EARLY LITERACY INSTRUCTION FOR FIRST-GRADE STUDENTS AT-RISK FOR
EMOTIONAL AND BEHAVIORAL DISORDERS

by

FELICITY MARIE BALLUCH

B.S., Kansas State University, 2005
M.S., Kansas State University, 2008

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF EDUCATION

Department of Special Education
College of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2016

Abstract

This study investigated the effectiveness of an early literacy program for first grade students classified as at-risk for emotional and behavioral disorders, who were nonresponsive to previous schoolwide interventions, and who performed in the bottom one-third of their class on a standardized reading assessment. This study, which consisted of a multiple-probe across intervention groups experimental design aimed to produce literacy and behavior results previously obtained by other well-known researchers. Results indicated growth in oral reading fluency for all five participants, in nonsense word fluency for four out of the five participants, and a decreased display of total disruptive behaviors for all. Findings reaffirm outcomes obtained in previous investigations; specifically, improved early literacy skills are concomitant with ongoing decreases in disruptive classroom behavior. Limitations are discussed and suggestions for future research are provided.

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Dedication

This manuscript is dedicated to my daughter, Serenity. You are the best thing I have ever done.

Chapter 1 - Introduction

This chapter provides an overview of students who exhibit challenging behaviors and describes assessment based interventions for these students. First, an overview of characteristics and obstacles facing students who exhibit challenging behaviors is provided with an emphasis on literacy outcomes. Next, an overview of early literacy will be provided with an emphasis on phonics and fluency measures. Finally, the statement of the problem will be provided followed by the study's rationale, purpose, and research questions.

Students with Behavioral Challenges

While the number of individual students with severe behavior problems continues to increase, the severity and occurrence of the antisocial behaviors exhibited by students wears away school climate and hinders the academic performance of all students (U.S. Department of Health and Human Services, 1999; Walker, Ramsey, & Gresham, 2004). Not surprisingly, antisocial behavior is a central attribute of children identified with emotional and behavioral disorders (EBD), a broad category of behavioral challenges that are inclusive of externalizing as well as internalizing behavior patterns (Kauffman & Brigham, 2009; Moffit, 1993; Stouthamer-Loeber & Loeber, 2002; Walker et al., 2004). Antisocial behavior encompasses a multitude of undesirable behaviors. Students who display antisocial behaviors are renowned for persistent violations of social norms and expectations (Walker et al., 2004). These behaviors are discernible in a variety of ways including verbal and physical aggression, coercion; noncompliance, and various low levels of academic engagement (Anderson, Kutash, & Duchnowski, 2001; Kazdin, 1985; Mattison, Hooper, & Glassberg, 2002). Students with antisocial behaviors often misread impartial social cues as aggressive (Walker et al., 2004). Not

surprisingly, antisocial behaviors create issues with social interactions and lead to disruptions of the classroom environment (Lane, Fletcher, Carter, Dejud, & DeLorenzo, 2007).

Students with EBD are at risk for school failure because they lack needed behavioral competencies, display behaviors that are extreme and do not conform with social norms, and are not well accepted by teachers (Nelson, Martella, & Marchand-Martella, 2002). An abundance of research has revealed that students with EBD are likely to have moderate to severe academic skill deficits (Nelson, Benner, Lane, & Smith., 2004) relative to students who achieve at expected levels (Brier, 1995; Gajar, 1979; Greenbaum, Dedrick, Friedman, Kutash, Brown, Lardierh, et al., 1996; Mattison, Sptitznagel, & Felix, 1998; Meadows, Neel, Scott, & Parker, 1994; Scruggs & Mastropieri, 1986; Wagner, 1995; Wilson, Cone, Bradley, & Reese, 1986) as well as those diagnosed with learning disabilities (e.g., Gajar, 1979; Scruggs & Mastropieri, 1986). Trout, Nordness, Pierce, and Epstein (2003), assessed studies across 40 consecutive years (i.e., 1961-2000) and learned that 91% (i.e., 31 of 35) of the researchers reported that students with ED showed extensive deficits in academic skills (i.e. below grade level or 1 or more years behind their peers). Additionally, national studies suggest youth with EBD have an average GPA of 1.4, miss approximately 18 days per school year, and 58% drop out of school (e.g., Bradley, Doolittle, & Bartolotta, 2008). These students are at a much higher risk for incarceration, the use of illegal substances, finding and keeping jobs, earning lower salaries, and a long-standing reliance on the welfare system and mental health services (e.g., Mayer, Lochman, & Van Acker, 2005). When compared to other disability groups, it has been established that children and adolescents with EBD have lower graduation rates and are less likely to attend postsecondary school (Bullis & Cheney, 1999; Kauffman, 2001).

Students with EBD generally display academic difficulties across multiple content areas (Nelson, Benner, Lane, et al., 2004; Reid, Gonzalez, Nordness, Trout, & Epstein, 2004), with reading posing a substantial challenge (Trout et al., 2003; Gunter & Denny, 1998). Both reading and social deficits have a tendency to broaden over time, becoming less amendable to intervention efforts (Nelson, Lane, Benner, Kim, 2011). This duality in deficits (Kauffman, 2005), along with students' lack of motivation, classroom disruptions, and aggressive behavior can make it rather arduous for practitioners to deliver effective instruction and any attempts at such may seem futile (Wehby, Symons, Canale, & Go, 1998). Not surprisingly, as students with EBD progress through school, they rarely achieve academically at a rate equal to that of their peers, including those with learning disabilities (Anderson et al., 2001). Students' academic problems often require intensive remediation efforts to improve basic skills, which is especially the case in reading (Lane, 2004). Students with EBD also tend to demonstrate low levels of task engagement and work completion (Nelson, Benner, Lane, et al., 2004), extended oral response rates, and distractibility in comparison with other students with disabilities (Wagner & Davis, 2006).

