner, & Bryant, 2001) for students with disabilities. However, there is limited knowledge regarding effective methods for students with

EBD. Vannest et al. (2009) reviewed the academic intervention literature for students with EBD from 1991 to 2006. She and her colleagues found 20 articles related to academic interventions that revealed positive results for students with EBD. Of those 20, only seven instructional interventions related specifically to reading. This is an alarming statistic, considering academic deficits tend to increase over time, and positive long term intervention gains become more difficult to achieve as students become older (Nelson et al., 2004; Nelson, Lane, Benner, & Kim, 2011; O'Shaughnessy, Lane, Gresham, & Beebe-Frankenberger, 2003).

The magnitude of academic and behavioral problems facing students with EBD at any rate is startling. There is also convincing evidence that many students with EBD may continue to struggle academically even with interventions (Nelson et al., 2011). Thus, a primary concern of educators should be ways to improve reading instruction by using evidence-based research interventions to meet multiple needs (Lane, 2007). Such methods are essential in order to significantly increase academic and behavioral growth of learners with EBD.

Reading improvement is a critical and salient topic for children with EBD. "More than any other area, school success is dependent on knowing how to read and understanding what is read" (Vaughn et al., 2002, p. 2). Reading is a keystone skill that offers options and opportunities for alternative forms of learning and entertainment (Nelson et al., 2011). This research proposed to enhance the existing knowledge base regarding effective reading interventions for students with emotional and behavioral concerns. Academic intervention is a salient variable in changing school performance, and the improvement of academic functioning is a critical component of the social, emotional, and behavioral measures that translate to the broader outcomes of successful living. By determining the effects of previously proven interventions, repeated reading (Al-Otaiba & Rivera, 2006; Begeny et al., 2009; Kostewicz & Kubina, 2008; Lo et al., 2011; Musti-

Rao, Hawkins, & Barkley, 2009; NRP, 2000; Petscher & Kim, 2011; Scott & Shearer-Lingo, 2002; Staubitz, Cartledge, Yurick, & Lo, 2005); and teacher model (Begeny et al., 2009; Dawson et al., 2000; Kuhn, 2005; Musti-Rao et al., 2009; Stahl & Kuhn, 2002), we can better understand how to improve academic instruction of students with emotional and behavior concerns.

### **Purpose of the Study**

The purpose of this dissertation research was to test the effectiveness of individualized interventions on the reading fluency, accuracy, and comprehension of students identified with emotional and behavioral disabilities. Reading fluency has been identified as one of five essential early-reading skills students must develop for reading comprehension (NRP, 2000). Fluent readers demonstrate accuracy, speed, and proper expression when reading orally; this helps sustain the meaning of the text as well as increase ties to a reader's background knowledge (NRP, 2000).

Accuracy in word recognition is important because it helps to maintain the meaning of the text. Through application of automatic word recognition skills and the ability to sound out unfamiliar words, fluent readers connect meaning to the text, aiding in reading comprehension. Accuracy in reading supports students in becoming more proficient readers, because if reading is laborious and inefficient, it will be difficult for the child to remember what has been read and relate those ideas to their background knowledge and experiences (NRP, 2000).

Comprehension is also critically important to the development of reading skills. It has been identified as the “‘essence of reading,’ critical not only to academic learning in all participant areas but to lifelong learning as well” (NRP, 2000 p. 13). Comprehension is a complex neurological process that combines vocabulary development and instruction with an overall understanding of what has been read and an intentional internal interaction between the

reader and the text. Comprehension strategies and skills must be explicitly taught by teachers (NRP, 2000).

Related to these core elements of reading instruction, the main focus of this study was to determine if repeated reading or teacher modeling of a passage would have a greater impact on the reading abilities of students identified with emotional and behavioral problems. Thus the study focused on students' (a) reading fluency, (b) reading accuracy rate, and (c) reading comprehension of a passage as a result of interventions based on repeated reading and teacher model.

## **CHAPTER 2**

### **REVIEW OF THE LITERATURE**

A child who is emotionally disturbed has an inability to learn that cannot be explained by intellectual, sensory, or health factors (U. S. Department of Education, 2006). Students with disabilities make up 13.2% of the total student population (National Center for Education Statistics [NCES], 2010). Of that number, students with emotional and behavioral disorders (EBD) make up 6.5% of students with disabilities (NCES, 2010). However, over the past decade, there has been limited research on academic interventions addressing the academic needs of students with EBD. In spite of the relatively limited attention given this topic, research suggests when appropriate treatments are applied, children with EBD often show positive academic gains in reading comprehension (Wehby, Falk, Barton-Arwood, Lane, & Cooley, 2003). Given the long-term relatively poor prognosis for students with EBD, the lack of research on academic interventions for this population of students is of significant concern.

A literature review was conducted focusing on academic interventions for students with emotional and behavioral disorders to include 1991-2011. Using the University of Kansas library search engine and the ERIC database a search was conducted of keywords and titles individually and in combination or variations of the following terms: academic, intervention, emotional disorders, behavior disorders, reading, reading performance, and oral reading fluency. To avoid omission, a hand search or reference pages was also conducted of relevant articles.

#### **Academic Performance**

Historically, students with EBD have had a long legacy of negative school and life outcomes. Research has identified the EBD population as more likely to experience academic failure, grade retention, and a higher risk for dropping out of high school than any other

disability group (Kauffman, 2001; Lane et al., 2008; Sitlington & Neubert, 2004; U.S. Department of Education, 2003b; Wagner & Cameto, 2004; Wagner & Davis, 2006; Wagner et al., 2005). These students are also less likely to receive A and B letter grades, more likely to have poor social adjustment, and exhibit more behavioral difficulties than other learners with disabilities (Bradley et al., 2004; Kauffman, 2001).

Students with EBD typically perform below grade level (Trout et al., 2003) as a result of their disability; specifically, 91% of students with EBD are “academically deficient.” Reid et al. (2004) reported finding a moderate to large (-.69) overall discrepancy in the academic performance of students with EBD compared to students without a disability. These researchers reported that the overall mean achievement level of students with EBD was at the 25<sup>th</sup> percentile, regardless of the setting in which they were served (Reid et al., 2004). Furthermore, the literature suggests that the academic deficits of students with EBD do not improve over time, but rather may become worse as they age (Anderson et al., 2001; Lane et al., 2007; Mattison et al., 2002; Nelson et al., 2004; Reid et al., 2004).

Lane et al. (2007) examined the academic, social, and behavioral outcomes of students with comorbid academic deficits and behavioral concerns who were served in a self-contained setting. The authors confirmed the findings of previous research (Lane et al., 2005; Mooney, Epstein, Reid & Nelson, 2003; Nelson et al., 2004; Reid et al., 2004; Trout et al., 2003) that students with EBD have below average academic performance. Group scores for both elementary and secondary learners fell well below the 25<sup>th</sup> percentile in academic areas. Social and behavioral data also indicate substandard scores between the 30<sup>th</sup> and 35<sup>th</sup> percentiles.

### **Academics and Behavior**

Nelson, Lane, Benner, and Kim (2011) completed a comprehensive literature review to identify the collateral effects of literacy instruction on the social adjustment of students with or at risk for behavior disorders. The authors reviewed treatment outcomes and established that there is no collateral, positive effect on the social adjustment of students. This conclusion suggests that academic underachievement does not necessarily lead to problem behaviors. However, the authors concur with the recommendations of other scholars who believe that there is a need to support both academic and social domains (Nelson et al., 2011; Nelson, Duppong-Hurley, Synhorst, Epstein & Stage, 2009; Stewart, Benner, Martella, & Marchand-Martella, 2007).

### **Reading Instruction**

Coleman and Vaughn (2000) identified a gap in the literature related to the identification of effective reading strategies for students with emotional and behavioral disorders. There are research-based reading intervention methodologies such as direct instruction (Stein, Carnine, & Dixon, 1998), partner reading (Fuchs et al., 1997; Utley et al., 1997), and collaborative strategic reading (Klingner & Vaughn, 1999; Vaughn & Klingner, 1999) for students with disabilities. However, there is limited extant research specifically related to reading interventions for students with emotional and behavioral disorders.

Vannest and colleagues (2009) reviewed academic interventions for students with EBD. In a review of the research from 1991 to 2006, they found 20 articles related to academic interventions that delineated positive results for students with EBD. Of those 20, only seven instructional interventions related specifically to reading. These findings support the assumption that there is limited research on successful academic interventions for students with EBD.

### **Reading Fluency**

Oral reading fluency (ORF) is commonly defined as a student's ability to read with speed, accuracy, and proper expression (NRP, 2000). Others define oral reading fluency as the ability to read text quickly and accurately with proper phrasing and expression, thereby reflecting the ability to concurrently decode and comprehend text (Valencia et al., 2010). Oral reading fluency has been identified as a critical component of skilled reading and a skill that is necessary for reading comprehension (NRP, 2000). Research has also indicated that over 40% of fourth grade students are "nonfluent" readers (Daane, Campbell, Grigg, Goodman & Oranje, 2005; Pinnell et al., 1995). Furthermore, a correlation between reading fluency, comprehension, and an individual's overall reading ability exists (Daane et al., 2005; Fuchs, Fuchs, Hosp, & Jenkins, 2001; NRP, 2000; Pinnell et al., 1995; Shinn & Good, 1992; Therrien, 2004). Readers who read words accurately, rapidly, and efficiently have improved comprehension because students who have not developed fluency rates have more difficulty establishing meaning of what they read; the reader is primarily focused on decoding and is unable to devote attention to comprehension (NRP, 2000; Pikulski & Chard, 2002). Therefore, it is suggested that children with and without disabilities would benefit from interventions targeted to improve reading fluency since reading practice is an important contributor to fluency (Begeny et al., 2009; NRP, 2000).

"Fluency builds on a foundation of oral language skills, phonemic awareness, familiarity with letter forms, and efficient decoding skills" (Pikulski & Chard, 2002, p. 517). A reader who is not fluent must alternate between two components of reading: word identification or decoding and comprehension in order to derive meaning from the text. If attention is consumed by decoding, it limits the reader's ability to comprehend the text they are reading. Therefore, the ability to decode is essential for high levels of reading achievement (Chard, Ketterlin-Gellar, Baker, Doabler, & Apichatabutra, 2009, Pikulski & Chard, 2002).



Stanovich (1986) established a direct link between fluency and the amount of reading in which an individual engages. He found that fluent readers are more likely to read than those who find reading difficult. Thus fluent readers continue to develop their reading skills, fluency, and related reading assets, whereas non-fluent readers, who commonly avoid reading, fall further and further behind. A lack of grade level reading skills interferes with performance during instruction of all academic areas.

Fore, Boon, Burke, and Martin (2008) evaluated the correlation between curriculum-based measures (CBM) and standardized testing in relationship to oral reading fluency (ORF) rates and reading comprehension. Findings confirmed that assessment of reading comprehension is similar to assessing oral reading fluency. Based on the use of CBM, a student who displays poor oral reading skills is likely to have comprehension skills that are equal to or lower than their reading fluency levels (Fore et al., 2008). Students who have oral reading fluency deficiencies may not warrant additional standardized assessment regarding their ability to comprehend the material. Rather, immediate feedback may be gleaned from using CBM to predict student performance, since rates of ORF directly correlate to comprehension skills (Fore et al., 2008). Others (Petscher & Kim, 2011) have reported that the relationship between oral reading fluency and comprehension varies. That is, it is dependent upon the students' reading level (i.e., they found a weaker relationship between ORF and comprehension for students with lower reading ability than for those with higher reading fluency).

Al-Otaiba and Rivera (2006) examined oral reading fluency instruction for students with EBD and recommended individualizing fluency instruction concurrent with the use of behavioral principles such as praise, tangible reinforcement, and self-monitoring. These recommendations

were believed to be basic steps in helping to close the achievement gap of students with EBD in relationship to their nondisabled peers.

### **Program Specific Interventions**

Specific intensive comprehensive reading programs exist to meet the challenging reading needs of students with disabilities. Programs such as *Open Court Reading* and *Great Leaps* incorporates scripted explicit instruction of reading skills to address the skills necessary for reading acquisition (Scott & Shearer-Lingo, 2002; Wehby et al., 2003). The research has established both programs as effective for students with EBD (Scott & Shearer-Lingo, 2002; Wehby et al., 2003), but do require the purchase of additional curricula.

Scott and Shearer-Lingo (2002) examined the effects of reading fluency instruction on middle school students with EBD receiving services in a self-contained setting. The authors found that the *Great Leaps* reading program (Campbell & Mercer, 1994) was successful in increasing the oral reading fluency and academic on-task behavior of three students identified with EBD. Similar findings were established by Wehby et al. (2003), who reported moderate gains in reading achievement for students with EBD who were taught using a modified version of the Open Court Reading curriculum, Peer-Assisted Learning Strategies (PALS).

### **Repeated Readings**

Repeated reading intervention has been well established in the research literature as an effective practice for improving both reading fluency and comprehension (Al-Otaiba & Rivera, 2006; Begeny et al., 2009; Kostewicz & Kubina, 2008; Lo et al., 2011; Musti-Rao et al., 2009; NRP, 2000; Petscher & Kim, 2011; Scott & Shearer-Lingo, 2002; Staubitz et al., 2005).

Repeated reading involves having a student repeatedly read a specific passage to a teacher or peer monitor without explicit assistance (Begeny et al., 2009; Stahl & Kuhn, 2002; Lo et al.,

2011), in order to reach a predetermined criterion of words read correctly during a one-minute time trial (Lo et al., 2011). Research has confirmed repeated reading is an effective intervention for improving various types of reading difficulties and has been associated with significant improvements in reading fluency and comprehension (Begeny et al., 2009; Therrien, 2004).

Kostewicz and Kubina (2010) compared the use of repeated reading with interval sprinting, using short timing intervals across a reading passage, on oral reading fluency of students with and without disabilities. Their results delineated little difference between the two intervention methods; overall results showed that the participants met the reading criterion under the outlined procedures regardless of which of the interventions was used.

Staubitz and colleagues (2005) evaluated the effects of a peer-mediated repeated reading intervention on the oral reading fluency and comprehension of urban fourth and fifth grade students with and at risk for EBD. Results showed positive gains in reading fluency and comprehension of all students. Improvements in fluency and comprehension also generalized to unpracticed reading passages, demonstrating overall utility of the intervention for this population (Staubitz et al., 2005).

Musti-Rao, Hawkins, and Barkely (2009) assessed the effects of a peer-mediated repeated readings intervention on urban fourth grade students who demonstrated risk markers for reading failure. Results indicated that all students improved their oral reading fluency rate with repeated reading; however, none of the students met grade level benchmark goals at the end of the study. Although grade level benchmark goals were not reached, the repeated reading intervention was shown to have a positive impact on reading fluency rates (Musti-Rao et al., 2009).

Lo, Cooke and Starling (2011) evaluated the effects of a repeated reading intervention on the oral reading fluency of three second grade students. These researchers combined other research-based components as a part of their teaching method (preview of difficult passage words in isolation, unison reading, error correction, and performance cueing and feedback). Results indicated repeated reading is effective when combined with other methods. However, results of each component were not independently evaluated to determine the direct impact the repeated reading intervention had on the oral reading fluency rates.

Begeny, Krouse, Ross, and Mitchell (2009) examined the use of repeated reading, along with two other interventions, when applied as a small group intervention for elementary-aged students. Repeated reading was found to be the most effective of the three interventions in a small group setting when comparing student gains on the number of words correct per minute (Begeny et al., 2009). Students also retained gains in the number of words correct per minute over time.

### **Teacher Model**

Teacher modeling involves a student receiving an explicit model of the text passage while silently following along with the reading passage (Begeny et al., 2009). Teacher modeling has been established in the research literature as a scientifically supported method (Begeny et al., 2009; Dawson et al., 2000; Kuhn, 2005; Musti-Rao et al., 2009; Stahl & Kuhn, 2002). Students have shown increased fluency scores by simply having a correct model of the desired reading presented prior to their attempt to perform the passage on their own (Begeny et al., 2009; Dawson et al., 2000). Teacher modeling may also be associated with assisted reading, guided oral reading practice, or teacher modeling (Dawson et al., 2000; NRP, 2000; Stahl & Kuhn, 2002).

Dawson, Venn, and Gunter (2000) studied the effects of students with EBDs' reading ability when they received a model of the reading passage. Effects of teacher modeling were compared when the model delivery was completed by a teacher versus when conveyed through a computer model. Teacher models of the correct procedure produced higher fluency and accuracy rates in students than the computer model. However, the computer model condition resulted in higher fluency and accuracy rates than not having any reading model (Dawson et al., 2000).

Ardoin, McCall, and Klubnik (2007) found that six randomly selected regular education third grade students benefited substantially from passages being modeled by the experimenters. When repeated opportunities to practice a passage were given, students' words correct per minute (WCPM) increased, even when generalizing the skills to similar, but unfamiliar passages. These data support the use of repeated reading as a means to increase students' fluency on reading passages.

Begeny, Krouse, Ross, and Mitchell (2009) examined the effects of teacher modeling listening, repeated readings, and listening-only small group interventions on the reading fluency of elementary-aged students. Listening teacher modeling was found to be effective; however, it produced a smaller effect on the number of words correct per minute when compared to the repeated readings intervention. Similarly, students retained ORF gains with the listening teacher modeling intervention; however, the repeated reading produced better results overall.

### **Summary**

Oral reading fluency has been viewed as one of the five critical components of reading, and it is considered to be essential for high levels of reading achievement (NRP, 2000). Fluency builds on a foundation of oral language skills, phonemic awareness, familiarity with letter forms, and efficient decoding skills (Pikulski & Chard, 2005). Previous studies have emphasized the

value of repeated reading interventions and teacher modeling on the oral reading fluency and comprehension of students with or at risk for reading difficulties (Ardoin et al., 2007; Dawson et al., 2000; Kostewicz & Kubina, 2010; Lo et al., 2011; Musti-Rao et al., 2009; Staubitz et al., 2005). However, there exists a paucity of experimental data on the effects of repeated reading and teacher modeling on the oral reading fluency, accuracy, and comprehension of students with emotional and behavioral disorders. This dissertation research sought to determine if repeated reading or teacher modeling of a passage would have a greater impact on the reading fluency, accuracy, and comprehension abilities of students identified with emotional and behavioral problems.

## **CHAPTER 3**

### **METHODOLOGY**

The purpose of this dissertation research was to test the effectiveness of individualized reading interventions on the oral reading fluency, accuracy, and comprehension of students identified with emotional and behavioral deficits. Reading fluency has been identified as one of five essential early-reading skills students must develop for reading comprehension (NRP, 2000). Fluent readers demonstrate accuracy, speed, and proper expression when reading orally, in order to sustain the meaning of the text as well as increase ties to the reader's background knowledge and overall comprehension (NRP, 2000). Comprehension is a critical element in reading skills development (NRP, 2000). The main focus of this study was to determine if repeated reading or teacher modeling of a passage had a greater impact on the students' reading fluency, reading accuracy, and reading comprehension skills.

The following research question was addressed: What were the effects of a repeated reading intervention compared to the effects of the teacher modeling intervention on the oral reading fluency, accuracy, and comprehension of students with emotional and behavioral disorders (EBD)?

#### **Participants**

Five student participants who were enrolled in a self-contained school for students with EBD were recruited to participate in the study. Permission was received from the University of Kansas' Internal Review Board's Human Participants Committee (HSC-L) (see Appendix A). Participants were a sample of convenience, not uncommon when working with a population of students with severe emotional and behavioral disorders (EBD). All of the students had an emotional disturbance as a primary or secondary educational disability designation; other

disabilities included health impairments, autism, or mental retardation (U. S. Department of Education, 2006). The students were each referred to specialized education services in a day treatment program from general education settings for problem behavior and deficits in social functioning. Within this school district, students with disabilities who demonstrate marked behavioral problems which significantly impact their learning or the learning of others or may pose a threat of harm to self or others may be eligible for placement in a self-contained therapeutic setting to meet their individual needs. Some of the study participants do not have a primary diagnosis of EBD; however, each student does exhibit behavioral characteristics similar to those of learners with an EBD diagnosis (Wehby et al., 2003). Thus, each of the five participants functionally met the criteria for students with an emotional disturbance (IDIEA, 2004), which were:

...a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance:

- (a) An inability to learn that cannot be explained by intellectual, sensory or health factors.
- (b) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.
- (c) Inappropriate types of behavior or feelings under normal circumstances.
- (d) A general pervasive mood of unhappiness or depression.
- (e) A tendency to develop physical symptoms or fears associated with personal or school problems. (U. S. Department of Education, 2006, p. 46756)

The participants selected for this study consisted of three males and two females. Four were Caucasian and one was African American, all between 9 and 12 years of age. All five students were enrolled in a self-contained school for students with EBD. All five student participants completed all phases of the study. Specific student demographic information and the



educational and behavioral characteristics of each participant was described based on information derived from their Individualized Education Plans (IEPs) and formal evaluation reports. Table 1 shows a summary of the participant characteristics.

Table 1

*Participant Characteristics*

Participant	Age	Diagnosis	Reading Level	Grade	Race
Billy	11	OHI	3.0	6 <sup>th</sup>	Caucasian
Daniel	11	OHI	4.2	6 <sup>th</sup>	Caucasian
Rachel	10	OHI	2.9	5 <sup>th</sup>	Caucasian
Sammie	9	ED	3.2	5 <sup>th</sup>	Caucasian
Nathaniel	12	ED	2.3	6 <sup>th</sup>	African American

Note: OHI = Other Health Impaired; ED = Emotionally Disturbed

**Participant A: Billy**

This participant was an 11-year old Caucasian male named Billy (his and all other participant names are pseudonyms). Billy was in the sixth grade. According to school records, Billy was identified as a student with an Other Health Impairment based on the medical diagnosis of Attention Deficit Hyperactivity Disorder (ADHD). Billy also had a Language Disorder in the areas of Listening Comprehension and Oral Expression as well as a speech disorder in the area of Sound System Disorder of the /s,z/ and /th/. Billy has received specialized instruction since kindergarten. Billy has been serviced in a therapeutic treatment facility since the second grade. At the time of his placement, Billy was not medicated. He demonstrated severe impulsive behaviors; he was verbally aggressive to others and used severe profanity toward those around him. Billy would run frantically around the classroom and correct himself by pounding his fist into his forehead. Based on his educational records, Billy had many gaps in the educational continuum and failed to gain educational benefit. At one point, his behaviors were so

severe that he was placed on a shortened school day until his behavioral concerns could be managed with medication support.

At the time of the study, Billy displayed impulsive behaviors and struggled to follow directions consistently. He exhibited an inability to maintain positive working behaviors and appropriate interpersonal social skills with those around him. He demonstrated an inability to attend to a task for more than five minutes at a time and was easily frustrated when he perceived that presented work was too difficult for him. Billy was disrespectful to those around him and would reprimand himself physically when upset.

Due to Billy's inability to attend to tasks and behavioral concerns, his progress in the general curriculum had been impacted. At the time of the study, Billy was working from the regular curriculum; however, accommodations and modifications were made to lower the difficulty level of the materials. Materials, assignments, and directions were consistently given in a variety of ways, and there were many opportunities for varied activities to help Billy be successful academically. Informal reading assessments administered in August and September of 2011 by the researcher and special education teacher showed an instructional reading score at the 3.0 grade level.

### **Participant B: Daniel**

Daniel was an 11-year old Caucasian male in the sixth grade. Daniel had an educational diagnosis of an Other Health Impairment based on the medical diagnosis of ADHD and Oppositional Defiant Disorder (ODD). Daniel has received specialized instruction since the beginning of the third grade, at which time he was placed in a therapeutic treatment facility for educational support. At the time of his placement, Daniel was physically and verbally aggressive in the regular education setting; he would run away and demonstrated no respect for adult

authority. If Daniel received corrective feedback from an adult, he would verbally assault the teacher and place blame on others for not having the right answers. If Daniel felt he was treated unfairly by a peer, he would seek out physical retaliation for the action, even after a long lapse in time.

At the time of the study, Daniel primarily displayed negative behaviors during unstructured settings. Daniel struggled to maintain positive peer relations and would aggress verbally and physically toward others. He struggled to follow directions consistently and accept accountability for his own actions.

Academically, Daniel was working from the regular curriculum with accommodations and modifications made to lower the difficulty level of the materials to meet his instructional needs. Materials, assignments, and directions were consistently given in a variety of ways, and many opportunities for varied activities were offered to support Daniel. Informal reading assessments administered in August and September of 2011 by the researcher and special education teacher showed an instructional reading score at the 4.2 grade level.

### **Participant C: Rachel**

Rachel was a 10-year old Caucasian female in the fifth grade. Rachel had an educational diagnosis of an Other Health Impairment based on the medical diagnoses of mood disorder with severe mood swings, Tourette's, ADHD, Autism Spectrum Disorder, and Sensory Integration Problems. Rachel has received specialized instruction since kindergarten, at which time she began receiving services for educational support in a resource room. She was placed in a therapeutic school setting in the first grade. At the time of her placement, Rachel was physically aggressive in the regular education setting; she would totally withdraw from adults and students.

When she was confronted with her inappropriate behaviors, she was unable to understand and comprehend the origin of her behaviors.

Rachel's disability negatively affects her involvement and progress in the general education curriculum at the same rate as her peers due to her behavioral deficits. Rachel struggles to attend to a task through its completion, due to her distractibility. When distracted, Rachel will sit quietly and fidget with anything on or in her desk, and pick at or chew on her fingernails or pencil. Rachel also struggles to comply with adult directions and to use kind words and actions when responding to others. When Rachel was given a direction that frustrated her or was presented with a non-preferred task, she would respond with a negative, abrupt, and disrespectful tone, stomp her foot, and/or make nonverbal tones of dissent (growling or groaning). At the time of the study, Rachel's behavior would escalate quickly to physical and verbal aggression. Rachel struggled to have appropriate interpersonal relationships with her peers.

Academically, Rachel was significantly behind her same-age peers, especially due to her lack of focus and inattention to learning tasks. Accommodations and modifications were made to learning tasks to lower the difficulty level of materials to meet her instructional needs. Even when Rachel worked one-on-one with a teacher for assistance, she required constant prompts to attend to the task. It took Rachel a long time to read text. Her fluency skills significantly impacted her ability to comprehend materials read independently. Informal reading assessments administered in August and September of 2011 by the researcher and special education teacher showed an instructional reading score at the 2.9 grade level.

**Participant D: Sammie**

Sammie was a 9-year old Caucasian female in the fifth grade. Sammie was identified as a student with an Emotional Disturbance based on her inability to build and maintain relationships with peers and teachers and inappropriate behaviors and feelings under normal circumstances for a marked period of time. Sammie has received specialized instruction since the fourth grade. Sammie has been serviced in a therapeutic treatment facility since the beginning of the fifth grade. At the time of her placement, Sammie demonstrated poor verbal and physical boundaries; she showed signs of restlessness, activity, and distractibility. Sammie would run around the regular education campus, remove her clothes in open public areas, and displayed severe separation anxiety from her parents.

At the time of the study, Sammie displayed impulsive behaviors that disrupted the classroom environment and struggled to follow directions consistently and maintain appropriate interpersonal relationships. Due to Sammie's disruptive behavioral concerns, her progress in the general curriculum had been impacted. At the time of the study, Sammie was working out of the regular curriculum; however, significant accommodations and modifications were made to lower the difficulty level of materials. Informal reading assessments administered in August and September of 2011 by the researcher and special education teacher showed an instructional reading score at the 3.2 grade level.

**Participant E: Nathaniel**

Nathaniel was a 12-year-old African American male in the sixth grade. Nathaniel had an educational diagnosis of Emotional Disturbance. He was also diagnosed with Bipolar Mood Disorder, severe Attention Deficit Hyperactivity Disorder, and severe Oppositional Defiant Disorder. Nathaniel took medication daily. Nathaniel had received specialized instruction in an

alternative school since the beginning of the first grade, at which time he was physically aggressive toward staff, refused to comply with adult directions, and displayed defiant behaviors, aggression, poor social skills, screaming, and tantruming.

Nathaniel's disability negatively affected his involvement and progress in the general education curriculum at the same rate as his peers due to his behavioral deficits. Nathaniel struggled with appropriate social skills, including taking responsibility for his own actions and staying out of others' business. When he was redirected, Nathaniel would deny involvement and place blame on others. He often struggled to control his emotions, and when corrected or redirected, he would put his head down and talk in a low voice or shut down entirely and refuse to respond. If Nathaniel was reprimanded for a behavior and sent to a safe area or asked to sit outside of the typical class environment, he would display self-abusive behaviors, such as banging his head against the wall or punching himself in the face with force.

Academically, Nathaniel was significantly behind same-age peers. Accommodations and modifications were made to learning tasks to lower the difficulty level of materials to meet his instructional needs. Informal reading assessments administered in August and September of 2011 by the researcher and special education teacher showed an instructional reading score at the 2.3 grade level.

### **Research Personnel**

This study was implemented by the classroom teacher, who is also the primary researcher for this study. The primary researcher also served as the trainer for two licensed educational professionals who also work at the school; they served in the role of inter-rater observers. At the time of consent to assist with the research, the teachers were asked to sign a consent form indicating their approval (see Appendix B). Both inter-rater observers were familiar with all the

study participants and had relationships with the students. The inter-rater observers were instructed on the relevant procedural roles and were required to demonstrate mastery criterion (100% correct implementation) on the running record calculation of words correct per minute, reading accuracy, and reading comprehension prior to performing reliability observations during the implementation of the study.

### **Established Partnerships**

The researcher for this study had an ongoing working relationship with administrators and teachers in the Park Hill School District. This school district was chosen as the site of the study because the school has a population of students with EBD who are being served in a day treatment facility. The district has placed a strong emphasis on literacy instruction; therefore, the overall goal of this project fit well with the comprehensive district improvement plans already in place.

### **Setting**

The present study was conducted within a suburban school district in metropolitan Kansas City, Missouri. The district, located in a Midwest region of the United States, encompasses 71 square miles just north of urban Kansas City. The project site was a self-contained Title 1 separate day school facility for students enrolled in kindergarten through the twelfth grade who have been identified as having emotional and behavioral disorders or who have behavioral and emotional problems similar to those of students diagnosed with EBD. The Park Hill School District's demographic profile in 2010-2011 revealed that 30.6% of the students carried a diverse population designation and 50% were eligible to receive free and reduced priced lunch.

Testing took place primarily in the social worker's office in the building at the aforementioned therapeutic school each day or in the school psychologist's office when the social worker's office was not available. Testing took place throughout the week, as a component of the student's daily reading instruction. Precautions were taken to ensure an area void of outside distractions. For the purposes of this study, students were specifically pulled out of the classroom for testing to help control the amount of distraction for the students. However, these interventions could be easily implemented in the regular classroom environment.

### **Procedures**

Prior to the time of intervention, no formal oral reading fluency instruction had been implemented in the classroom. Literacy instruction took place exclusively during whole group instruction or within a readers' workshop model. Student participants met the following criteria: (a) read 1.5 years or greater below their expected age/grade level in reading accuracy (90% - 94%) (Bear et al., 2007); (b) read below the grade level expectation for reading fluency (5<sup>th</sup> grade - 110 WCPM, 6<sup>th</sup> grade - 127 WCPM) (Hasbrouck & Tindal, 2006); (c) were enrolled in the 3<sup>rd</sup> - 6<sup>th</sup> grades in the special education day treatment program for students with emotional and behavioral concerns; and (d) had parent and student support for participation in the study.

School personnel initially identified potential participants for the study based on the performance of each student on individual baseline measures of oral reading fluency, reading accuracy, and reading comprehension. Assessments were collected by the classroom teacher as baseline reading measures, either at the beginning of the school year or upon placement within the program. These were used to identify the study participants. The assessments were brief informal assessments that focused on critical reading skills and that were predictive of desired reading outcomes in oral reading fluency, reading accuracy, and reading comprehension. Each



student was asked to read a passage at their appropriate reading level and the words read correctly in one minute were assessed for accuracy, including omissions, substitutions, hesitations, and self-correction. The accuracy of the passage was also calculated by dividing the words correct by the words attempted during the one-minute time frame. If the passage was identified as being either too easy or too difficult based on their reading accuracy, the level of passage was altered to identify their instructional reading level. Reading comprehension was also assessed through use of teacher directed questions after the student read the entire passage.

To qualify for the study, the student was identified as “at-risk” by not meeting the grade level norms for oral reading fluency. Table 2 outlines the oral reading fluency participation norms for each grade level. A student was considered at risk for reading delays if his/her score fell in a range of greater than ten WCPM below the score shown in Table 2 (Hasbrouck & Tindal, 2006). Results were assessed using one-minute timed samples of each student’s reading performance on a standardized grade level passage.

Table 2

*Curriculum-Based Oral Reading Fluency Norms*

Grade Level	WCPM*	Accuracy**
5 <sup>th</sup> grade	110	90% - 94%
6 <sup>th</sup> grade	127	

\*Hasbrouck & Tindal (2006)

\*\*Bear et al. (2007)

A student in the 5<sup>th</sup> grade was required to read at a rate of 110 words correct per minute (Hasbrouck & Tindal, 2006) or below with an accuracy rate between 90% and 94% accuracy (Bear et al., 2007). A student in the 6<sup>th</sup> grade needed to read at a rate of 127 words correct per minute (Hasbrouck & Tindal, 2006) or below with an accuracy rate between 90% and 94% accuracy (Bear et al., 2007).

Subsequent to identifying students who met the study criteria, the students' parents were contacted and informed their child had been selected to participate in the study. If the parent and student agreed to participate in the study, the parents were sent a letter explaining the study along with guarantees of confidentiality, their rights related to agreeing to participate or not participate in the study, and a consent form indicating their approval (see Appendix C). A similar explanation of the study was also given to the students in person by the researcher. Students were given an opportunity to ask questions about the study. Students were asked to sign a written consent form upon agreement to participate in the study (see Appendix D). Students and parents were both informed that participation was voluntary and that they could withdraw consent at any time. If a student or his/her parent refused consent, the student was not included in any part of the project.

During all phases of this study, the experimenter and inter-rater observers were familiar with the names of the students involved in the study; however, student names were not recorded on data forms. All instruments and observation sheets were given identifying codes. Once data were collected, every precaution was taken to ensure the confidentiality of the study participants. Project staff participated in district-wide training regarding district, state, and federal regulations to ensure student confidentiality.

After receiving parental consent, the researcher reviewed all pre-test assessments and used this data to identify each student's instructional reading level. The identification of a student's instructional reading level was important in order to engage children at a level at which they were thinking and reading and so that skill development would occur. For purposes of this study, a text that a child could accurately read independently between 90% and 94% of the words was considered instructionally appropriate (Bear et al., 2007). An instructional level text would

be easy enough for the student to read to develop a student's confidence and facilitate understanding, but difficult enough to challenge the student without frustration (Clay, 1991).

Procedural consistencies were followed across all conditions. The similarities in procedural consistencies are described, followed by a description of the procedures specific to each condition.

Across all conditions, as the researcher and the student walked to the testing location, they engaged in casual conversation. As the session began, the researcher stated to the student, "I would like you to read a story to me (again) today. When you read, I want you to do your best" to ensure uniformity in implementation. When the student and teacher arrived at the testing location, the student and teacher were seated across the table or desk from one another with the necessary supplies and materials already set out for the daily session. Prior to beginning, the teacher asked the student, "Are you ready to begin?" and then waited for an affirmative response before beginning.

The students' performance after the final reading of the passage was recorded for each session by the teacher/researcher. The student's reading comprehension performance was recorded in the form of a percentage, as calculated by the number of questions correctly answered divided by the number of questions asked. The student's reading accuracy percentage was also calculated.

Assessment procedures were also consistent across all conditions. Testing was conducted in a location outside of the classroom with limited distractions. The student read aloud one-to-one with the experimenter. In some sessions, the inter-rater observer was also present.

A consistent recording protocol was followed throughout the study, to indicate word recognition errors made by students while reading the passages. While each student read orally,

the teacher coded word recognition errors. Any words omitted during the reading were marked with a circle. Word substitutions were indicated by drawing a line above the word and writing the exchanged word or sound above the line. Any word that was told to the student was marked with a “T”; repeated words were marked with an “R”; self-corrects were marked with an “SC,” and the initial response was written above the word. If the child inserted a word that was not written in the text, parentheses were used to indicate the inserted word(s). Insertions, substitutions, words told to the student by the teacher, and omissions were counted as errors at each occurrence. Self-corrected and repeated words were not counted as errors. If a student mispronounced a proper name, it was counted as only one error for the entire passage, even if the student continued to mispronounce the same name while reading the passage, unless it was pronounced differently each time.

At the end of each individual session, the researcher praised the student with general praise statements and walked them back to class.

Immediate visual and informal assessments were used to evaluate each student’s daily oral reading fluency, reading accuracy, and reading comprehension. These assessments are also described for each condition.

## **Measures**

### **Oral Reading Fluency**

Student oral reading fluency performance was measured by having students read a passage aloud for one minute. The timer was started when the student read the first word of the passage. The same scoring procedure as described for accuracy was used; words that were omitted, substituted, or hesitations of more than three seconds were scored as errors. Words self-corrected within three seconds were scored as accurate. Self-corrected errors, repeated words,

and mispronunciations due to dialect or regional differences were not counted as errors. Students were prompted to continue reading if they hesitated for three seconds. The number of correct words per minute was calculated as the oral reading fluency score (Good & Kaminski, 2002; Good, Kaminski, & Dill, 2002).

### **Accuracy**

Reading accuracy was determined by dividing the total number of words read correctly by the total number of words read during the one-minute timed sample. Mistakes were scored when a word was omitted, inserted, or substituted, regardless of whether the miscue was self-corrected. Self-corrected errors, repeated words, and mispronunciations due to dialect or regional differences were not counted as errors. Students were prompted to continue reading if they hesitated for three seconds. If a student sounded out a word successfully, the word was considered correct as long as no real words, other than the actual word, were spoken during the process (Staubitz et al., 2005).

### **Comprehension**

Reading comprehension was not assessed until the entire passage had been read. This element of the protocol was based on existing research that suggested that assessing comprehension after a one-minute reading task may be insufficient for students to have an overall understanding of the passage they read (Goodman, 2006; Pressley & Hilden, 2005). If a child is given only a short time to read a passage, they may be more focused on their reading speed rather than on comprehension of the material (Bellinger & DiPerna, 2011); therefore the student's reading comprehension was not assessed until they had read the entire passage.

Reading comprehension was assessed as a curriculum based measure (CBM). CBM is a standardized process validated for providing guidelines and procedures in selecting testing

materials from instructional materials used (Fuchs, 2004; Fuchs & Deno, 1991). The passage(s) were read in advance by the teacher, and five reading comprehension questions were created. Of the five questions, three were recall related or explicitly pulled from the passage; two questions required inferential understanding (e.g., author's purpose, application of a vocabulary word, reflect on how or why, compare character with self) (Marr, Algozzine, Nicholson, & Dugan, 2011). After the reading comprehension questions were initially developed, the appropriateness of the questions and their relevance to the passage in question were confirmed by another teacher to ensure the integrity of the questions and their overall appropriateness as measures of comprehension (see Appendix E).

Students were scored on the accuracy provided in their oral answers to the questions posed by the teacher. The number of correct answers was divided by the total number of questions (five) to acquire an overall percentage of accuracy of comprehension. All of the scores were obtained by counting the number of correct and incorrect responses (Fuchs, 2004).

## **Instructional Materials**

### **Reading Passages**

All reading passages for the probes and intervention were obtained from DIBELS Oral Reading Fluency (DORF) (Good et al., 2002) progress monitoring passages for the second, third, and fourth grade reading levels, respectfully. DORF is a standardized set of passages and administration procedures specifically designed to identify children who are at risk for reading difficulty and to monitor their progress on individual and instructional goals. The DORF test-retest reliability for elementary students ranged from .92 to .97; alternative form reliability of different reading passages drawn from the same level ranged from .89 to .94 (Tindal, Marston, & Deno, 1983). Criterion-related validity examined in eight separate studies in the 1980s reported

coefficients ranging from .52 to .91 (Good & Jefferson, 1998; Lo et al., 2011). DORF has acceptable technical adequacy (Dynamic Measurement Group, 2008; Good & Kaminski, 2002).

Twenty DORF reading passages were available at each grade level. The passages ranged in length from 214 words to 272 words at the second grade level, 218 words to 264 words at the third grade level, and from 307 words to 379 words at the fourth grade level.

Each student was assessed at their instructional level rather than at their grade level. The student's instructional level of text was determined by using grade level benchmark assessments. Students were given one minute to read a passage, and the student's level of accuracy was determined by dividing the number of words read correctly by the total words read. The target accuracy range was between 90% and 94% accuracy (Bear et al., 2007). This accuracy range was within the instructional level. These methods were based on research indicating that for fluency building, materials should be at the instructional level or above (Good et al., 2002; Hasbrouck, 1998).

There was one set of student materials at each of the grade levels and one set of instructor scoring booklets for each student participant in the corresponding instructional level text. The student materials were consistent in layout, type, and print for each grade level, and the instructor's scoring booklet corresponded to each of the student booklets. The passages were calibrated for the goal level of reading for each instructional reading level.

### **General Supplies**

Additional general supplies that were utilized during the study included a countdown timer, No. 2 pencils, colored pens, and clipboards for the experimenter and the inter-rater observer. An additional scoring booklet was also used for the inter-rater observer as well as a calculator to quickly calculate accuracy measures.

## **Baseline**

During the baseline phase of the study, students were assessed on their oral reading fluency (ORF) or the number of words correct during a one-minute timed interval. The student read the passage for one minute; a timer was started when the student read the first word of the passage. A running record of correct words, omissions, substituted words, and hesitations was recorded as outlined previously. The timer was stopped after the one-minute time frame lapsed; however, the student continued reading the passage in its entirety. The CBM comprehension questions were asked orally by the teacher to assess the student's overall comprehension of the passage. The student responded verbally, and the researcher evaluated the depth, detail, and accuracy of the answer. Behavior-specific and general praise was given by the researcher for the student's performance, and then they were walked back to class. The student's oral reading fluency rate, or the number of words correct per minute (WCPM) and accuracy was evaluated immediately following the data collection session and was recorded by the researcher. When appropriate, the inter-rater reliability data were compared to the researcher's data.

## **Intervention**

The effects of repeated readings on the oral reading fluency skills of students has been a topic of previous research, and repeated reading is an established reading intervention (Begeny et al., 2009; Lo et al., 2011). The aim of this dissertation research was to compare the effects of repeated readings and teacher modeling on the oral reading fluency, accuracy, and reading comprehension for students with EBD.

### **Repeated Reading**

Repeated reading intervention has been well established in the research literature as an effective practice to improve reading fluency as well as comprehension (Al-Otaiba & Rivera,



2006; Begeny et al., 2009; Kostewicz & Kubina, 2008; Lo et al., 2011; Musti-Rao et al., 2009; NRP, 2000; Petscher & Kim, 2011; Scott & Shearer-Lingo, 2002; Staubitz et al., 2005).

Repeated reading involves having a student repeatedly read a specific passage multiple times to a teacher or peer monitor without explicit assistance (Begeny et al., 2009; Lo et al., 2011; Stahl & Kuhn, 2002) in order to reach a predetermined criterion of words read correctly during a one-minute time trial (Lo et al., 2011).

During the repeated reading condition of the intervention, the researcher began by reading modified scripted directions from the DIBELS oral reading fluency administration manual to each student (Good & Kaminski, 2007): “*Please read this [point] out loud. If you get stuck, I will tell you the word so you can keep reading.... Start here [point to the first word of the passage]. [You may] Begin [when you are ready]*” (Good & Kaminski, 2007, p. 2). The student then began reading the passage. The instructor started the timer when the student read the first word of the passage. The teacher monitored the number of words read correctly in the scoring booklet within the one-minute time period. Words omitted or substituted and hesitations of more than three seconds were scored as errors. Words self-corrected within three seconds were scored as accurate. Self-corrected errors, repeated words, and mispronunciations due to dialect or regional differences were not counted as errors. Students were prompted to continue reading if they hesitated for three seconds. Upon completion, the student’s WCPM during the first timed passage was assessed immediately following the data collection session by the teacher. The number of words read correctly divided by the total number of words read was calculated.

The student was then directed to reread the passage with explicit scripted directions for the second reading. “*Please read this passage [again] [point] out loud. If you get stuck, I will tell you the word so you can keep reading.... Start here [point to the first word of the passage]. [You*

may] *Begin* [when you are ready]” (Good & Kaminski, 2007, p. 2). After finishing the second reading, reading comprehension was assessed in the same manner as in previous readings outlined above.

### **Teacher Modeling**

Teacher modeling has been established in the research literature as a scientifically supported method (Begeny et al., 2009; Dawson et al., 2000; Kuhn, 2005; Musti-Rao et al., 2009; Stahl & Kuhn, 2002). Students have shown benefit from having a correct model of the desired reading presented prior to their attempt to perform the same reading (Dawson et al., 2000). Teacher modeling, also commonly known as assisted reading or modeling, involves a student receiving an explicit model of the text passage while following along silently. Students receive benefit from having a correct model by a more skilled reader of the desired reading behavior presented prior to their attempt to read on their own (Dawson et al., 2000).

During the teacher modeling phase of the intervention, the researcher began by providing explicit directions to students individually to ensure uniformity of implementation. “Today you are going to listen to me read a story to you while you follow along. Then, you will read the same story out loud to me. Pay close attention to the words, and keep your place by using your finger while you follow along.” The researcher then read the passage aloud to the student with good expression (Begeny et al., 2009). Students were given a copy of the passage and were instructed to read along silently as the researcher read (Begeny et al., 2009; Dawson et al., 2000).

Immediately after the teacher model of the passage, the students were asked to read the passage back to the researcher. The timer was started when the student read the first word of the passage. The student’s oral reading fluency, accuracy, and comprehension were evaluated immediately following the reading, using the same scoring procedure outlined for the repeated

reading intervention. At the end of the individual session, the same calculation procedures as those described for the repeated reading instructional method were used.

### **Reliability**

Inter-rater reliability was calculated on the correct number of words read per minute, rate of reading accuracy, and the student's comprehension of the material. The inter-rater observers were two licensed professional educators who calculated reliability on 6 of the 16 sessions or 38% of the sessions for each student.

The inter-rater observer sat inside the testing location with the teacher and the student during their testing session and scored the number of words correct per minute, reading accuracy, and reading comprehension of the student concurrently with the researcher. Errors were coded and documented on a separate copy of the scoring guide. The inter-rater observer agreement was obtained by comparing the data found in the records of the experimenter and those of the inter-rater observer during the reliability sessions. Agreements were scored when both the experimenter and the inter-rater observer recorded a student's words per minute, miscues, or comprehension responses the same. A disagreement was scored when the experimenter and the inter-observer recorded a different response for the same word; this is also referred to as the point-by-point method (Dawson et al., 2000; Staubitz et al., 2005; Tawney & Gast, 1984).

### **Procedural Integrity**

To measure procedural integrity, the trainer's implementation of the intervention was observed on 38% of the sessions, using the treatment fidelity checklist developed by the researcher (see Appendix F). The procedural integrity checklist was completed by the inter-rater observer during reliability checks to evaluate the accuracy of implementation by the teacher during the intervention.

## **Research Design**

An alternating treatments design was employed to determine the effects of repeated reading and teacher modeling on students' reading fluency, reading accuracy, and reading comprehension. Prior to beginning the study, the researcher met with the teachers of the student participants, the building level administrator, and the licensed educational professionals to discuss the intervention models. The researcher described the study in detail and answered questions and provided step-by-step guidance in implementing the intervention and measurement procedures with fidelity. The researcher was also available to address participants' questions, concerns, or potential challenges. As described in the methods section, participants, including educators, students, and their parents, all agreed to participate in the study prior to implementation. The educational professionals conducted reliability checks on the intervention models.

## **Data Analysis**

To examine the relative effectiveness of the repeated reading and teacher modeling interventions, median word correct per minute scores and standard deviations were derived from each of the 16 sessions in the study. Trend analysis was conducted across data points in baseline and intervention phases to compare results. Single participant design format was utilized to show individual student growth over the course of the study (Kazdin, 1982; Horner et al., 2005).

Similarly, median scores and standard deviations for reading accuracy and reading comprehension were collected and analyzed from each of the 16 sessions of the study. Trend analysis of scores was assessed in baseline and intervention phases and their results were compared. A single participant design format was used.

Whole group comparisons were also made to assess generalized results. Group accuracy means and standard deviations for the number of words correct per minute, reading accuracy, and reading comprehension were used to determine aggregate differences between interventions for the five students.

## **CHAPTER IV**

### **RESULTS**

This study was an investigation designed to test the effectiveness of individualized reading interventions on the oral reading fluency, accuracy, and reading comprehension of students identified with emotional and behavioral concerns. The results of this study are presented in this chapter.

#### **Reliability**

Inter-rater reliability was calculated on 38% of the reading sessions for each of the five students who participated in the study. Two licensed educational professionals served as the reliability raters. Inter-rater reliability was calculated on the correct number of words read per minute, rate of reading accuracy, and the student's comprehension of the material.

The inter-rater observer sat inside the testing area with the teacher and the student during their testing session and scored the correct number of words per minute, reading accuracy, and reading comprehension for each of the five students. Errors were coded and documented on a separate scoring guide. The inter-observer agreement was calculated via use of a point-by-point comparison (Dawson et al., 2000; Staubitz et al., 2005; Tawney & Gast, 1984). The number of agreements and disagreements between the experimenter and the inter-observer's record for each of the students during each of the reliability sessions was used to judge reliability. Agreements were scored when both the experimenter and the inter-observer recorded a student's words per minute, miscues, or comprehension responses similarly. Disagreements were scored when there was a discrepancy between the recorded response of the experimenter and the inter-observer. Inter-rater reliability was calculated by dividing the total number of agreements by the total

number of agreements plus disagreements, multiplied by 100 (Kazdin, 1982). Reliability raters were trained on the miscue analysis process prior to observing the reading session.

For participant A, Billy, the mean inter-rater coefficient of agreement was 99.1% on the number of words read correctly; 98% for reading accuracy; and 100% for reading comprehension. For participant B, Daniel, the mean inter-rater coefficient of agreement was 96.9% for the number of words read correctly; 97.2% for reading accuracy; and 100% for reading comprehension. For participant C, Rachel, the mean inter-rater coefficient of agreement was 97.5% for the number of words correctly read; 95.6% for reading accuracy; and 100% for reading comprehension. For participant D, Sammie, the mean inter-rater coefficient of agreement was 97.4% for the number of words correctly read; 96.4% for reading accuracy; and 100% for reading comprehension. For participant E, Nathaniel, the mean inter-rater coefficient of agreement was 98% for the number of words read correctly; 97.3% for reading accuracy; and 100% for reading comprehension.

The average mean inter-rater coefficient of agreement for all five participants was 97.76% on the number of words read correctly during one minute samples, 96.9% for reading accuracy, and 100% for reading comprehension.

### **Procedural Integrity**

In order to measure procedural integrity, the implementation of the intervention was observed on 38% of the sessions. These measures were taken in conjunction with reliability data. A treatment fidelity checklist was created to assess the procedural integrity of the intervention. The raters assessed procedural integrity by sitting in the testing room so they could see and hear the intervention taking place. The students were familiar with both raters. Both raters judged the procedural integrity to be 100%.

## **Analysis of Data**

Single participant data analysis methods (Horner et al., 2005; Kazdin, 1982; Tawney & Gast, 1984) were used to evaluate individual student progress over the course of the study.

Visual analyses were conducted using graphs displaying the raw data from each measure of the study. This evaluation strategy permitted visual analysis of each learner's performance after the implementation of the intervention(s), as compared to baseline measures.

Visual analyses of the data were conducted to determine if (a) changes occurred in the reading fluency, reading accuracy, and reading comprehension of each study participant; and (b) the extent to which the changes could be attributed to the treatment phases of the intervention, repeated reading, and teacher modeling.

Running records of student reading performance were collected across 16 non-consecutive sessions. The total number of words read correctly in one minute was recorded during each reading session; each student's overall reading accuracy rates and reading comprehension of the passage were also calculated.

Mean scores were calculated and compared for each participant during each phase of the study. The mean was chosen as the primary statistic of measurement because it allows for the estimation of the central tendency of the data during each study phase (Kennedy, 2005). It also allows for comparison of patterns between phases. Additional descriptive statistics (median and standard deviation) using the raw scores for each reading session were used to evaluate student performance across baseline and intervention phases. The results are provided in the following figures and tables for each individual participant. Means for each phase of the study are shown as straight horizontal lines.



## Individual Results

### Participant A: Oral Reading Fluency

The oral reading fluency results or the number of words read correctly during one-minute samples for participant A are presented in Figure 1. The oral reading fluency for the baseline (A) phase was 75.75 words correct per minute (WCPM). During the first treatment phase (B1), repeated reading, the mean rose to 112.2 WCPM. During the next treatment phase (B2), teacher modeling, the mean dropped slightly to 100.16 WCPM (see Table 3).

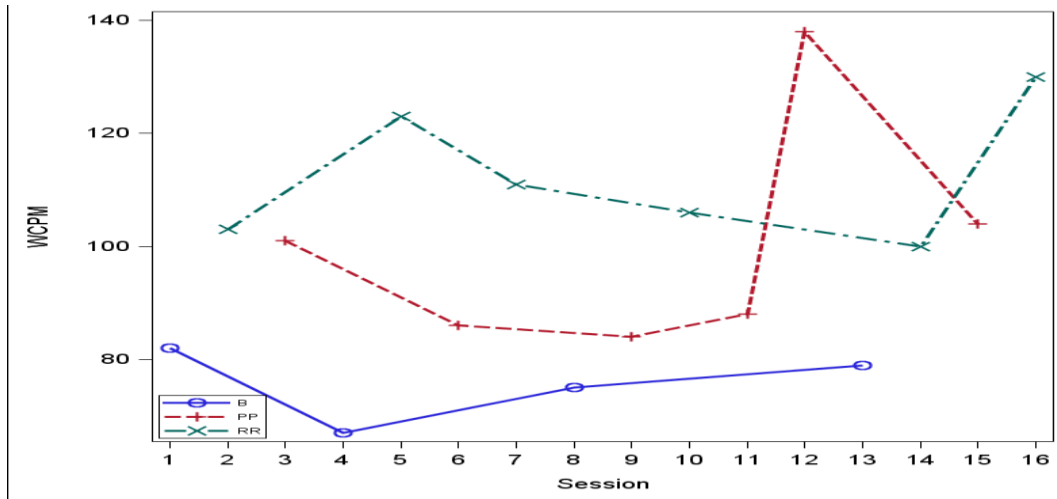


Figure 1. Result of Oral Reading Fluency Measures across Treatments for Participant A

Table 3

Participant A – Descriptive Statistics for Oral Reading Fluency

	Baseline (A)	Repeated Reading (B1)	Teacher modeling (B2)
Mean	75.75	112.17	100.17
Median	77.00	108.50	94.50
Standard Deviation	6.50	11.89	20.28

### Participant A: Reading Accuracy

Participant A’s reading accuracy results are presented in Figure 2. The mean accuracy score for the baseline (A) phase was 94.75% (see Table 4). During the first treatment condition (B1), repeated reading, the mean rose to 96% accuracy. Through the next treatment phase (B2), teacher modeling, the mean dropped slightly to 95.67% accuracy.

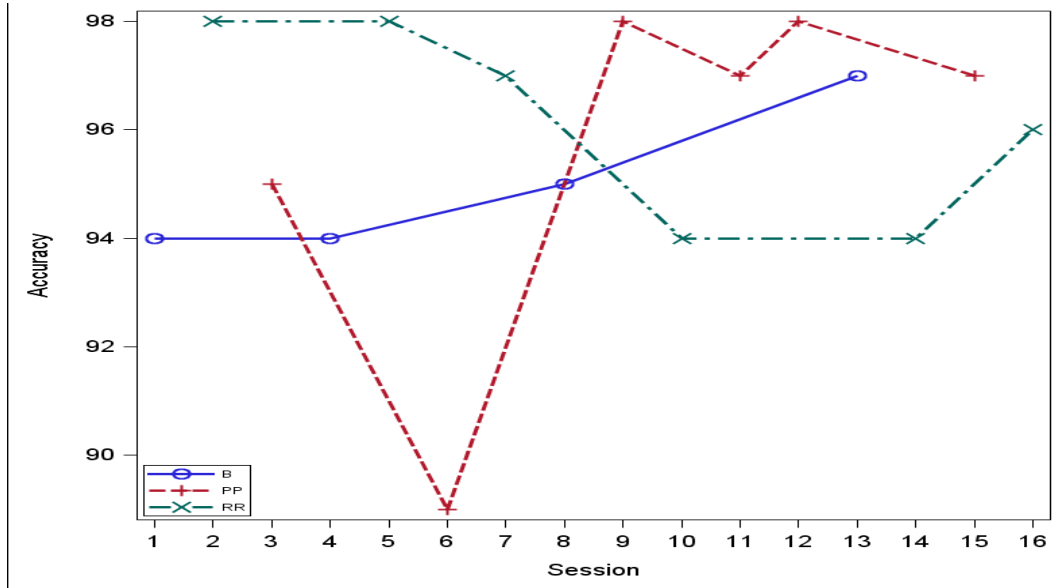


Figure 2. Result of Reading Accuracy Measures across Treatments for Participant A

Table 4

Participant A – Descriptive Statistics for Reading Accuracy

	Baseline (A)	Repeated Reading (B1)	Teacher modeling (B2)
Mean	95.00%	96.17%	95.67%
Median	94.50%	96.50%	97.00%
Standard Deviation	1.41	1.83	3.44

### Participant A: Reading Comprehension

Reading comprehension results for participant A are presented in Figure 3. Descriptive statistics outlining the results are outlined in Table 5. The mean score on the five teacher-created

reading comprehension questions for the baseline phase (A) was 55%. During the first treatment condition (B1), repeated reading, the mean comprehension score increased to 60%. Participant A's comprehension score for the teacher modeling treatment phase (B2) improved to 70%.

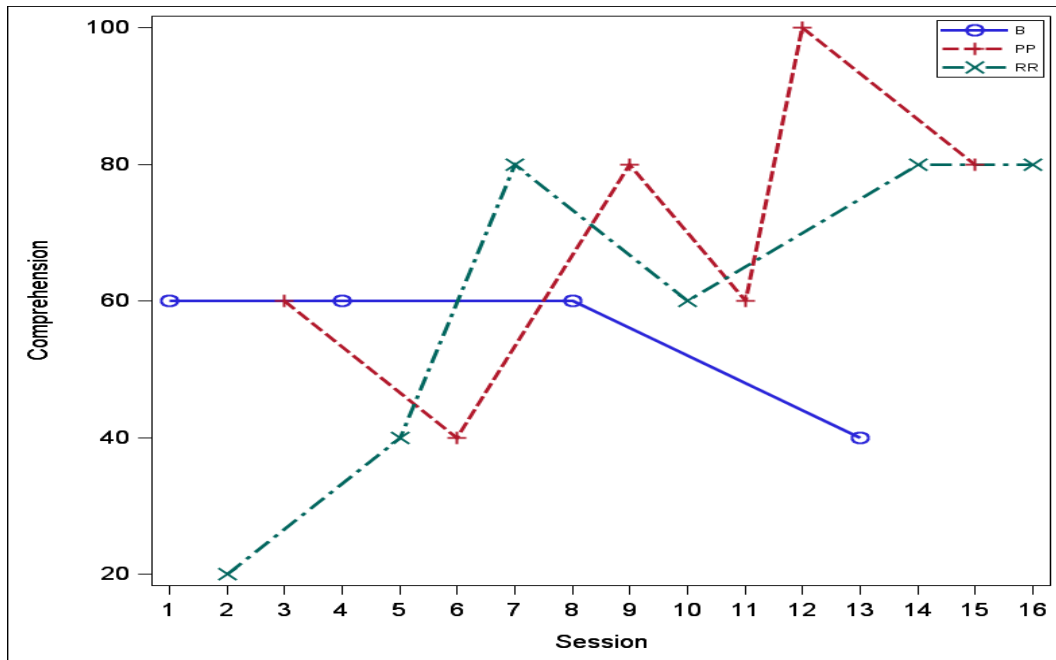


Figure 3. Result of Reading Comprehension Measures across Treatments for Participant A

Table 5

Participant A – Descriptive Statistics for Reading Comprehension

	Baseline (A)	Repeated Reading (B1)	Teacher modeling (B2)
Mean	55%	60%	70%
Median	60.00%	70.00%	70.00%
Standard Deviation	10.00	25.30	20.98

### Participant A: Summary

Relative to baseline performance, participant A made improvements in oral reading fluency, reading accuracy, and reading comprehension during each of the intervention phases of

the study. When comparing baseline measures to the repeated reading intervention, Billy’s oral reading fluency went from a mean of 76 WCPM to 112 WCPM, a gain of 36 WCPM. His reading comprehension score improved from 55% to 60%, an increase of 5%. When comparing baseline to the final intervention phase, teacher modeling, participant A’s oral reading fluency score went from a mean of 76 WCPM to 100 WCPM, a gain of 24 WCPM, and his reading comprehension score increased from 55% to 70%. Reading accuracy showed little variation across phases.

**Participant B: Oral Reading Fluency**

The oral reading fluency results or the number of words read correctly during one-minute samples for participant B are presented in Figure 4. The oral reading fluency for the baseline (A) phase was 61.75 WCPM (see Table 6). During the first treatment phase (B1), repeated reading, the mean rose to 96.5 WCPM. During the next treatment phase (B2), teacher modeling, the mean dropped to 91 WCPM.

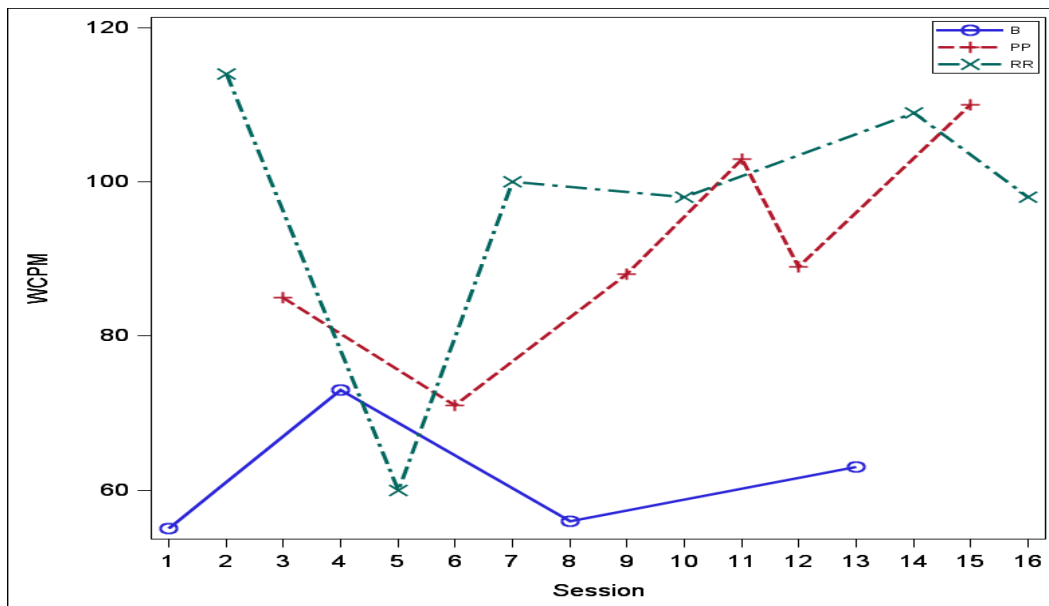


Figure 4. Result of Oral Reading Fluency Measures across Treatments for Participant B

Table 6

*Participant B – Descriptive Statistics for Oral Reading Fluency*

	Baseline (A)	Repeated Reading (B1)	Teacher modeling (B2)
Mean	61.75	96.5	91
Median	59.50	99.00	88.50
Standard Deviation	8.30	19.03	13.81

**Participant B: Reading Accuracy**

Participant B’s reading accuracy results are presented in Figure 5. The mean accuracy score are outlined in Table 7. The mean accuracy for the baseline (A) phase was 93%. During the first treatment condition (B1), repeated reading, the mean rose to 96.3% accuracy. Through the next treatment phase (B2), teacher modeling, the mean dropped slightly to 99.3% accuracy.

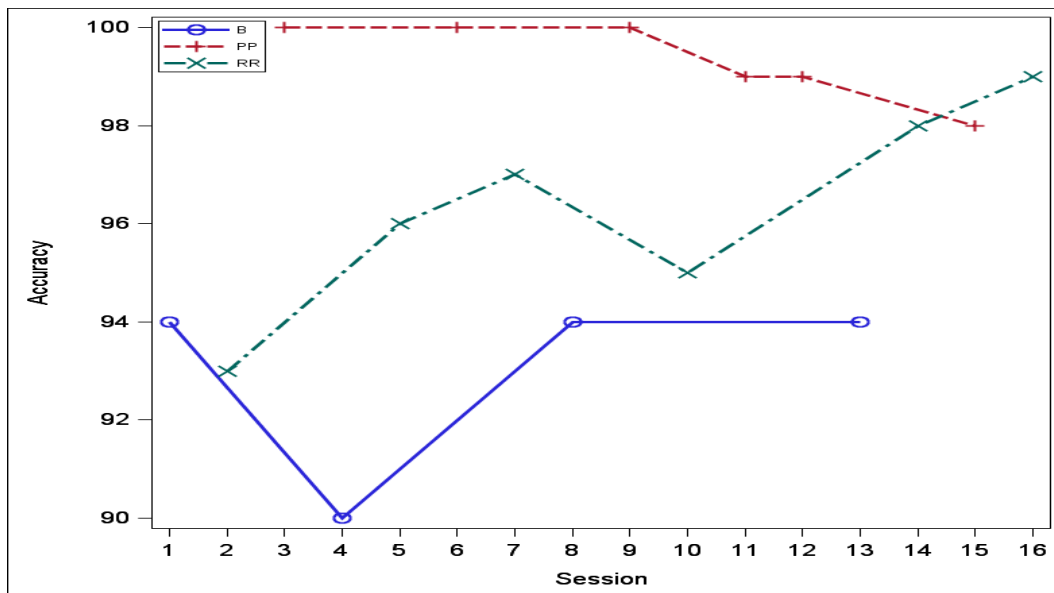


Figure 5. Result of Reading Accuracy Measures across Treatments for Participant B

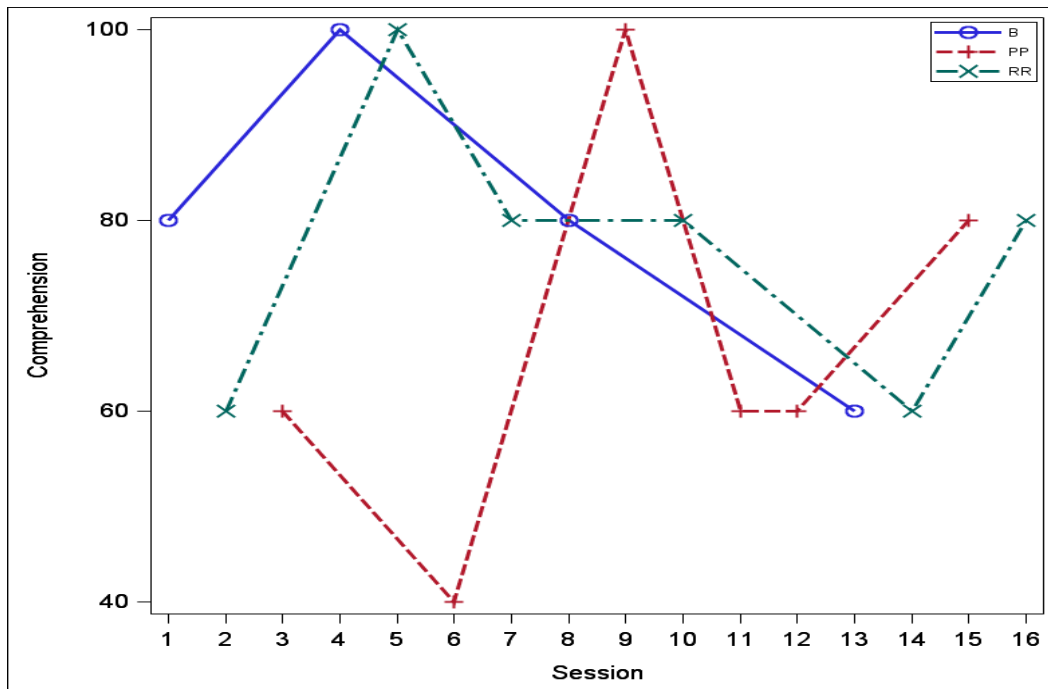
Table 7

*Participant B – Descriptive Statistics for Reading Accuracy*

	Baseline (A)	Repeated Reading (B1)	Teacher modeling (B2)
Mean	93.00%	96.33%	99.33%
Median	2.00	96.50	99.50
Standard Deviation	94.00	2.16	0.82

**Participant B: Reading Comprehension**

The results for reading comprehension for participant B are presented in Figure 6. The mean score on the teacher-created reading comprehension questions for the baseline (A) phase was 80%. During the first treatment condition of repeated reading (B1), the mean decreased slightly to 76.6% accuracy. Through the next treatment phase (B2), teacher modeling, the mean dropped further to 66.6% accuracy (see Table 8).



*Figure 6. Result of Reading Comprehension Measures across Treatments for Participant B*

Table 8

*Participant B – Descriptive Statistics for Reading Comprehension*

	Baseline (A)	Repeated Reading (B1)	Teacher Modeling (B2)
Mean	80%	76.67%	66.67%
Median	80.00%	80.00%	60.00%
Standard Deviation	16.33	15.06	20.66

**Participant B: Summary**

Relative to baseline performance participant B made improvements in oral reading fluency and reading accuracy. However, when comparing baseline to intervention phases of the study, participant B’s reading comprehension decreased. When comparing baseline measures to the repeated reading intervention, his oral reading fluency went from a mean of 61.75 WCPM to 96.5 WCPM, a gain of 34.75 WCPM, and his reading accuracy increased from 93% to 96.3%, an increase of 3.3%. Reading comprehension scores decreased from 80% to 76.6%. When comparing baseline to the final intervention phase, teacher modeling, participant B’s oral reading fluency score went from a mean of 61.75 WCPM to 91 WCPM, a gain of 29.25 WCPM, and his reading accuracy again increased from 93% to 99.3%, an increase of 6.3%. When comparing the baseline phase to the teacher modeling intervention, participant B’s reading comprehension decreased from 80% to 66.6%, a decline of 13.4%.

**Participant C: Oral Reading Fluency**

The oral reading fluency results or the number of words read correctly during one-minute samples for participant C are presented in Figure 7. The oral reading fluency for the baseline (A) phase was 57.25 WCPM (see Table 9). During the first treatment phase (B1), repeated reading,

the mean rose to 72.16 WCPM. Throughout the next treatment phase (B2), teacher modeling, the mean dropped to 46.8 WCPM.

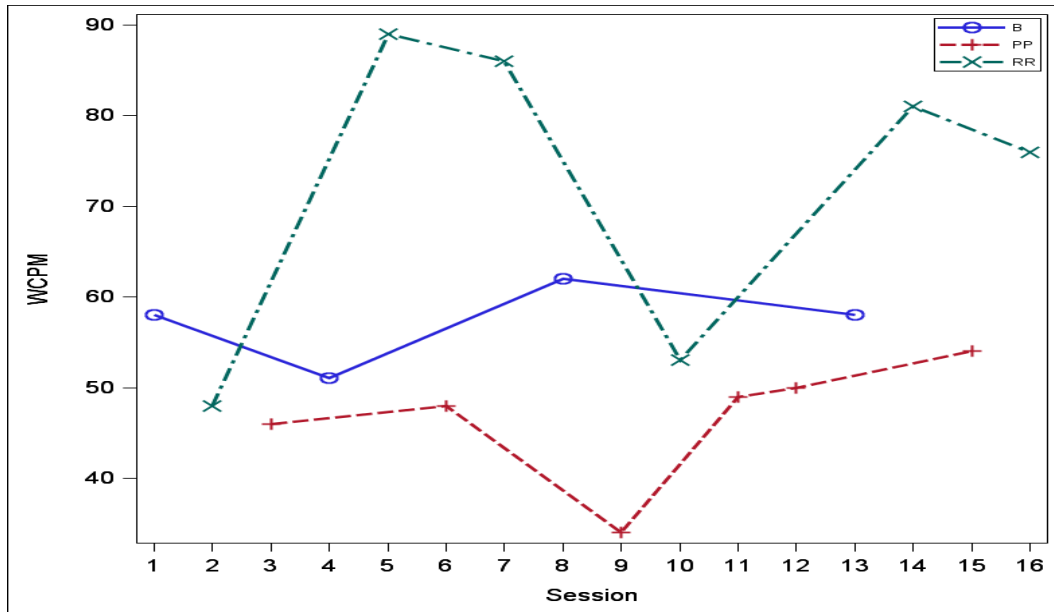


Figure 7. Result of Oral Reading Fluency Measures across Treatments for Participant C

Table 9

Participant C – Descriptive Statistics for Oral Reading Fluency

	Baseline (A)	Repeated Reading (B1)	Teacher Modeling (B2)
Mean	57.25	72.17	46.83
Median	58.00	78.50	48.50
Standard Deviation	4.57	17.43	6.82

### Participant C: Reading Accuracy

The results for reading accuracy for participant C are presented in Figure 8. The mean accuracy score for the baseline (A) phase was 93.75%. During the first treatment condition, repeated reading (B1), the mean rose to 94.6% accuracy. Through the next treatment phase (B2), teacher modeling, the mean dropped slightly to 93.5% accuracy (see Table 10).



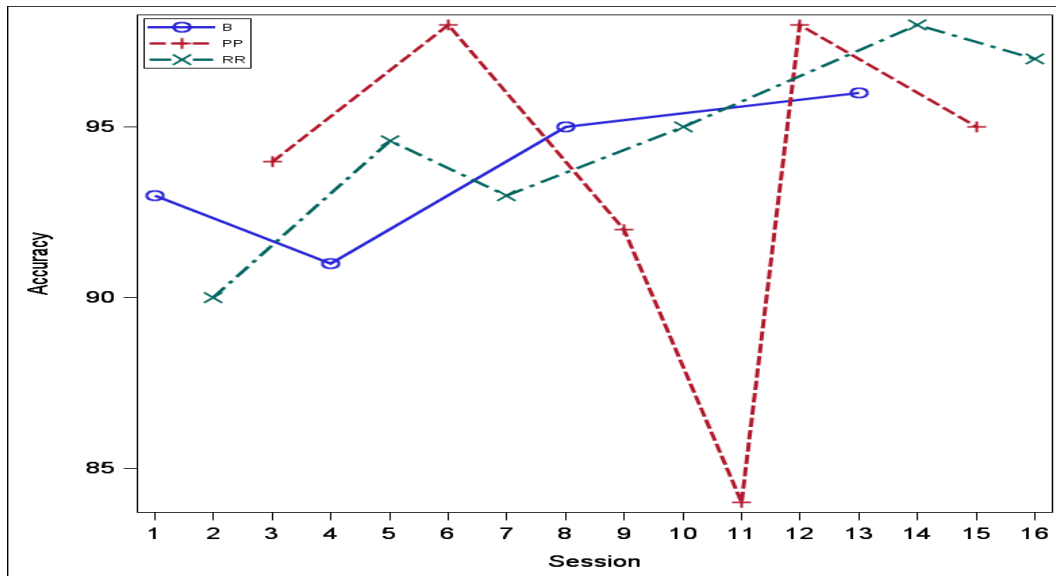


Figure 8. Result of Reading Accuracy Measures across Treatments for Participant C

Table 10

Participant C – Descriptive Statistics for Reading Accuracy

	Baseline (A)	Repeated Reading (B1)	Teacher Modeling (B2)
Mean	93.75%	94.60%	93.50%
Median	94.00%	94.80%	94.50%
Standard Deviation	2.22	2.87	5.21

### Participant C: Reading Comprehension

Reading comprehension results for participant C are presented in Figure 9. The mean score on the five teacher-created reading comprehension questions for the baseline phase (A) was 50% (see Table 11). During the first treatment condition (B1), repeated reading, the mean comprehension score increased to 66.6%. Participant C’s comprehension score for the teacher modeling treatment phase (B2) dropped to 63.3%.

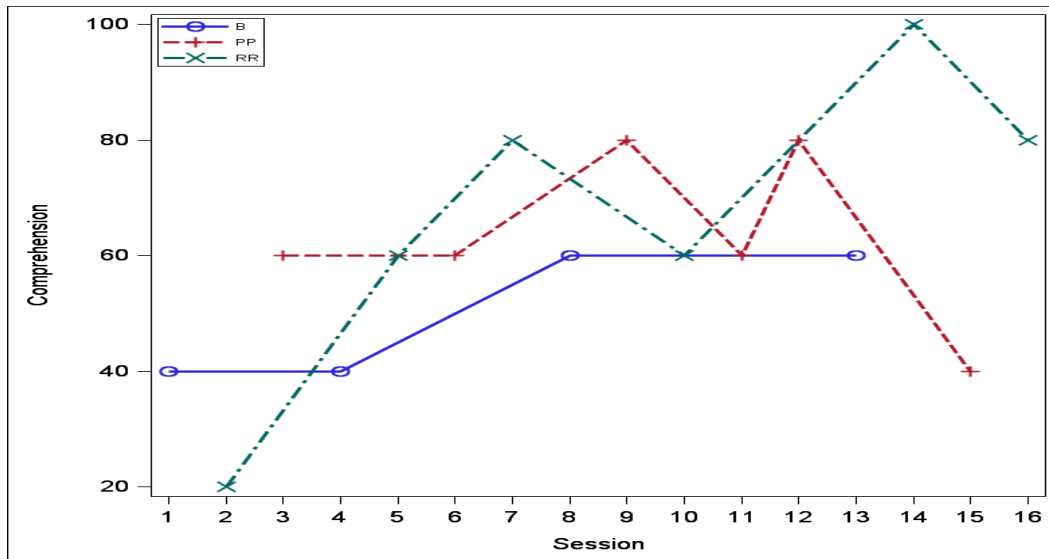


Figure 9. Result of Reading Comprehension Measures across Treatments for Participant C

Table 11

Participant C – Descriptive Statistics for Reading Comprehension

	Baseline (A)	Repeated Reading (B1)	Teacher Modeling (B2)
Mean	50.00%	66.67%	63.33%
Median	50.00	70.00	60.00
Standard Deviation	11.55	27.33	15.06

### Participant C: Summary

Compared to baseline performance, participant C made improvements in oral reading fluency, reading accuracy, and reading comprehension. When comparing baseline measures to the repeated reading intervention, her oral reading fluency went from a mean of 57.25 WCPM to 72.16 WCPM, a gain of 14.91 WCPM, and her reading comprehension score improved from 50% to 66.6% during the repeated reading phase, an increase of 16.6%. When comparing baseline to the final intervention phase, teacher modeling, participant C’s oral reading fluency score went from a mean of 57.25 WCPM to 46.8 WCPM, a decline of 10.45 WCPM, and her

reading comprehension increased from 50% to 63.3%, an increase of 13.3%. Reading accuracy showed minimal variation across phases.

### Participant D: Oral Reading Fluency

The oral reading fluency results or the number of words read correctly in one-minute samples for participant D are presented in Figure 10. The oral reading fluency for the baseline (A) phase was 87.25 WCPM (see Table 12). During the first treatment phase (B1), repeated reading, the mean rose to 117 WCPM. Throughout the next treatment phase (B2), teacher modeling, the mean was 97.16 WCPM.

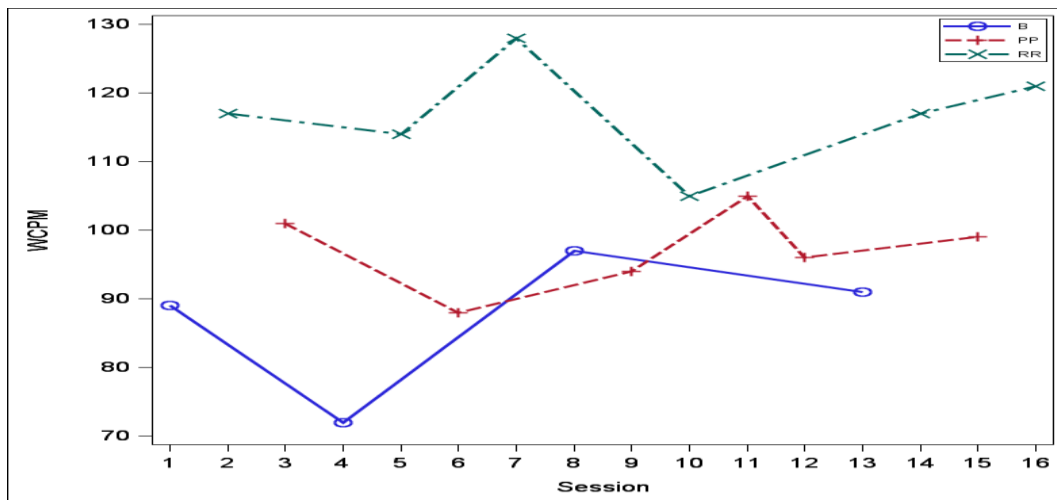


Figure 10. Result of Oral Reading Fluency Measures across Treatments for Participant D

Table 12

Participant D – Descriptive Statistics for Oral Reading Fluency

	Baseline (A)	Repeated Reading (B1)	Teacher Modeling (B2)
Mean	87.25	117.00	97.17
Median	90.00	117.00	97.50
Standard Deviation	10.72	7.62	5.91

### Participant D – Reading Accuracy

The results for reading accuracy for participant D are presented in Figure 11. Table 13 summarizes the descriptive statistics related to reading accuracy. The mean quality score for the baseline (A) phase was 94.5%. During the first treatment condition (B1), repeated reading, the mean rose slightly to 96.5% accuracy, but then during the next treatment phase (B2), teacher modeling, the mean increased to 99% accuracy.

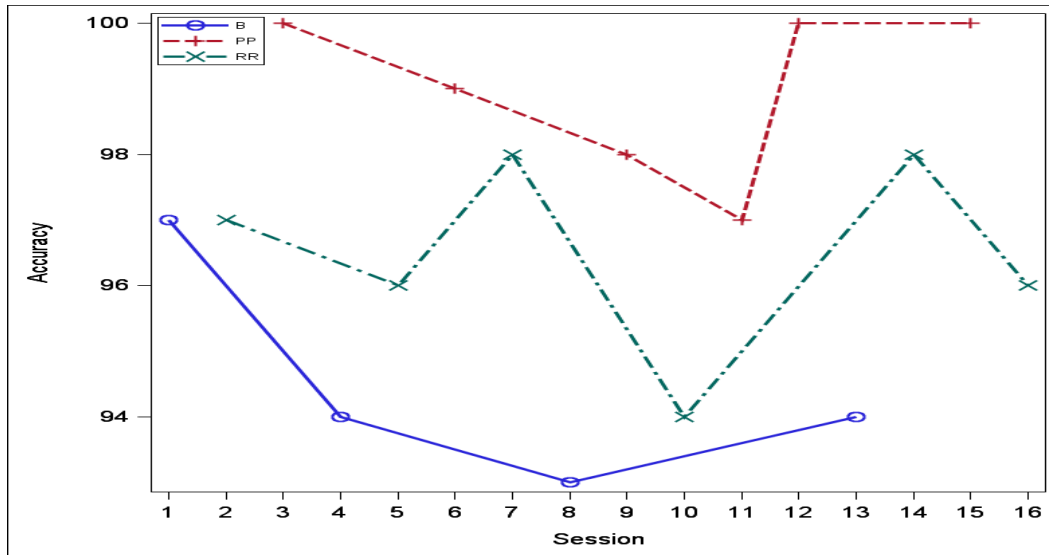


Figure 11. Result of Reading Accuracy Measures across Treatments for Participant D

Table 13

Participant D – Descriptive Statistics for Reading Accuracy

	Baseline (A)	Repeated Reading (B1)	Teacher Model (B2)
Mean	94.50%	96.50%	99.00%
Median	94.00%	96.50%	99.50%
Standard Deviation	1.73	1.52	1.26

### Participant D – Reading Comprehension

Reading comprehension results for participant D are presented in Figure 12 and Table 14. The mean score on the five teacher-created reading comprehension questions for the baseline

phase (A) was 75%. During the first treatment condition (B1), repeated reading, the mean comprehension score decreased to 70%. Participant D’s comprehension score for the teacher modeling treatment phase (B2) increased to 76.6%.

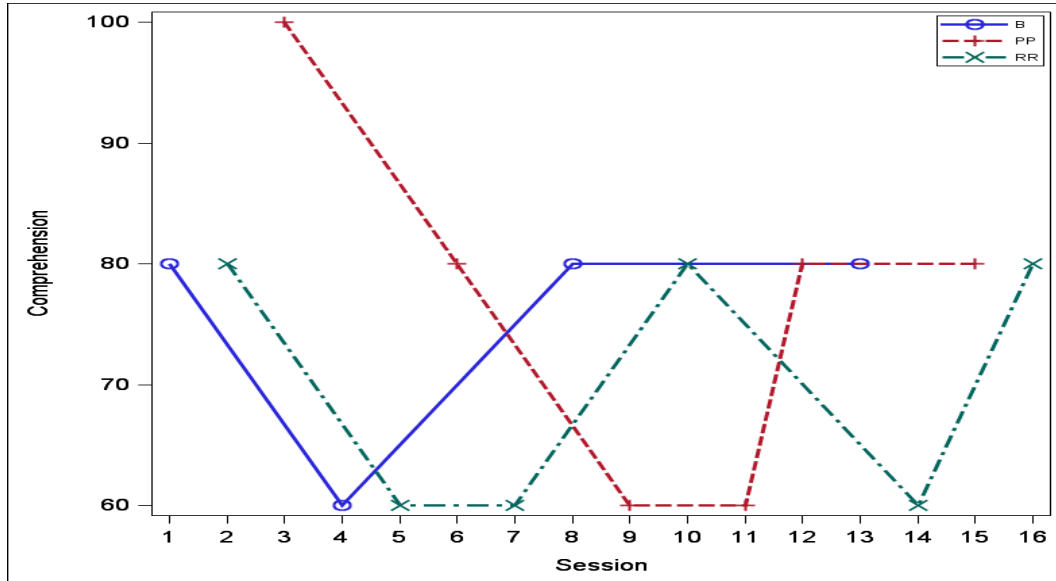


Figure 12. Result of Reading Comprehension Measures across Treatments for Participant D

Table 14

Participant D – Descriptive Statistics for Reading Comprehension

	Baseline (A)	Repeated Reading (B1)	Teacher Model (B2)
Mean	75.00%	70.00%	76.67%
Median	80.00	70.00	80.00
Standard Deviation	10.00	10.95	15.06

**Participant D: Summary**

Participant D made improvements in oral reading fluency and reading accuracy when comparing baseline to intervention phases of the study. When comparing baseline measures to the repeated reading intervention, her oral reading fluency went from a mean of 87.25 WCPM to 117 WCPM, a gain of 29.75 WCPM, and her reading accuracy increased from 94.5% accuracy

to 96.5%, an increase of 2%. However, when comparing baseline to repeated readings in the area of reading comprehension, her performance decreased from a mean of 75% to 70% across phases. When comparing baseline to the final intervention phase, teacher modeling, participant D's oral reading fluency score went from a mean of 87.25 WCPM to 97.16 WCPM, a gain of only 9.91 WCPM, and her reading comprehension increased marginally from 75% to 76.6%, an increase of 1.6%.

**Participant E: Oral Reading Fluency**

The oral reading fluency results or the number of words read correctly in one minute for participant E are presented in Figure 13 and Table 15. The oral reading fluency for the baseline (A) phase was 63.25 WCPM. During the first treatment phase (B1), repeated reading, the mean rose to 92.8 WCPM. Throughout the next treatment phase (B2), teacher modeling, the mean was 89.6 WCPM.

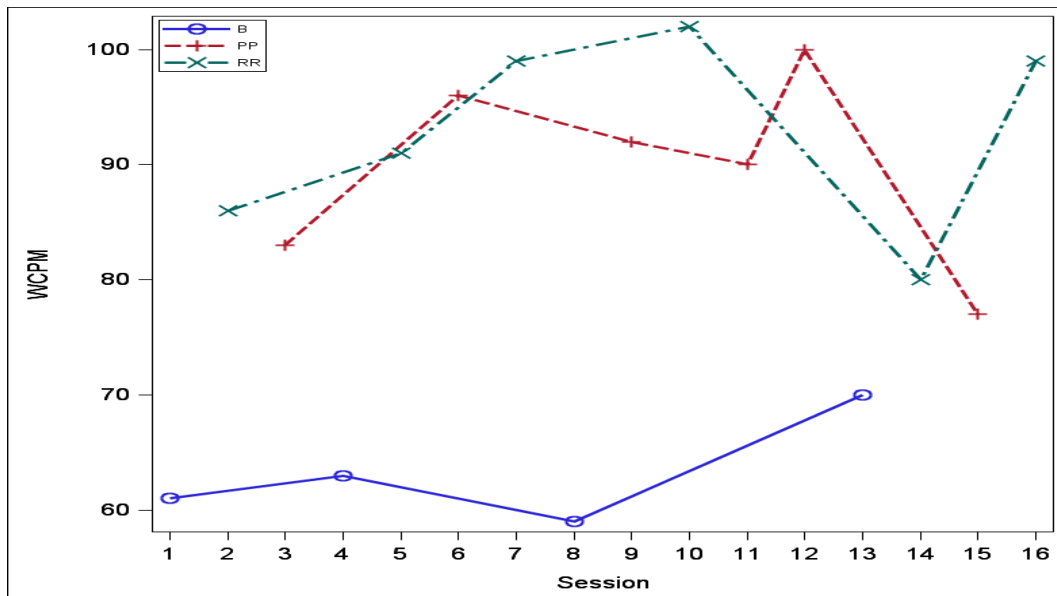


Figure 13. Result of Oral Reading Fluency Measures across Treatments for Participant E

Table 15

*Participant E – Descriptive Statistics for Oral Reading Fluency*

	Baseline (A)	Repeated Reading (B1)	Teacher Modeling (B2)
Mean	63.25	92.83	89.67
Median	62.00	95.00	91.00
Standard Deviation	4.79	8.66	8.45

**Participant E: Reading Accuracy**

The results for reading accuracy for participant E are presented in Figure 14 and Table 16. The mean accuracy score for the baseline phase (A) was 93.2%. During the first treatment condition (B1), repeated reading, the mean rose slightly to 94.16%, but then during the next treatment phase (B2), teacher modeling, the mean increased to 96% accuracy.

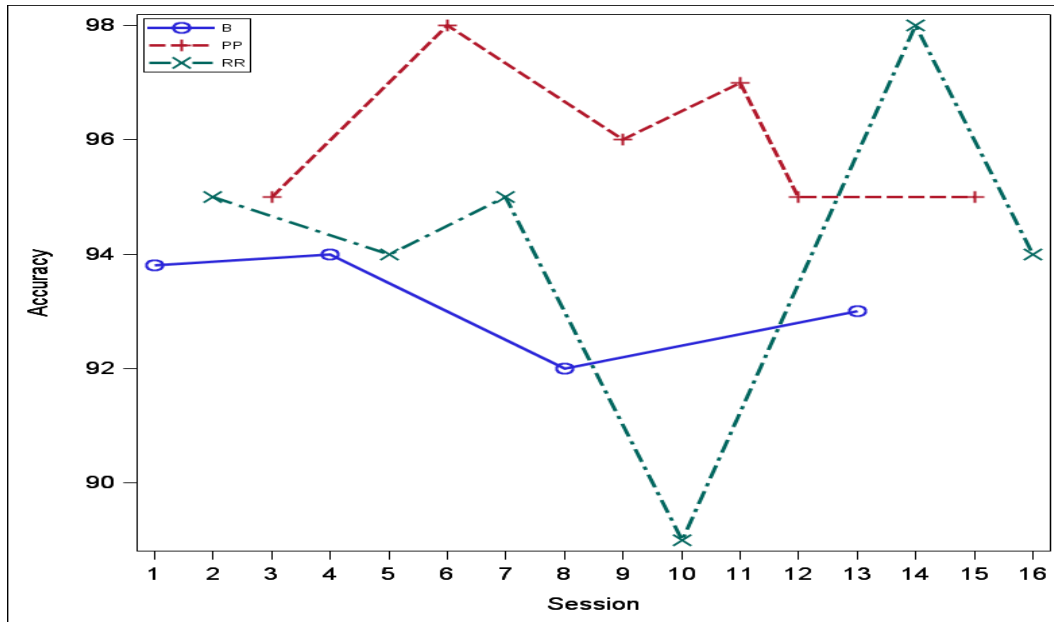


Figure 14. Result of Reading Accuracy Measures across Treatments for Participant E

Table 16

*Participant E – Descriptive Statistics for Reading Accuracy*

	Baseline (A)	Repeated Reading (B1)	Teacher Modeling (B2)
Mean	93.20%	94.17%	96.00%
Median	93.40%	94.50%	95.50%
Standard Deviation	0.91	2.93	1.26

**Participant E: Reading Comprehension**

Reading comprehension results for participant E are presented in Figure 15 and Table 17.

The mean score on the five teacher-created reading comprehension questions for the baseline phase (A) was 45%. During the first treatment condition (B1), repeated reading, the mean comprehension score decreased to 63.33%. Participant E’s reading comprehension score for the teacher modeling treatment phase increased to 73.33% accuracy.

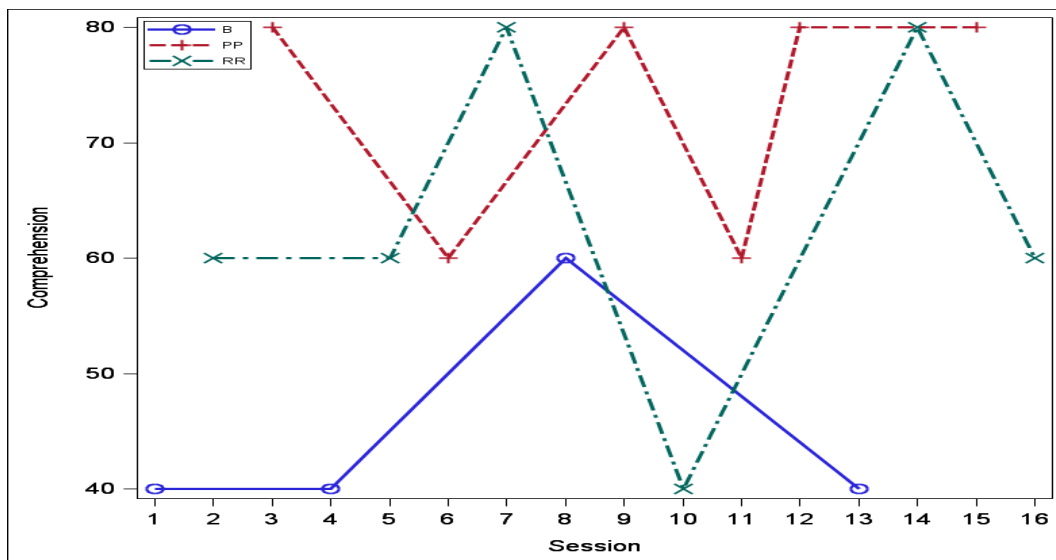


Figure 15. Result of Reading Comprehension Measures across Treatments for Participant E



Table 17

*Participant E – Descriptive Statistics for Reading Comprehension*

	Baseline (A)	Repeated Reading (B1)	Teacher Modeling (B2)
Mean	45.00%	63.33%	73.33%
Median	40.00%	60.00%	80.00%
Standard Deviation	10.00	15.06	10.33

**Participant E: Summary**

Participant E made overall improvements in all measured areas, oral reading fluency, reading accuracy, and reading comprehension when comparing baseline to both intervention phases of the study. When comparing baseline measures to the repeated reading intervention, his oral reading fluency went from a mean of 63.25 WCPM to 92.8 WCPM, a gain of 29.55 WCPM, and her reading accuracy increased from 93.2% accuracy to 94.16%, a slight increase of increase of 0.96%. In the area of reading comprehension, his performance increased from a mean of 45% to a mean of 63.370% across phases. When comparing baseline to the final intervention phase, teacher modeling, participant E’s oral reading fluency score went from a mean of 63.25 WCPM to 89.6 WCPM, a gain of 26.35 WCPM, and his reading comprehension increased from 45% to 66.7%, an increase of 21.7%.

**Group Results**

Table 18 displays all group assessment information on means for reading fluency scores, accuracy, and comprehension across intervention phases. To check for differences between intervention performances, simple mean comparisons on the group results were conducted. Group means for both the repeated reading and teacher modeling intervention improved across all measures when compared to the baseline phase. When comparing specific interventions

across measures repeated reading garnered the greatest benefit to oral reading fluency scores.

While the teacher modeling intervention produced greater reading accuracy and comprehension results than both the baseline and repeated reading phases of the intervention.

Table 18

*Summary Tables for Individual and Group Means*

*Mean Oral Reading Fluency Scores across Phases by Individual Student and Group*

	Baseline (A)	Repeated Reading (B1)	Teacher modeling (B2)
Participant A	75.75	112.2	100.16
Participant B	61.75	96.5	91
Participant C	57.25	72.16	46.8
Participant D	87.25	117	97.16
Participant E	63.25	92.8	89.6
<b>Group</b>	<b>69.05</b>	<b>98.13</b>	<b>84.97</b>

*Mean Reading Accuracy Scores across Phases by Individual Student and Group*

	Baseline (A)	Repeated Reading (B1)	Teacher Model (B2)
Participant A	94.8%	96%	95.7%
Participant B	93%	96.3%	99.3%
Participant C	93.8%	94.6%	93.5%
Participant D	94.5%	96.5%	99%
Participant E	93.2%	94.2%	96%
<b>Group</b>	<b>93.89%</b>	<b>95.55%</b>	<b>96.70%</b>

*Mean Reading Comprehension Scores across Phases by Individual Student and Group*

	Baseline (A)	Repeated Reading (B1)	Teacher Model (B2)
Participant A	55%	60%	70%
Participant B	80%	76.6%	66.6%
Participant C	50%	66.6%	63.3%
Participant D	75%	70%	76.6%
Participant E	45%	63.3%	66.7%
<b>Group</b>	<b>61.00%</b>	<b>67.33%</b>	<b>70.00%</b>

## **Summary**

This chapter presents the results of the analysis of the reading samples of the five participants who participated in this study. Quantitative data were presented in the form of single participant line graphs for the dependent variables of oral reading fluency, reading accuracy, and reading comprehension. Tables for individual student and group performance provide additional descriptive statistical data in the form of means, medians, and standard deviations.

## CHAPTER V

### SUMMARY, DISCUSSION AND IMPLICATIONS

A paucity of academically focused and research-based interventions for students with emotional and behavioral disorders exists. Although some research supports the assumption that improved academic performance results in increased behavioral performance (Lane et al., 2007; Lane et al., 2001; Lane et al., 2002), there is a gap in the research that support empirically validated academic interventions, specifically in reading for students with EBD. The present study was aligned closely with previous research by Begeny and his colleagues (2009), who investigated the effects of the repeated reading and teacher modeling interventions in conjunction with a listening only and control conditions as small group interventions. This study was thus designed to build on previous research findings to include the effects of repeated reading and teacher modeling interventions with students with EBD.

This study examined the impact of two empirically validated reading interventions, repeated reading and teacher modeling, on the oral reading fluency, reading accuracy rate, and comprehension of students with emotional and behavioral disorders. Specifically, the study examined the effects of repeated reading and teacher modeling of a passage on students' (a) reading fluency, (b) reading accuracy, and (c) reading comprehension. An alternating treatments design was employed wherein five participants were introduced to both interventions and a no-treatment condition in a rapidly alternating fashion to minimize order effects. The order of the conditions was partly counterbalanced so that each condition would occur at least once in the beginning, middle, and end of the study (Begeny et al., 2009).

## **Analysis of Aggregate Data**

### **Repeated Reading Intervention**

The repeated reading intervention was designed to improve both reading fluency and comprehension (Al-Otaiba & Rivera, 2006; Begeny et al., 2009; Kostewicz & Kubina, 2008; Lo et al., 2011; Musti-Rao et al., 2009; NRP, 2000; Petscher & Kim, 2011; Scott & Shearer-Lingo, 2002; Staubitz et al., 2005). The intervention involved having a student repeatedly read a specific passage to a teacher without explicit assistance (Begeny et al., 2009; Stahl & Kuhn, 2002; Lo et al., 2011), in order to reach a predetermined criterion of words read correctly during a one-minute time trial (Lo et al., 2011). Research has confirmed repeated reading is an effective intervention for improving various types of reading difficulties and has been associated with significant improvements in reading fluency and comprehension (Begeny et al., 2009; Therrin, 2004).

During the repeated reading condition of the intervention, the researcher began by reading scripted directions. The instructor started the timer when the student read the first word of the passage. The teacher monitored the number of words read correctly in the scoring booklet within the one-minute time period; then the student continued to read the passage until the end. Following the data collection session, the student's WCPM for the first timed passage were assessed by the teacher to determine the overall reading fluency and reading accuracy for the first reading. The student was then directed to reread the entire passage with explicit scripted directions for the second reading. Again, the student's WCMP were assessed along with the reading accuracy for the second attempt. Additionally, the participants were asked teacher-created reading comprehension questions relating specifically to the story. Their answers were scored for accuracy and recorded.

The reading comprehension questions were comprised of five teacher-created questions for each passage. Of the five questions, three were recall-related or explicitly pulled from the passage; two questions required inferential understanding (e.g., author's purpose, application of a vocabulary word, reflect on how or why, compare character with self) (Marr et al., 2011). The study participants consistently experienced concerns when answering the questions that required inferential understanding. They were able to answer recall comprehension questions more consistently; however, when higher order thinking skills were needed, they struggled to make similar connections.

The findings of the present study are similar to those reported in the literature for students at risk for reading and school failure. That is, repeated reading and teacher modeling both demonstrate value as an effective intervention for the students in the study. As found in the extant literature, repeated reading is an effective intervention for students, including for those with EBD (Kostewicz & Kubina, 2010; Musti-Rao et al., 2009; Staubitz et al., 2005). Thus the extant research is consistent with the findings of this study, confirming that teacher modeling is an effective intervention for students with EBD (Ardoin et al., 2007).

**Oral reading fluency.** The individual learners in this study had varying outcomes across the repeated reading intervention. However, all participants demonstrated improved oral reading fluency rates (i.e., WCPM mean scores) when the repeated reading intervention strategy was compared to the baseline condition (Mean=69.05). In comparing WCPM gains to the repeated reading condition, the repeated reading intervention (Mean=98.13) was shown to be more effective than the baseline or no-treatment condition phase of the intervention.

**Reading accuracy.** All participants demonstrated improved reading accuracy scores when comparing the repeated reading intervention to the baseline or no-treatment condition.

Baseline scores produced a mean of 93.89%. In comparing reading accuracy means of the repeated reading condition, which produced mean scores at 95.55%, there was an overall gain of 1.66% with the repeated reading intervention.

**Reading comprehension.** Although not all participants demonstrated gains in reading comprehension, broad gains in reading comprehension were made with the implementation of the repeated reading intervention when compared to their overall mean performance. The baseline phase of the study produced mean results equivalent to 61% accuracy. With the implementation of the repeated reading intervention, comprehension gains increased to an overall mean of 67.33%.

### **Teacher Modeling Intervention**

The teacher modeling intervention involved a student receiving an explicit model of the text passage while silently following along with the reading passage (Begeny et al., 2009). Research suggests students have shown increased reading fluency scores by simply having a correct model by a more skilled reader of the desired reading presented prior to their attempt to read the passage on their own (Begeny et al., 2009; Dawson et al., 2000).

During the teacher modeling phase of the intervention, the researcher began by providing explicit directions to students individually to ensure uniformity of implementation. The researcher first modeled correct reading of the passage aloud to the student, while the student followed along silently during the reading (Begeny et al., 2009; Dawson et al., 2000).

Immediately after the teacher modeled the passage, the student was asked to read the passage back to the researcher. The timer was started when the student read the first word of the passage. The student's oral reading fluency, accuracy, and comprehension were evaluated after

the student completed reading the passage, using the same scoring procedure outlined for the repeated reading intervention.

**Oral reading fluency.** The majority of students (four of five study participants) demonstrated improved oral reading fluency rates (i.e., WCPM mean scores) in the teacher modeling intervention strategy as compared to the baseline condition. The baseline or no-treatment phase produced mean scores of 69.05 WCPM, as compared to WCPM gains in the teacher modeling intervention (mean: 84.97 WCPM). As such, the teacher modeling intervention demonstrated oral reading fluency gains of 15.94 WCPM greater than the baseline or no-treatment condition phase of the intervention. In comparison of gains across interventions, repeated reading with a mean of 98.13 WCPM garnered greater effects than teacher modeling, with a mean of 84.97 WCPM.

**Reading accuracy.** Four of the five students also demonstrated improved reading accuracy scores when comparing the teacher modeling intervention to the baseline or no-treatment condition. Overall baseline scores produced mean results of 93.89%. Comparatively, the reading accuracy of the teacher modeling condition produced mean scores at 96.70%; there were only slight gains of 2.81% with the teacher modeling intervention. However, when comparing gains across both interventions, repeated reading produced a reading accuracy mean of 95.55%; the teacher modeling approach produced mean results of 96.70%. Thus, the teacher modeling intervention produced marginally greater results, a difference of 1.15%.

**Reading comprehension.** Not all participants demonstrated gains in their reading comprehension scores, although gains in reading comprehension were made with the implementation of the teacher modeling intervention relative to the overall means results. The baseline phase of the study produced mean outcomes equivalent to 61% accuracy. However,



under the teacher modeling intervention, comprehension gains increased to an overall mean of 70%. When constructing a similar comparison across both interventions, repeated reading produced a reading accuracy mean of 67.33%, although teacher modeling produced mean results of 70%. Therefore, results indicate that teacher modeling produced minimal gains over repeated reading.

Participants A, D, and E demonstrated greater gains in the area of comprehension during the teacher modeling condition (Mean=71.1%), when a teacher model of the passage was given in advance of the student reading over the baseline (Mean=58.3%) and repeated reading (Mean=64.43%) interventions. Participant D's reading comprehension was higher during the baseline phase (Mean=75%) than during the repeated reading intervention (Mean=70%).

Participant C's results revealed the repeated reading intervention (Mean=66.6%) was most effective in improving her reading comprehension compared to the baseline phase (Mean=50%) and the teacher modeling (Mean=63.3%) intervention. Only Participant B showed a decrease in comprehension across interventions. His comprehension scores were highest during the baseline phase (Mean=80%) when compared to the repeated reading (Mean=76.6%) and teacher modeling (Mean=66.6%).

This research sought to determine if repeated reading or teacher modeling of a passage would have a greater impact on the reading fluency, accuracy, and comprehension abilities of students identified with emotional and behavioral problems. The present findings generally support the research of Begeny et al. (2009); that is, both repeated reading and teacher modeling were found to be effective interventions. Moreover, in a manner similar to findings reported by Begeny et al. (2009), the repeated reading intervention produced greater overall gains.

## **Individual Analysis of Results**

**Participant A.** During the baseline phase of the study, participant A scored at a mean of 75.75 WCPM. When the repeated reading intervention was applied, participant A's WCPM mean score increased to 112.2, a gain of 36.45 WCPM. When the teacher modeling intervention was implemented, his mean score was 100.16 WCPM, an increase of 24.41 WCPM over baseline, and a decrease of 12.04 WCPM when compared to the repeated reading intervention. Of all of the study participants, participant A made the greatest gains in oral reading fluency with the repeated reading intervention.

Participant A's reading accuracy varied little across the two treatment conditions and baseline. During baseline, Participant A scored at a mean of 94.8% accuracy. When the repeated reading intervention was implemented, Participant A's reading accuracy increased by 1.2% to 96%. When the teacher modeling intervention was implemented, his reading accuracy dropped again to 95.7%, which is lower than the repeated reading intervention, but still an increase in overall accuracy from the no-treatment, baseline condition.

In the area of reading comprehension, participant A scored an average comprehension score of 55% during the baseline phase. When asked to read the passage twice, participant A's reading comprehension of the passage increased minimally to an average of 60%. Finally, during the teacher modeling condition, his reading comprehension scores rose by an additional 10%, to 70% on average. Regarding improving comprehension, teacher modeling appeared to hold the most promise for participant A compared to the other two interventions.

During the study, participant A was willing to participate, but was cognizant of what he was missing in the classroom and was always in a hurry to finish and get back to class. This angst was inferred from the questions he asked and verbalizations made at the time of testing. He

attended to the task at hand promptly on most occasions, but was inquisitive about his level of reading in comparison to his classmates; he often asked if his peers were on the same reading level as he was. He was visibly upset with himself when he did not know the answers to the reading comprehension questions and would yell at himself or punch himself in the leg or arms in response. When the reading prompt was given and he was told what intervention he would be doing that day, he was always disappointed when he was not going to be the first one to read, but rather that the teacher would model the passage first. He would try to bargain in order to get to go first. His dislike for the teacher modeling intervention may have impeded his overall scores due to less effort being put forth when he did not get his way. Participant A also became very agitated or upset if he was not asked to go first out of the class for the testing session. Again he would try to bargain and would become upset if he did not get his way.

The purpose of this study was not to evaluate reading performance relative to classroom behavior. However, because daily classroom behavior data were collected as an ongoing classroom management component, these records are considered relative to reading performance. Table 19 displays the aggregate classroom behavior for all five of the study participants. This information, along with an individual behavior graph, offers additional information to communicate these patterns.

Participant A performed higher than anticipated relative to mean WCPM during two of the 16 sessions and lower than expected during one session. His overall performance on these days correlated with higher and lower-than-normal social and behavioral performance, as measured by daily classroom behavior data. These data focused on Participant A's compliance with classroom rules and his individualized education plan (IEP) social and behavioral goals. On those days that Participant A exhibited fewer problems in following teacher directions,

demonstrating safe and calm words and body, and in his ability to complete assigned academic tasks or participate in

Table 19

*Mean Daily Classroom Behavior by Individual Student*

Session	Participant A	Participant B	Participant C	Participant D	Participant E
1	83	98	94	90	44
2	80	100	73	100	74
3	82	98	94	100	72
4	53	100	100	93	64
5	86	84	100	90	26
6	79	96	96	100	52
7	76	100	100	98	56
8	82	93	86	100	61
9	83	100	62	95	72
10	88	96	65	100	68
11	88	100	98	97	70
12	82	98	85	100	54
13	80	100	100	92	66
14	83	100	94	100	76
15	100	100	98	100	58
16	100	100	94	97	72

classroom activities and discussions (as measured by classroom behavior rating scores), he performed exceptionally well in reading. On those days that Participant A exhibited more problems in following teacher directions, demonstrating safe and calm words and body, and in his ability to complete assigned academic tasks or participate in classroom activities and discussions (as measured by classroom behavior rating scores), he performed relatively poorly in reading. Generally Participant A's daily social and behavioral performance scores ranged between 80% and 88% over the course of the study. However, when Participant A's behavior scores fell outside of this range, his study-related reading performance increased or decreased in relationship to his behavior. As is the case during session 4, data results indicate his overall daily

social and behavior average dropped to 53% and his reading performance dipped to 67 WCPM during a baseline intervention session. However, just the opposite occurred during sessions 15 and 16. Billy’s overall daily behavior and social score was 100% both days. As shown in Table 19, Participant A’s reading performance on those days when he was experiencing more classroom behavior and social problems, his study-related reading performance was below average. When he was experiencing exceptional classroom behavior, his study-related reading performance was above average. Therefore, as reflected in Figure 16, Participant A’s daily classroom behavior appears to have impacted his overall reading performance.

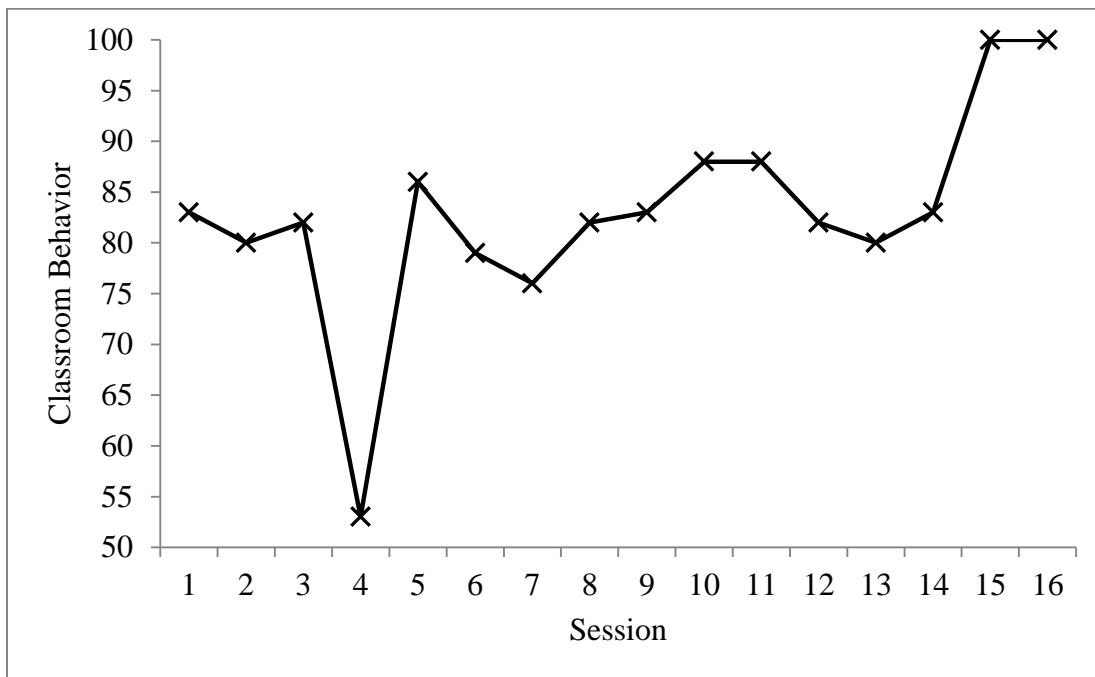


Figure 16. Participant A’s Overall Classroom Behavior

**Participant B.** During the baseline phase of the study, participant B scored at a mean of 61.75 WCPM. When the repeated reading intervention was applied, his WCPM mean score increased to 96.5, a significant gain of 34.75 WCPM. When the teacher modeling intervention was implemented, his mean scores dropped to 91 WCPM, an increase of 29.25 WCPM over baseline, but a slight decrease of 5.5 WCPM from the repeated reading intervention.

Like the other study participants, participant B's reading accuracy varied very little across the two treatment conditions and baseline. During baseline, Participant B scored at a mean of 93% accuracy. When the repeated reading intervention was implemented, Participant B's reading accuracy increased to 96.3%. At the implementation of teacher modeling condition, participant B's reading accuracy increased to 99.3%, a significant gain over the baseline condition.

In the area of reading comprehension, participant B scored an average comprehension score of 80% during the baseline phase. When asked to read the passage twice, participant B's reading comprehension of the passage decreased to an average of 76.6%. Then again during the teacher modeling condition, there was yet another decrease to 66.6%. Participant B appeared to put forth very little effort when answering the reading comprehension questions. He would constantly ask if he was done yet and would answer very quickly when the question was posed, not stopping to think through his answer or check for accuracy.

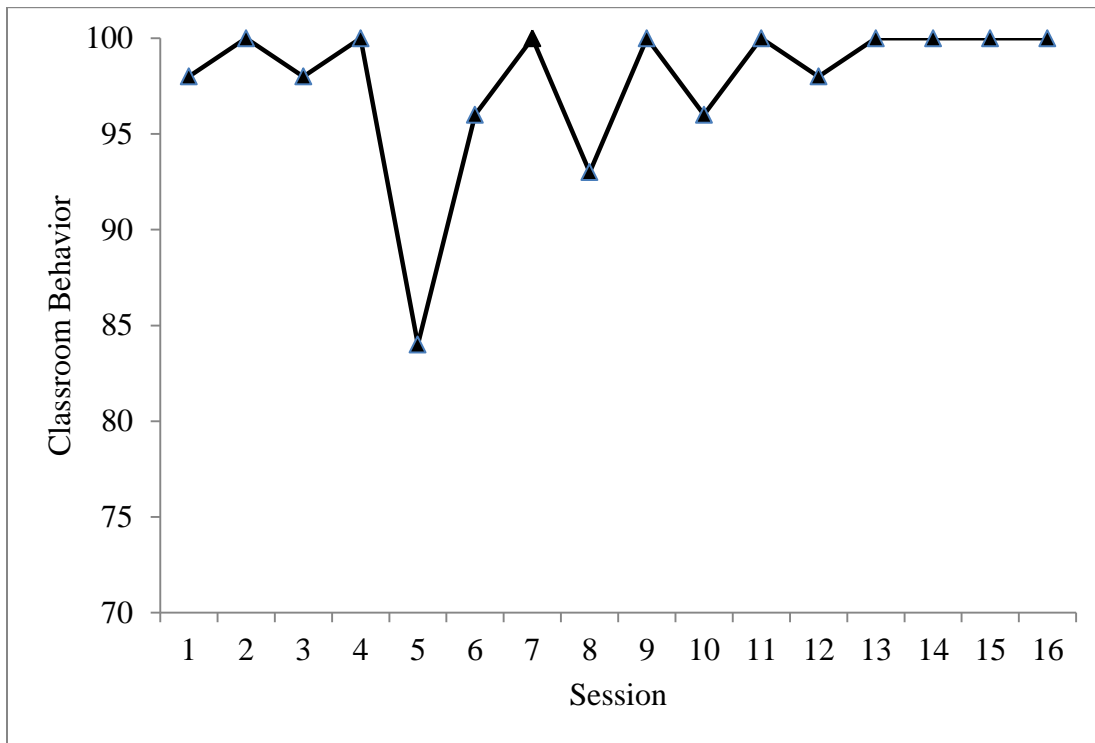
As noted earlier, the purpose of this study was not to evaluate reading performance relative to classroom behavior. However, ongoing collection of daily classroom behavior data permitted the investigator to consider each learner's reading performance within the context of daily behavior and social functioning. These data focused on Participant B's compliance with classroom rules and individualized education plan (IEP) social and behavioral goals. Participant B's overall reading performance and classroom behavior data revealed minimal outliers. Session 5 was the only day participant B did not produce expected oral reading fluency (i.e., WCPM scores) performance, as predicted from his overall average performance for each intervention. On that day, Participant B exhibited behavioral concerns on the bus ride to school and he thus began his day in a "safe area." Safe areas are classroom environment settings located in the back

of the room and used to separate and calm unruly students when they are unable to respond to teacher requests, when they are being hurtful or disruptive, or are unable to be accountable for their actions. When a child is asked to move to a safe seat, the move is intended to help the child move from an unsuccessful setting to a quiet place where the child can refocus and get back on track. When asked to be accountable for his actions, participant B struggled to do so; therefore he was asked to go to the safe area. This action impacted his overall performance that day, including his reading performance. Drops in behavioral performance indicate he had more difficulties than usual in following teacher directions, demonstrating safe and calm words and body, and in his ability to complete assigned academic tasks or participate in classroom activities and discussions (as measured by classroom behavior rating scores). As noted in Table 19 and Figure 17, he performed significantly lower in reading during that session.

Generally Participant B's daily social and behavioral performance scores fell within a range of 93% to 100% over the course of the study. However, when Participant B's scores fell outside of this range, his study-related reading performance decreased relative to his behavior. As is the case during session 5, data results indicate his overall daily social and behavior average dropped significantly to 84% and his reading performance dipped to 60 WCPM during the repeated reading intervention session.

It is also prudent to note that as a component of the building level system where the study took place, students began to transition back to their neighborhood school when they were able to maintain a specified level of behavior for a set period of time and demonstrated competence in their social, emotional and behavioral goals set forth on their IEP. At the time of the study, Participant B had met and exceeded the set criteria and was working toward transition back to his home school. Thus, during the course of the study, Participant B demonstrated relatively good

behavior and did not evidence management problems. This behavioral pattern, as shown in Table 19 and Figure 17, appeared to bode positively for his reading performance.



*Figure 17.* Participant B's Overall Classroom Behavior and Social Problems

**Participant C.** Participant C's overall oral reading fluency rate scores were considerably lower than the other study participants, particularly her WCPM scores under the teacher modeling condition. During the baseline phase of the study, Participant C scored at a mean of 57.25 WCPM. When the repeated reading intervention was applied, Participant C's WCPM mean score increased to 72.16. When the teacher modeling intervention was implemented her mean scores decreased to 46.8 WCPM. Participant C's oral reading fluency or the number of words read correctly in one minute could be due to her overall inattention. During the testing sessions, Participant C displayed difficulties when she was not actively engaged in the reading process. Therefore, when she had to follow along while the teacher modeled the passage, her attention appeared to drift and wane. She would chew on her fingers or pick at lint on her



clothing rather than attend to the passage as her teacher read aloud. This resulted in scores less than anticipated, because her inattention and distractibility appeared to mitigate the impact of her teacher modeling the reading passages.

Participant C's reading accuracy varied little across the two treatment conditions and baseline. During baseline, Participant C scored at a mean of 93.8% accuracy. When the repeated reading intervention was implemented, Participant C's reading accuracy increased minimally to 94.6%. When the teacher modeling intervention was implemented, her reading accuracy dropped again to 93.5%. Thus, across interventions and baseline, there was only a 1.1% variance of reading accuracy.

In the area of reading comprehension, participant C had an average comprehension score of 50% during the baseline phase. When asked to read the passage twice, participant C's reading comprehension increased to an average of 66.6%. During the teacher modeling phase of the study, her reading comprehension scores decreased by 3.3% to 63.3%. While slightly lower, this performance nevertheless was 13.3% better than her baseline comprehension.

As stated previously, links between classroom behavior and the students' reading performance were made, although it was not the purpose of this study. Participant C performed lower than anticipated relative to mean WCPM on three sessions. Her performance on these days correlated with lower-than-normal social and behavioral performance, as measured by daily classroom behavior data. These data focused on Participant C's compliance with classroom rules and individualized education plan (IEP) social and behavioral goals. On those days that Participant C exhibited more problems in following teacher directions, demonstrating safe and calm words and body, and in her ability to complete assigned academic tasks or participate in classroom activities and discussions (as measured by classroom behavior rating scores), she

performed relatively poorly in reading. Generally Participant C’s daily social and behavioral performance scores ranged between 82% and 100%. However, when Participant C’s scores fell well outside of this range, her study-related reading performance decreased. During session 2, data results indicate her overall daily social and behavior average was 73%. During session 9, her daily behavior and social score was 62%; during session 10, this score was 65%. As shown in Figure 18 and Table 19, Participant C’s reading performance on those days when she was experiencing more classroom behavior and social problems was below average. Therefore, Participant C’s overall classroom behavior appears to have had a direct impact on her ability to perform in the area of reading.

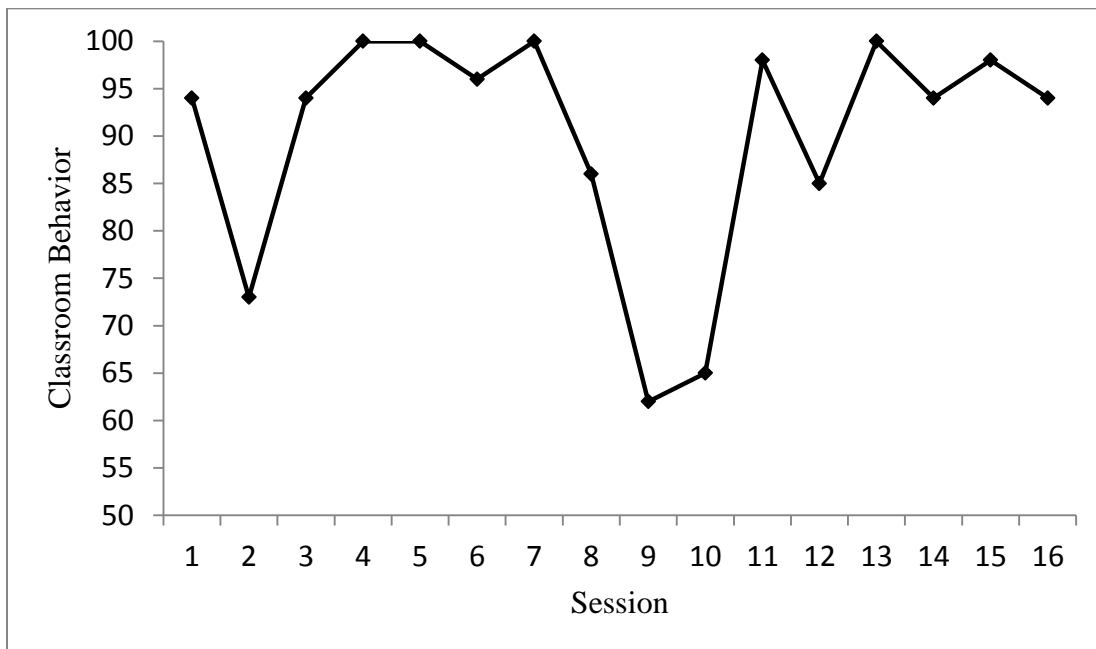


Figure 18. Participant C’s Overall Classroom Behavior and Social Problems

**Participant D.** During the baseline phase of the study, participant D scored at a mean of 87.25 WCPM. When the repeated reading intervention was applied, her WCPM mean score increased to 117, a 29.75 WCPM gain. However, when the teacher modeling intervention was

implemented, her mean scores dropped by nearly 20 words to 97.16 WCPM. Although lower, this is still an increase of nearly 10 words over baseline.

Like the other study participants, there was limited variability in participant D's reading accuracy over the two treatment conditions and baseline. During baseline, Participant D scored at a mean of 94.5% accuracy. When the repeated reading intervention was implemented, Participant D's reading accuracy increased to 96.5%. At the implementation of teacher modeling condition, participant D's reading accuracy then increased to 99%.

In the area of reading comprehension, participant D scored an average comprehension score of 75% during the baseline phase. When asked to read the passage twice, participant D's reading comprehension of the passage decreased to an average of 70%. During the teacher modeling condition, there was an increase over baseline to 76.6%. Participant D had a hard time correctly answering questions not directly stated in the passage. Thus she had demonstrated comprehension-related problems in making inferences based on the text material as well as answering vocabulary questions. These issues persisted across interventions.

Although the purpose of this study was not to evaluate reading performance relative to classroom behavior, availability of daily classroom behavior data made it possible for the investigator to consider each learner's reading performance within the context of daily behavior and social functioning. Regarding participant D, these data focused on compliance with classroom rules and individualized education plan (IEP) social and behavioral goals. Participant D's overall reading performance and classroom behavior data do not reveal any significant outliers. Participant D had been placed in the day treatment facility and had been receiving counseling services to help her deal with her trauma history. This treatment program appeared to reduce her frequency and intensity of behavioral outbursts. Overall, she consistently followed

adult directions and maintained appropriate school behavior while completing her academic tasks. In general, participant D's daily social and behavioral performance scores fell within a range of 90% to 100% over the course of the study. Her behavioral concerns, attendance, and maintaining appropriate personal boundaries did not appear to directly impact her daily academic and behavioral performance (see Figure 19 and Table 19).

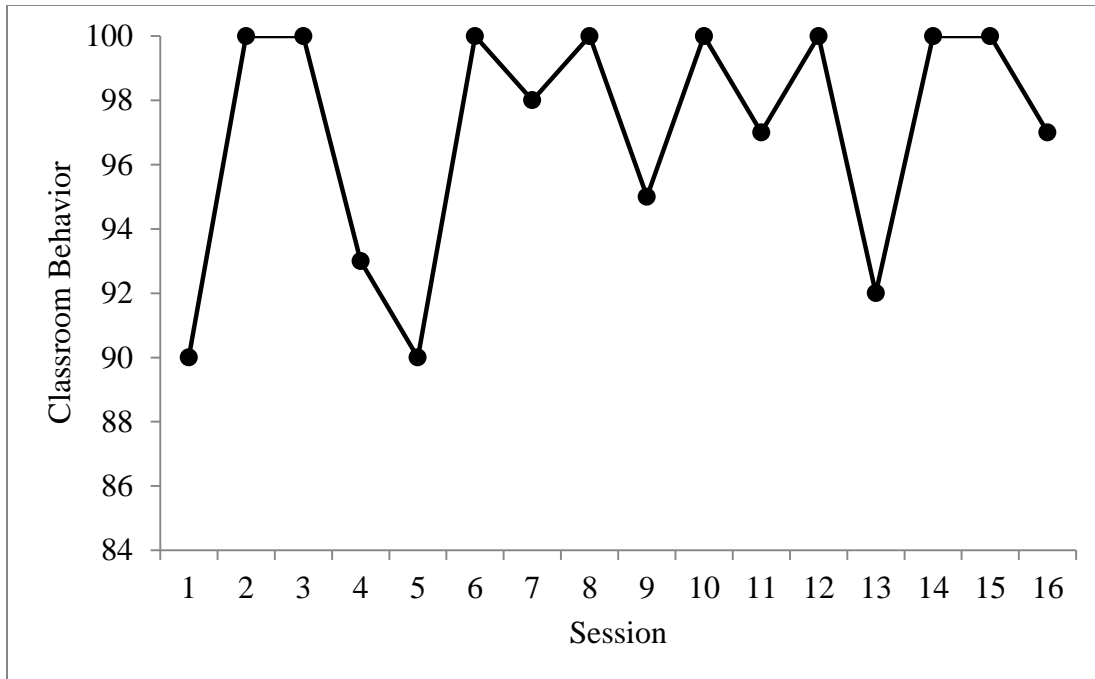


Figure 19. Participant D's Overall Classroom Behavior and Social Problems

**Participant E.** During the baseline phase of the study, participant E scored at a mean of 63.25 WCPM. When the repeated reading intervention was applied, his WCPM mean score increased to 92.8, a 29.45 WCPM gain. However, when the teacher modeling intervention was implemented, his mean scores dropped to 89.6 WCPM, an increase of 26.35 words over baseline. Both oral reading fluency interventions were effective, although repeated reading produced overall higher scores.

Participant E's reading accuracy increased slightly across treatment conditions over baseline. During baseline, Participant E scored at a mean of 93.2% accuracy. During the

repeated reading intervention, his reading accuracy increased to 94.2%. During implementation of teacher modeling condition, his accuracy increased to 96%.

In the area of reading comprehension, participant E scored an average comprehension score of 45% during the baseline phase. When asked to read the passage twice, participant D's reading comprehension of the passage increased to an average of 63.3%. Then during the teacher modeling condition, there was an additional increase 66.7%.

As noted earlier, ongoing data collection of daily classroom behavior provided an opportunity for the investigator to consider each learner's reading performance within the context of daily behavior and social functioning. For Participant E, these data focused on compliance with classroom rules and individualized education plan (IEP) social and behavioral goals. Participant E's overall reading performance and classroom behavior data do not reveal significant peaks in the data, in spite of his turbulent behavior (see Figure 20 and Table 19). Participant E's daily social and behavioral performance scores fell within a range of 26% to 76% over the course of the study. Specific behavior concerns included self-abusive behaviors and extreme tantruming, which often results in the classroom being evacuated and the use of preventative measures to keep him from harming himself. However, his behavior problems did not appear to impact his reading performance over the course of the study.

Participant E was the most eager of all study participants to be included in this dissertation research because of the bond between the child and the researcher. As a result of having the opportunity to work with a child for multiple years, Participant E and the researcher had a positive relationship which had built and developed over a span of four years. He appeared to be eager to please the researcher as evidenced by his actions and statements about the project (i.e., "I will try my hardest for you, Mrs. K." or "I'll do it for you, Mrs. K, but nobody else"). He

would make statements of consent to complete the research, even in the midst of his anger or behavioral outburst. In the classroom he was the first to offer assistance on classroom tasks, or read for the research study. He would stand up for the teacher to his peers when their behaviors negatively impacted the classroom environment or threatened to hurt the teacher. Typically, when participant E struggled behaviorally, he would be unable to engage academically in classroom tasks. However, as evidenced by his daily behavior performance, his overall scores are low, but because of the relationship between the child and researcher, the child's behavioral performance did not negatively impact his reading performance, as it may have under different circumstances. As revealed in Figure 20 and Table 19, E's behavior was under good stimulus control during the course of the study and thus did not appear to have negatively impacted his reading performance.

For participant E, both interventions proved to be invaluable for making reading gains. Specifically in the areas of reading accuracy and comprehension, the teacher modeling intervention appeared to have the greatest overall benefit for Participant E. In the area of improved oral reading fluency gains, repeated reading was of greatest value.

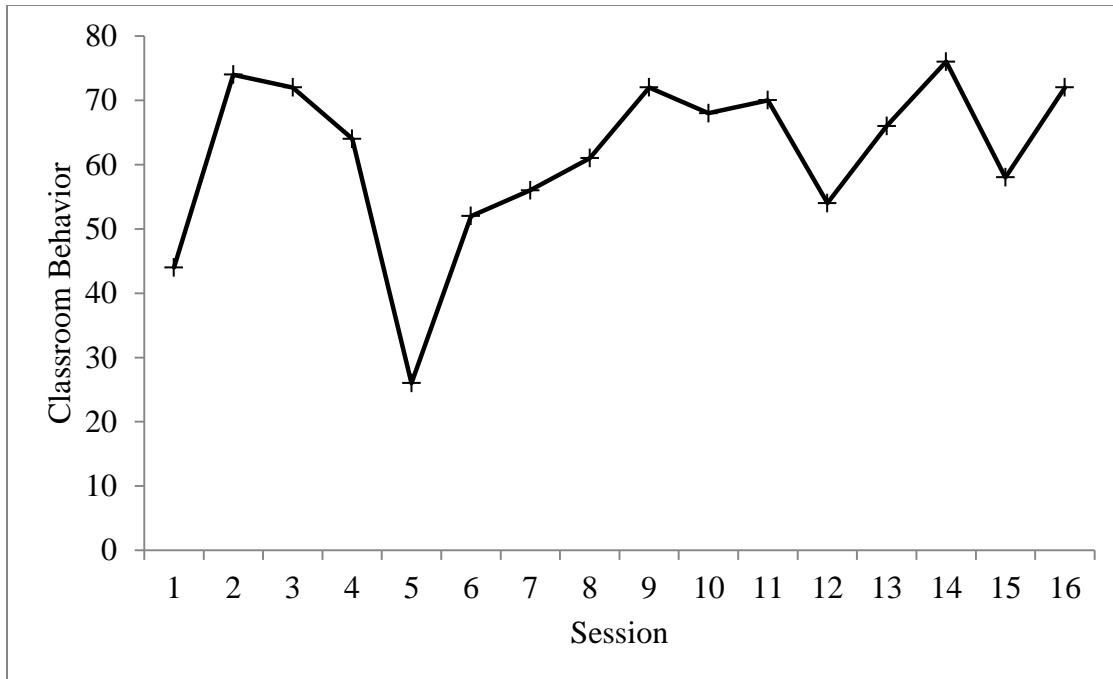


Figure 20. Participant E's Overall Classroom Behavior

### Implications for Practitioners

These findings are important for educators to consider given the alarming number of students with EBD who experience negative school and life outcomes as a result of their disability. These problems are significant, and include academic failure, grade retention, and school dropout (Kauffman, 2001; Lane et al., 2008; Sitlington & Neubert, 2004; U.S. Department of Education, 2003b; Wagner & Cameto, 2004; Wagner & Davis, 2006; Wagner et al., 2005). In order to decrease negative school experiences and increase learners' post-school success and opportunities, we must shift our focus from looking singularly at students' behavioral needs by also addressing their academic needs. In particular, reading skills require attention, because "more than any other area, school success is dependent on knowing how to read and understanding what is read" (Vaughn et al., 2002, p. 2). Accordingly, educators should work to implement academic interventions such as repeated reading and teacher modeling, as

described in this study, particularly with students who read below grade level and fail to meet the oral reading fluency norms.

An important aspect for teachers to consider is the versatility of both interventions. Each intervention requires minimal materials and do not involve complex designs for implementation. Rather, both interventions can be used in conjunction with the district's adopted reading curriculum. These interventions are also time-efficient and can be used to evaluate both immediate improvement and retention of reading gains (Begeny et al., 2009). The findings of this research identify specific benefit in using both interventions, although overall, the repeated reading intervention presented the most significant oral reading fluency gains across participants. The teacher modeling intervention demonstrated greater gains in reading accuracy and comprehension. Practitioner preference of intervention may be based on the overall goal of the intervention (i.e., oral reading fluency gains, improvement of reading accuracy, or increases in reading comprehension).

### **Limitations**

There are several limitations to the current study. First, the sample size was small; thus, it is imperative that results be interpreted conservatively. A small sample size, and in this instance use of single-participant methodology, requires a conservative interpretation of data and inferences related to analyzing difference gains among treatments. A small sample size also restricts the generalizability of findings. However, when studying low incidence populations, such as students receiving services for severe behavior problems in a self-contained school, small sample sizes are likely; therefore, single-participant methodology tends to be the research design of choice (Lane et al., 2005; Lane et al., 2008). Future research should consider using additional



location sites across a wider geographical area as a means of increasing the sample size to enhance external validity.

The heterogeneity of the sample was also a limitation in the present study. Although multidisciplinary teams determined that students demonstrated behavior patterns severe enough to warrant placement in a self-contained school for student with EBD, not all of the students in the study were identified as emotionally disturbed as a primary educational disability (Lane et al., 2008). Academic, social, and behavioral characteristics of students receiving services should be evaluated and compared to identify similar participant characteristics, relative to their performance under various reading interventions.

Finally, the reading comprehension questions were teacher created and evaluated. Thus the reliability and validity of the questions may arguably be limited. Future research should consider using research-validated reading comprehension questions rather than CBM to increase the overall reliability and validity of the study.

### **Future Research**

Based on the findings of the present study, as well as previous research (Al-Otaiba & Rivera, 2006; Coleman & Vaughn, 2000; Rivera et al., 2006; Vannest et al., 2009; Wehby et al., 2003) continued investigation into the use of reading interventions for students with emotional and behavioral disorders is warranted.

Large-group experimental designs should be completed to further bolster efficacy claims to address the ever widening academic gap. This should include diverse populations, control groups, different settings, and increased intervention duration. Moreover, research should continue to explore a broad range of reading interventions and their utility with the EBD population.

Research has shown that various reading interventions have been validated as effective with elementary students (NRP, 2000). The National Reading Panel (2000) has identified effective reading strategies to teach essential reading skills. These interventions must be evaluated for effectiveness with the EBD population of learners as well as with other diagnostic groups.

### **Final Summary**

Overall, the findings of this study were generally consistent with those reported by other researchers (Begeny et al., 2009; Kostewicz & Kubina, 2010; Musti-Rao et al., 2009; Staubitz et al., 2005). Aggregate data (mean, median and standard deviation) reveal that the individual participants all improved their oral reading fluency to varying degrees with the implementation of the tested interventions. Despite the noted limitations, the results of the present study, in conjunction with previous experimental studies (Begeny et al., 2009; Kostewicz & Kubina, 2010; Musti-Rao et al., 2009; Staubitz et al., 2005), suggest that the use of repeated readings and teacher modeling have a good likelihood of enhancing the overall reading ability of students with emotional and behavioral disorders.

Increased reading independence for students with emotional and behavioral disorders is the ultimate goal. These goals need to be pursued within the larger context of promoting quality of life and improved life outcomes.

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## APPENDIX A

### PERMISSION LETTER FROM HUMAN PARTICIPANTS COMMITTEE LAWRENCE



9/14/11  
HSCL #19585

Tara Kalis  
6109 NW 78th Street  
Kansas City, MO 64151

The Human Subjects Committee Lawrence reviewed your research update application for project

19585 Kalis/Simpson (SPED) Increasing Reading Fluency Performance of Students with Emotional and Behavioral Disorders

and approved this project under the expedited procedure provided in 45 CFR 46.110 (f) (7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

The Office for Human Research Protections requires that your consent form must include the note of HSCL approval and expiration date, which has been entered on the consent form sent back to you with this approval.

1. At designated intervals until the project is completed, a Project Status Report must be returned to the HSCL office.
2. Any significant change in the experimental procedure as described should be reviewed by this Committee prior to altering the project.
3. Notify HSCL about any new investigators not named in original application. Note that new investigators must take the online tutorial at [http://www.rcr.ku.edu/hscl/hsp\\_tutorial/000.shtml](http://www.rcr.ku.edu/hscl/hsp_tutorial/000.shtml).
4. Any injury to a subject because of the research procedure must be reported to the Committee immediately.
5. When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity. If you use a signed consent form, provide a copy of the consent form to subjects at the time of consent.
6. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.

Please inform HSCL when this project is terminated. You must also provide HSCL with an annual status report to maintain HSCL approval. Unless renewed, approval lapses one year after approval date. If your project receives funding which requests an annual update approval, you must request this from HSCL one month prior to the annual update. Thanks for your cooperation. If you have any questions, please contact me.

Sincerely,

A handwritten signature in blue ink that reads 'Jan Butin'.

Jan Butin  
HSCL Associate Coordinator  
University of Kansas

cc: Richard Simpson



## **APPENDIX B**

### **TEACHER CONSENT FORM**

#### **Increasing Reading Fluency Performance of Students With Emotional and Behavioral Disorders**

##### **INTRODUCTION**

The Department of Special Education at the University of Kansas supports the practice of protection for human participants participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You may refuse to sign this form and not participate in the study. You should be aware that even if you agree to participate, you are free to withdraw at any time. If you do withdraw from this study, it will not affect your relationship with the Park Hill School District or Park Hill Day School and the services they may provide to you.

##### **PURPOSE OF THE STUDY**

The purpose of this study is to evaluate the effectiveness of two reading interventions, repeated readings and teacher modeling, on the oral reading fluency rates (or the number of words your child reads correctly per minute), reading accuracy, and their overall reading comprehension. This project is a component of a dissertation research proposal through the University of Kansas.

##### **PROCEDURES**

Teachers that agree to participate in this study will receive information regarding detailed procedures and expectations. Selected students, for whom parental consent has been granted, will be assessed on their oral reading fluency, reading accuracy, and reading comprehension while reading aloud a passage at their instructional reading level. In the first intervention phase of the study students will use a repeated reading intervention, where they will repeatedly read the same passage. In the second intervention phase of the study, students will be given a model of the desired reading behavior, by the teacher first reading the passage to them. At the end of each session, students will be reassessed on their oral reading fluency, reading accuracy, and reading comprehension.

As a teacher, your involvement may include access to your students at a pre-determined scheduled time or additionally may be called upon to provide reliability and fidelity of implementation data to the researcher over the course of the study. If you choose to participate in this study training will be provided on the specific procedures and expectations.

##### **RISKS**

There are no anticipated risks associated with this study.

##### **BENEFITS**

All participants have the opportunity to benefit in a number of ways. First, information will be gathered that detail the students reading abilities, which will assist you in identifying the most beneficial reading interventions to increase your student's oral reading fluency and comprehension. Through participation, students have the potential to improve their overall reading performance. Finally, you will have new strategies and your students will have new tools to utilize in order to address reading fluency and comprehension skills. Thus, students will be able to continue working on their literacy development even after the research is finished. In a broad view, this study has the potential to provide critical research on best practice in teaching reading to students with emotional and behavioral concerns.

#### PAYMENT TO PARTICIPANTS

Participants will not be paid monetarily for their participation in the study.

#### INFORMATION TO BE COLLECTED

To perform this study, researchers will collect information about your students. This information will be obtained from: observations, questionnaires, and interviews by researchers. Also, information collected from the study activities that are listed in the Procedures section of this consent form.

You or your student's names will not be associated in any way with the information collected about you or with the research findings from this study. The researcher will use a study number, initials, or a pseudonym instead of your name. Information gleaned from this research will not be used to evaluate your performance.

The information collected about you and your students will be used by: The Principal Investigator and support staff working on the project, and the staff of the Park Hill Day School. The purpose of this disclosure would be to collaboratively assess data to make programming decisions for your child and write research articles to present to the field. Again, your name(s) would not be associated with the information disclosed to outside agencies.

The researcher will not share information about you with anyone not specified above unless required by law or unless you give written permission.

Permission granted on this date to use and disclose your information remains in effect indefinitely. By signing this form you give permission for the use and disclosure of your information the purposes of this study at any time in the future.

#### REFUSAL TO SIGN CONSENT AND AUTHORIZATION

You are not required to sign this Consent and Authorization form and you may refuse to do so without affecting your right to any services you are receiving or may receive from the Park Hill School District. However, if you refuse to sign, you cannot participate in this study.

CANCELLING THIS CONSENT AND AUTHORIZATION

You may withdraw your consent to participate in this study at any time. You also have the right to cancel your permission to use and disclose information collected about you, in writing, at any time, by sending your written request to the principal investigator or the faculty advisor, at the addresses listed below. If you cancel permission to use your information, the researchers will stop collecting additional information with your students. The research team may use and disclose information that was gathered before they received your cancellation, as described above.

PARTICIPANT CERTIFICATION

I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to, any questions I had regarding the study. I understand that if I have any additional questions about my rights as a research participant, I may call (785) 864-7429 or (785) 864-7385, write the Human Participants Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7568, or email [irb@ku.edu](mailto:irb@ku.edu).

I agree to take part in this study as a research participant. By my signature I affirm that I am at least 18 years old and that I have received a copy of this Consent and Authorization form.

\_\_\_\_\_  
Type/Print Teacher’s Name

\_\_\_\_\_  
Teacher Signature

\_\_\_\_\_  
Date

Researcher Contact Information

Tara Kalis  
Principal Investigator  
Park Hill School District  
7642 N Green Hills Road  
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**Approved by the Human Participants Committee University of Kansas,  
Lawrence Campus (HSCL). Approval expires one year from 9/14/2011.  
HSCL #19585**

## **APPENDIX C**

### **PARENT CONSENT FORM**

#### **Increasing Reading Fluency Performance of Students With Emotional and Behavioral Disorders**

#### **INTRODUCTION**

The Department of Special Education at the University of Kansas supports the practice of protection for human participants participating in research. The following information is provided for you to decide whether you wish to allow your child to participate in the present study. You may refuse to sign this form and not participate in the study. You should be aware that even if you agree to participate, you are free to withdraw at any time. If you do withdraw from this study, it will not affect your relationship with the Park Hill School District or Park Hill Day School and the services they may provide to you.

#### **PURPOSE OF THE STUDY**

The purpose of this study is to evaluate the effectiveness of two reading interventions, repeated readings and teacher modeling, on the oral reading fluency rates (or the number of words your child reads correctly per minute), reading accuracy, and their overall reading comprehension. This project is a component of a dissertation research proposal through the University of Kansas.

#### **PROCEDURES**

Families that agree to participate in this study will receive information regarding detailed procedures and expectations. Students will be assessed on their oral reading fluency, reading accuracy, and reading comprehension while reading aloud a passage at their instructional reading level. In the first intervention phase of the study students will use a repeated reading intervention, where they will repeatedly read the same passage. In the second intervention phase of the study, students will be given a model of the desired reading behavior, by the teacher first reading the passage to them. At the end of each session, students will be reassessed on their oral reading fluency, reading accuracy, and reading comprehension.

#### **RISKS**

There are no anticipated risks associated with this study.

#### **BENEFITS**

All participants have the opportunity to benefit in a number of ways. First, information will be gathered that detail the students reading abilities to assist teachers in identifying the most beneficial reading interventions to increase your child's oral reading fluency and comprehension. Students have the potential to improve their overall reading performance. Finally, students will have new ways to address their fluency and comprehension skills. Thus, students will be able to

continue working on their literacy development even after the research is finished. In a broad view, this study has the potential to provide critical research on best practice in teaching reading to students with emotional and behavioral concerns.

#### PAYMENT TO PARTICIPANTS

Participants will not be paid monetarily for their participation in the study.

#### INFORMATION TO BE COLLECTED

To perform this study, researchers will collect information about your child. This information will be obtained from: observations, questionnaires, and interviews by researchers. Also, information collected from the study activities that are listed in the Procedures section of this consent form.

You or your child's names will not be associated in any way with the information collected about you or with the research findings from this study. The researcher will use a study number, initials, or a pseudonym instead of your name.

The information collected about you and your child will be used by: The Principal Investigator and support staff working on the project, and the staff of the Park Hill Day School. The purpose of this disclosure would be to collaboratively assess data to make programming decisions for your child and write research articles to present to the field. Again, your name(s) would not be associated with the information disclosed to outside agencies.

The researcher will not share information about you with anyone not specified above unless required by law or unless you give written permission.

Permission granted on this date to use and disclose your information remains in effect indefinitely. By signing this form you give permission for the use and disclosure of your information the purposes of this study at any time in the future.

#### REFUSAL TO SIGN CONSENT AND AUTHORIZATION

You are not required to sign this Consent and Authorization form and you may refuse to do so without affecting your right to any services you are receiving or may receive from the Park Hill School District. However, if you refuse to sign, you cannot participate in this study.

#### CANCELLING THIS CONSENT AND AUTHORIZATION

You may withdraw your consent to participate in this study at any time. You also have the right to cancel your permission to use and disclose information collected about you, in writing, at any time, by sending your written request to the principal investigator or the faculty advisor, at the addresses listed below. If you cancel permission to use your information, the researchers will

stop collecting additional information about you. The research team may use and disclose information that was gathered before they received your cancellation, as described above.  
**PARTICIPANT CERTIFICATION**

I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to, any questions I had regarding the study. I understand that if I have any additional questions about my rights as a research participant, I may call (785) 864-7429 or (785) 864-7385, write the Human Participants Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7568, or email [irb@ku.edu](mailto:irb@ku.edu).

I agree to take part in this study as a research participant. By my signature I affirm that I am at least 18 years old and that I have received a copy of this Consent and Authorization form.

_____	_____
Type/Print Parent's Name	Child's name
_____	_____
Parent/Guardian Signature	Date

**Researcher Contact Information**

Tara Kalis  
Principal Investigator  
Park Hill School District  
7642 N Green Hills Road  
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<b>Approved by the Human Participants Committee University of Kansas, Lawrence Campus (HSCL). Approval expires one year from 9/14/2011. HSCL #19585</b>
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## **APPENDIX D**

### **ASSENT PROCEDURE**

To be used with the students after their parents/guardians have given consent.  
Verbal explanation of the project to the students:

As part of Communication Arts, each day I will be asking you to read a short story to me. While you are reading, I will be keeping track of the words you read and looking to see which words you were able to read correctly and which of the words you struggled with. I will also be counting the number of words you can read in one minute or the speed at which you read. When you finish the whole story I will ask you five reading comprehension questions about the story to see how well you understood what you read.

During this process, I will be trying two different interventions to see if they have any impact on how many words you can read in one minute. One of the new things we will try is having you read a story more than one time to determine if repeatedly reading the story will make the story easier for you each time. Another intervention we will try is to have you listen to me read the story first, and then have you read it after I do. This will give you a model of how it should look or sound.

When you have finished reading and answering the questions together we will figure out your reading fluency rate, or the number of words you read correctly per minute, and how well you understood what you read. Together we will chart your progress, celebrate the great things that are happening and setting target goals for the next day. I will be with you through the whole process every day and will help to clarify and answer any questions you might have as we go.

This study will run approximately 4 weeks. If you find that either of these interventions help you with your reading, you may be able to use these skills in other areas when you are reading.

Your participation in this study is strictly voluntary. You can ask to stop at any time. Your real name will not be used when the results of this study are published. If you have any questions, you can ask the principal, your teacher, or the researcher working with you.

Will you agree to participate in this reading study?

## APPENDIX E

### READING COMPREHENSION QUESTIONS

#### DIBELS – 2<sup>nd</sup> Grade Teacher Created Reading Comprehension Questions

##### Riding the Bus to School – Probe 1

1. Who waits for the school bus with the children? *A friend's Grandmother*
2. Name one way the writer knows that it is time to walk to the school bus? *Watch the clock, mom phones from her office*
3. What is the signal the bus driver gives so that cars will stop? *Turns yellow flashing lights/red lights on*
4. In the second from the last sentence, the writer uses the word concentrate. What is another word or words that mean almost the same?
5. What could happen if bus riders are not sitting down when the bus starts moving?

##### Twins – Probe 2

1. How many people are in the author's family? *Four*
2. What does it mean to be a twin? *Two babies born on the same day*
3. Who can tell the twins apart when they are dressed the same? *Mom and Dad*
4. The twins are identical twins. What is another word that is almost the same as identical?
5. What are some disadvantages of being a twin?

##### Open House at My School – Probe 3

1. Who are the members of the author's family? *Mom, Grandma and the Writer*
2. What grades are included in the author's class? *2<sup>nd</sup> and 3<sup>rd</sup>*
3. What did the teacher tell parents was important for them to make sure we do? *Homework*
4. What does penmanship mean?
5. Why does a school have an open house?

##### Colors of the Rainbow – Probe 4

1. How does the author feel about the color red? *Smiling and happy*
2. How does the author feel about the color blue? *Makes me feel like taking a nap*
3. How does the author feel about the color green? *Like climbing trees*
4. What is a meadow? What could you find in a meadow?
5. Why does the author say rainbow is his/her favorite color?

##### The Wind has a Job to Do – Probe 5

1. List 3 ways the wind is important to life. *Moves heat from the sun, would be too hot without wind, too cold in some areas, brings moisture, spreads seeds*
2. List 4 ways moisture falls. *Rain, Sleet, Snow, Ice*



3. How does wind help plants? *Helps them spread to new places, blows pollen so plants can ripen, helps corn and wheat*
4. What does it mean to depend on something or someone?
5. Why could farmers not row some crops without wind?

#### Writing My Life Story – Probe 6

1. What was the first part of the author’s life that the author wrote about? *The night the author was born*
2. How old is the author at the time the story was written? *6 years old*
3. What were two of the activities the author liked to do? *Ride scooter, swing in the park, eating ice cream, making tall towers*
4. Use the word draw in a sentence.
5. Does the story take place in the past, present or future? *Present*

#### I’m a Good Babysitter – Probe 7

1. How old was the author when they first started babysitting? *12 years old*
2. Was the baby cousin sad when her parents drove away? *No*
3. Why did the authors Aunt and Uncle leave their cell phone number? *So the author could call them in an emergency.*
4. What does the word supper mean?
5. Do you think the parents will ask the babysitter to babysit for them again?

#### Playing Shuffleboard with Grandpa – Probe 8

1. What did Grandpa say is the secret to playing shuffleboard well? *Push the disk smoothly*
2. What did the author and his grandpa win for having the most points? *Blue Ribbon*
3. True or False: Every man that lives where the authors Grandpa lives likes to play shuffleboard? *False*
4. Define the word smooth
5. Where does Grandpa live?

#### I Want to Fly in Space – Probe 9

1. What does the author want to do when he grows up? *Fly in space*
2. Name two things the author thinks he will see when he gets into space? *Watch the sun and moon come up, see the stars, other spaceships, see the blue and green earth*
3. What will the author be able to do after he learns to fly planes very well? *He will learn how to fly space ships*
4. The author says he has a plan worked out to fly into space. What is something that you plan for?
5. Why does the author think he will need to be on T.V.?

New Bookstore – Probe 10

1. What were the titles of the books that the author and the sister’s grandma bought for them? *Secret Magic Tricks, When you give a Mouse a Cookie*
2. What section did Grandma go to while the grandchildren were in the children’s section? *The Cookbook Section*
3. Why did the grandchildren think the children’s section was perfect for them? *The tables and chairs were just their size, and/or there were toys and pillows everywhere*
4. The author said the bookstore was huge. What is another word that means the same or nearly the same as huge?
5. Why do you think Grandma took the children to the bookstore?

We Celebrate Kwanzaa – Probe 11

1. On what continent did Kwanzaa begin? *Africa*
2. How long does Kwanzaa last? *7 days*
3. What activities are done after dinner? *Play music and dance*
4. What does it mean to “feast”?
5. Why is celebrating Kwanzaa important to families?

When Grandpa and I Garden – Probe 12

1. What vegetables does the narrator like to eat? *Radish and carrots*
2. Tell the 1<sup>st</sup> thing the narrator and Grandpa did to the garden? *Made space or pulled weeds*
3. What color are strawberries when they are ripe? *Red*
4. What does it mean to have a green thumb?
5. What could happen to the plants if the weather did not warm up?

Going to the Swimming Pool – Probe 13

1. Tell one thing the narrator likes to do on the big waves?
2. True or False: The narrator likes jumping off the diving board best. *False*
3. What is mom’s rule? *Wear Sunscreen*
4. If you could pretend to be any animal, what animal would you be?
5. If you don’t follow the rules what could happen?

I’m Adopted – Probe 14

1. The narrator of this passage is a boy or a girl? *Girl*
2. How old was the narrator when her parents found her? *3 months*
3. Why did the mother & father want to adopt children? *There are many without homes*
4. Use the word “arrange/d” in a sentence.
5. Why does the narrator feel her family is special?

Going to Play – Probe 15

1. Who went to the play? *Narrator and friends*
2. What play did the narrator go see? *Princess and the Pea*
3. Where did the narrator and friends sit? *Front row*
4. Why would you have actors sign your program?
5. Why did the narrator and friends hurry back to their seats when the lights went down?

Going to the Movies – Probe 16

1. What does the family like to do together? *Go to the movies*
2. Why doesn't mom like going to the movie theatre? *Have to plan ahead*
3. Where is the family's favorite place to watch movies? *At home*
4. Give me an example of a time you were noisy.
5. What makes you think this family likes spending time together?

I Want to be a Police Officer – Probe 17

1. When did the author decide he/she wanted to be a police officer? *After the police officers came to school*
2. What do police officers spend most of their time doing? *Helping others*
3. Which of the five senses do dogs use to find missing people? *Scent*
4. Have you ever been given a command by an adult? Give an example.
5. What is a dog's strongest sense?

If I had a Cat – Probe 18

1. Why can't the author have a real cat? *Allergies/allergic*
2. What happens when Gray Kitty rubs the author's legs? *Start itching and I run away*
3. Give 2 examples of what happens if the author touches a cat?
4. True or False: A neighbor is someone who lives with you? *False*
5. How does the author feel about cats?

Riding the Elevator – Probe 19

1. How tall is the building in the story? *44 stories*
2. What part of town is the building located in? *downtown*
3. Why did the author have to hold on to the bar? *Elevator moved so fast*
4. True or False: to observe something means to watch something happen?
5. What are some of the things you might see from the observation deck?

My Friend is From Korea – Probe 20

1. How did the girls learn more about each other? *Writing letters*
2. What is the girls' favorite part of a meal? *Dessert*
3. Where did the author go to sample different Korean Foods? *Asian Festival*

4. What is a pen pal?
5. How is it different having a pen pal from another country than a pen pal from down the street?

### **DIBELS – 3<sup>rd</sup> Grade Teacher Created Reading Comprehension Questions**

#### A Present from Me – Probe 1

1. Why did the narrator need to earn money? *To take stepmother out for her birthday*
2. How many trips to the store did the narrator make? *Five*
3. What job did the narrator do for the man downstairs? *Walk his dog*
4. What does the word ‘deposit’ mean in this passage?
5. Why did mom say it was the best birthday ever?

#### The Olympic Games – Probe 2

1. How often are the Olympics held? *Every 4 years*
2. What kind of metal does the 2<sup>nd</sup> place earn? *Silver*
3. True or false: Today only men participate in the Olympics. *False*
4. What does it mean if you ‘receive’ a compliment?
5. What conclusion can you draw from the fact that the Olympics have been held for 200 years?

#### Mother’s Day – Probe 3

1. Why did the narrator make breakfast for mom? *Mother’s Day*
2. How did they make breakfast special? *Made it themselves*
3. What topping was on the waffle? *Strawberries with whipped cream*
4. What is one example of ‘silverware’?
5. Why was mom told to stay out of the kitchen?

#### Surprise Party – Probe 4

1. Where was the party? *Friend’s house*
2. True or False: A responsible person gets their work done at school? *True*
3. Who wrote the invitations? *Mom and narrator*
4. What does the word assist mean in this passage?
5. The author wrote that he/she was responsible for making sure everyone was invited to the party. How was that possible?

#### The Sun – Probe 5

1. How long does it take sunlight to reach earth?
2. How does the sun cause an electric power failure on earth? *Solar Flare*
3. True or False: Scientists are still learning about the sun. *true*

4. Name another word that can mean the same or almost the same as “convert”.
5. Explain why solar cells can be so different in size.

#### My Dad Goes to School– Probe 6

1. True or False: This dad has perseverance.
2. What is dad studying at school? *Computer Science*
3. What is the dad’s goal? *To get a better job*
4. Who has the most homework? *dad*
5. Why do the sisters get home on the bus before their dad?

#### Satellites – Probe 7

1. In which direction does the Big Dipper point? *North*
2. Where was the first satellite launched from? *Russia*
3. How long did Sputnik circle around the Earth? *Thirteen weeks*
4. What is a constellation?
5. Why does the narrator look at the sky during the night and not during the day?

#### Elephants – Probe 8

1. What are the two types of elephants? *Asian and African*
2. Tell one difference between Asian and African Elephants.
3. Where do most people see elephants? *Zoos or circuses*
4. What is a preserve? How does it help the elephants?
5. How could an elephant damage a crop or field?

#### The Sea Park – Probe 9

1. Why did the trainer toss fish into the sea lion pool? *To eat*
2. Who lives at the base of sea plants? *Crabs and Clams*
3. The narrator’s favorite creature in the park is the \_\_\_\_\_. *Jellyfish*
4. What is something you might toss?
5. Where else might you find these same animals living?

#### I Belong to a Big Family – Probe 10

1. How many people live in the house? *Nine*
2. What is the narrator’s favorite game? *spoons*
3. Tell one rule the narrator’s family follows?
4. True or False: A responsible student does all their homework?
5. What might happen if families had no rules?

#### I’m an African American – Probe 11

1. Which continent is the 2<sup>nd</sup> largest? *Africa*

2. What color sometimes represents freedom? *black*
3. Where did the narrator's ancestors come from? *Africa*
4. True or False: In this passage, the word unique means common?
5. Explain why each nation in Africa has its own flag.

#### Strawberry Jam – Probe 12

1. What type of jam did the family make? *strawberry*
2. Where did they get the strawberries? *farm*
3. How did Grandma choose the best strawberries? *Reddest ones*
4. Name something you might measure.
5. What would happen if the strawberries weren't ripe?

#### The Dragon – Probe 13

1. What comes out of the dragon's mouth? *smoke*
2. True or False: Dragons are make-believe. *True*
3. Besides the blue dragon, what other creature protects Korea? *White Tiger*
4. Tell something your family 'celebrates'.
5. Explain why a make-believe dragon is used in celebrations in China and Korea. Why is it better than using a real animal?

#### The Sun Dance – Probe 14

1. Where did the Lakota-Sioux live? *Great Plains*
2. When did the Lakota-Sioux perform the sun dance? *Before a hunt*
3. The good luck charms were made of what? *Shell, rock or bone*
4. What does the word provided mean in this passage?
5. How did the Lakota-Sioux feel about the buffalo? *Useful, important, valuable*

#### Nicknames – Probe 15

1. Why did the father call his son, "bird"? *he looked like a robin when he was eating*
2. How old was the narrator when he got his nickname? *6 months*
3. What grade is the narrator in now? *3<sup>rd</sup> grade*
4. What is a nickname? *Bird*
5. What might happen if you don't answer when the teacher calls on you?

#### I have my Own Savings Account – Probe 16

1. What does the narrator want to buy? *Skateboard*
2. How does the narrator earn money? *Completing his chores*
3. How much money did mom pay for cleaning the garage? *\$5*
4. True or False: 'interest' is like getting extra money.

5. What might happen if the money does not go into a savings account? OR A credit unit is similar to a \_\_\_\_\_ (*bank*).

### **DIBELS – 4<sup>th</sup> Grade Teacher Created Reading Comprehension Questions**

#### The Bakery – Probe 1

1. What caused Josh to wake up? *Sunlight*
2. Who bought the breakfast muffins? *Dad*
3. Where did Josh go after breakfast? *The Bakery*
4. Give me an example of something you would ‘devour’.
5. Why do you think Mr. Lee wanted Josh to meet his son? *Friendship*

#### The Woodsman and the Lost Ax – Probe 2

1. Where did the Woodsman lose his ax? *At the lake.*
2. Who came to help the Woodsman? *Mercury*
3. How many axes did Mercury bring up for the Woodsman? *Three*
4. If you eat all the cookies on the plate area you being greedy?
5. What lesson did the second man learn about honesty? *People don’t like dishonesty or people won’t help you if you are dishonest.*

#### A Tour of Jewel Cave – Probe 3

1. What did Maria feel when the elevator door opened? *A blast of cold air*
2. Why did the guide tell the group to be careful in the cave? *It was slippery*
3. What were the dark shapes that flew toward the group? *Bats*
4. Why did Maria’s heart pound as they rode in the elevator? *Fear, excited, nervous*
5. What does it mean when the author wrote “Maria was wearing suitable clothing”?

#### The Great Barrier Reef – Probe 4

1. The Great Barrier Reef is found in which ocean? *Pacific*
2. Give me an example of an animal makes its home on the reef? *Fish or sea snake, sea turtles*
3. How does the Reef help the Ocean? *The reef keeps the ocean clean and healthy.*
4. True or False: Safe means the same thing as protected
5. What other formation or area on Earth is built up from the layering of various organisms. *Soil*

#### Wilma Rudolph – Probe 5

1. How did the disease, polio, affect Wilma? *It caused Wilma’s legs to be weak and she couldn’t walk.*
2. Wilma was the 1<sup>st</sup> American woman to win what? *3 gold Olympic Medals*

3. What was the 1<sup>st</sup> sport Wilma played? *Basketball*
4. True or False – A ‘challenge’ is something that is easily accomplished? *False*
5. Why did Wilma work to bring sports into poor neighborhoods? *Because of her own experiences.*

#### A Train Ride to Gran’s House – Probe 6

1. Mom and the narrator were going to visit whom? *Gran*
2. Where did the narrator sleep? *In the bunk above mom*
3. Tell me something the narrator saw out the window. (*Countryside, ranchers, farmers, kids, mountains, Gran*)
4. In this passage, what does it mean “we stowed away our overnight bags”?
5. What clues tell you that Gran lives in a more rural area? (*countryside, farmers, town*)

#### These Students make a Difference –Probe 7

1. What type of tree did the students plant? *Christmas*
2. Why did the students plant the dead trees on the beach? *To protect or rebuild the sand dunes*
3. How were the original dunes destroyed? *Storms*
4. What is a trench? *A hole or ditch*
5. How did the students show they were problem solvers? *They found a new way to plant trees*

#### Yellowstone – Probe 8

1. Why was the Yellowstone area a good place for Native Americans to live? *The area offered natural resources, food, and water*
2. Who signed the bill to turn Yellowstone into a national park? *President Grant*
3. What state is Yellowstone located? *Wyoming*
4. Does a turtle ‘tower’ over a deer? Explain.
5. Why is it important to identify certain areas as national parks? *To protect the areas*

#### Humpback Whales of Glacier Bay – Probe 9

1. Bubble Netting is a process that humpback whales use to do what? *Catch fish*
2. Why do the whales leave Alaska in September? *There is not enough food*
3. Where do the whales spend the winter? *Hawaii*
4. What is a glacier? *A sheet of ice*
5. What other animal migrates during seasonal changes?

#### A Field Trip to the Museum – Probe 10

1. Where did the class go on their field trip? *State History Museum*
2. What part of history does the narrator like best? *How early settlers lived*



- Who helped the narrator find his/her class? *The museum guard*
- In this passage what does the narrator mean when he/she says “I assure you...”
- What type of cooking pots would you expect to find in the “present-day” room? *Ex: Microwaves, metal/aluminum pans, stove, bbq grill*

#### Mountain Ecosystems – Probe 11

- A land formation that is higher than the surrounding land is called a \_\_\_\_\_.  
*Mountain*
- How do trees help mountains? *Hold the soil in place*
- Humans use mountains for what types of activities? *Hiking, skiing, and fishing*
- True or False: An ecosystem includes the plants and animals that live together in a particular place? *True*
- If there were no mountains on earth, how might the climate and land be effected? *Fewer deserts, less river water.*

#### Big Bend National Park – Probe 12

- Big Bend National Park borders the United States and \_\_\_\_\_. *Mexico*
- Name two animals a visitor might see while at the park. *Bird (falcon), kangaroo rat, deer, jackrabbit, lions, bear, pigs, etc.*
- What do the signs mean “take nothing but...”? *To protect the park*
- In this passage, the word “border” means \_\_\_\_\_?
- Why do rangers tell visitors to stay away from animals such as mountain lions, bears, and wild pigs? *They are dangerous.*

#### Swamps – Probe 13

- Name one important role of swamps. *They are homes for plants, animals and natural resources*
- What is the main difference between and swamp and a marsh? *Swamps have trees, marshes are mostly grass.*
- Saltwater swamps can be found in Asia, Africa, and \_\_\_\_\_. *South America*
- “Although most plants won’t grow in the salty water, mangrove trees thrive”. What is the meaning of the term “thrive”? *Do really well.*
- How are swamps and ponds similar or different?

#### Tae Kwon Do – Probe 14

- Tae Kwon Do began in what country? *Korea*
- What belt color do beginners wear? *White*
- How does a person earn a black belt? *Pass tests, lots of practice, they have to earn other belts.*

4. What does the word “compete” mean?
5. True or False: Very few people participate in Tae Kwon Do. *False*

#### Cat Care – Probe 15

1. Who should you take your cat to see for checkups and shots? *Veterinarian*
2. Why is it important to keep a litter box in the same place? *So it is easy to find*
3. Which type of food, dry or canned, costs more? *Canned*
4. True or False: Many students would say they prefer recess over math class? *True*
5. If your cat is scratching your couch, what should you do? *Get a scratch post.*

#### Angel Falls – Probe 16

1. How did Angel Falls get its name? *From the pilot Jimmie Angel*
2. What are “table mountains”? *Flat topped mountains*
3. Where is the highest waterfall on earth? *Venezuela or South America*
4. What does determination mean in this passage?
5. What can you infer about people who would go visit Angel Falls? *They’re adventurous, brave, etc.*

#### Automobile History – Probe 17

1. All of the Model T’s were what color? *Black*
2. Why were gas-powered cars better than steam powered? *They were safer and easier to use*
3. Who was the man that started making the Model T car? *Ford*
4. What is the meaning of the word “available” in this passage?
5. Why would a car company want more people to be able to buy cars? *So the car company could make money*

#### A Winter Day on the Farm – Probe 18

1. Where did Sam and family move? *To a farm*
2. Why didn’t Sam want to get up? *He sold out/he didn’t want to do his chores*
3. What was one of Sam’s chores? *To milk the cow or get eggs.*
4. What does the word ‘struggled’ mean in this passage?
5. Sam’s mother’s words/actions about sledding and snowmen shows that she understands what about the kids and snow? OR What does it show that she knows about kids and snow? *Kids like to play in the snow.*

#### Hurricanes – Probe 19

1. The calmer center of a hurricane is called the \_\_\_\_\_. *Eye*
2. In the U. S. hurricane season lasts from June thru \_\_\_\_\_. *November*
3. In what area is it the most dangerous to live in during a hurricane? *Coastal*

4. In this passage, what is the meaning of the phrase “moist air”. *The air has water in it.*
5. What is the name of a storm with strong, fast winds that form and spin over land?  
*Tornado*

Special Olympics – Probe 20

1. Who started the Special Olympics? *Eunice Shriver*
2. How are coaches paid? *They aren't, they work for free*
3. What is the Special Olympics program? *Sporting events/competition for people with disabilities*
4. In this passage, what is the meaning of the term “attempt”? *to try*
5. Why might Eunice Shriver have started the Special Olympics?

**APPENDIX F**

**TREATMENT FIDELITY CHECKLIST**

	<i>Yes</i>	<i>No</i>
<b><i>Location:</i></b>		
In an office or conference room		
Equipped with a desk/table and chairs		
Void of outside distractions		
<b><i>Prior to Assessment, did the examiner:</i></b>		
Greet the student?		
Engage in casual conversation?		
Sit across from one another?		
Were the materials already prepared for the session?		
Was the student asked if they were ready to begin?		
Begin session by stating the prompt “today we are going to read a story together. When you read, I want you to give it your best effort and we are going to measure your progress when we’re finished”?		
<b><i>During the session, did the examiner:</i></b>		
Listen as the student read aloud to them		
Document a running record of errors (errors, omissions, substitutions, mispronunciations, repeated words, insertions, self-corrected or words told to the student)		
<b><i>After the session, did the examiner:</i></b>		
Praise the student for their effort?		