In considering what is at stake, research aimed at improving practices for meeting the needs of students with or at risk of EBD continues to accumulate. As a result, numerous scientifically supported practices which improve the performance of students with EBD have been identified (e.g., Lewis, Hudson, Richter, & Johnson, 2004), Even so, outcomes for this particular student population in regards to both behavior and academics remains less than idyllic (Cullinan, Evans, Epstein, & Ryser, 2003; Nelson, Babyak, Gonzalez, & Benner, 2003). In an investigation of federally funded studies in the United States meant to improve outcomes for children and adolescents with EBD, Bradley, Henderson, and Monfore (2004) determined that

educational, behavioral, and social outcomes for students with EBD were the worst of any single disability group, despite a specifically targeted focus (p. 211).

Many investigations emphasize the need for sustained work with this population in order to establish the most appropriate practices for achieving better outcomes in both behavior and academics (Lane, Carter, Pierson, & Glaeser, 2006; Nelson, Benner, Lane, et al., 2004). Considering that misbehavior wastes instructional time, is disruptive to all students, creates safety problems, and decreases the chance that students who misbehave will achieve educational success (Walker, Ramsey, & Gresham, 2003), effective methods must be obtained. Moreover, a plethora of negative consequences surround students with EBD (e.g., school failure, impaired social relations, and propensity towards criminality). Therefore, it is crucial that evidence-based interventions be employed to meet their various needs (Lane, 2007) although numerous questions surround how best to do so for those struggling in both academics and in the social realm (Nelson et al., 2011).

Regarding academic achievement, Anderson et al. (2001) reported that students with EBD did not grow in academic skills over a 5-year follow-up from the beginning to the end of elementary school. This was true even when compared to students diagnosed with learning disabilities and even though the students with EBD outperformed students with LD in kindergarten and first grade. In another study, Mattison et al. (2002) compared students with EBD to students with both EBD and LD and found no notable progress in either group after receiving special education services for three years. Lane, Wehby, Little, and Cooley (2005) tracked a sample of 60 students with EBD in both self-contained classrooms and a self-contained school. Results indicated that "over the course of ten academic years, students with EBD made

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very little progress and, in some areas, fell further behind in the academic, social, and behavioral domains…(with) little disparity in performance between the settings" (Lane et al., 2005, p.371)

Profiles of students with EBD imply a great deal of inconsistency in their academic and behavioral functioning (Carr-George, Vannest, Willson, & Davis, 2009; Lane et al., 2005; Mattison, 2008; Montague, Enders, Dietz, Dixon, & Cavendish, 2008; Rosenblatt & Rosenblatt, 1999; Sabornie, Cullinan, Osborne, & Brock, 2005; Trout, Epstein, Nelson, Reid, & Ohlund, 2006; Trout, Epstein, Nelson, Synhorst, & Hurley, 2006; Wiley, Siperstein, Bountress, Forness, & Brigham, 2010). Results indicate differences across the board. Some groups of children display either severe academic deficits or academic achievement well within the average range, while different types of social and behavioral problems that range from clinically significant to relatively mild are also observed. The considerable variability of this population may thus be a major factor in the inconsistencies previously described regarding academic and behavioral progress (Siperstein, Wiley, & Forness, 2011).

Recently, a structural equation model was used to test the hypothesized interrelationships among language skills, externalizing behavior, academic fluency and their impact on the academic skills of students with EBD using Mplus, a statistical modeling program (Muthen & Muthen, 2004). This program allowed for the concurrent analysis of the interrelated dependent relationships among these variables. It was discovered that students with EBD would potentially benefit from interventions aimed at fostering their language ability in addition to interventions focused on developing their academic fluency in academic skill areas (Nelson, Benner, Neill, & Stage, 2006).

Students with EBD are not solely a concern of teachers in special education (Lane, Oakes, & Menzies, 2010). In actuality, less than 1% of students proceed to qualify for special education services under the category of EBD as defined in the Individuals with Disabilities Education Improvement Act (IDEA, 2004). Instead, nearly all students with EBD will spend their educational careers in the general education setting. In turn, this means that general education teachers will assume the responsibility of meeting the needs of this population of students in terms of academics, behaviors, and social interactions (Lane, Oakes, Ennis, et al., 2011).

Literacy Supports and Models

According to the United States Department of Education (1999a), reading is an instrumental piece of education that allows one the access to all other learning. Regrettably, many students must exhibit great effort to acquire the necessary skills (e.g., phonemic awareness and decoding skills) to develop into strong readers (Nelson et al., 2011). In fact, children who struggle with learning to read embody one of the most noteworthy challenges facing general and special educator teachers today (Nelson, Benner, Gonzalez., 2003). Disparities in early literacy skills are problematic considering that these deficits tend to broaden over time and progressively become more impervious to intervention efforts (Adams, Treiman, & Pressley, 2000; Kazdin, 1993; Nelson, Benner, Lane, et al., 2004; O'Shaughnessy, Lane, Gresham, & Beebe-Frankenberger, 2003). For instance, shortfalls in decoding expand to include deficits in fluency and, consequently, comprehension skills (Nelson et al., 2011). Therefore, the disproportion between strong and weak readers has a tendency to become more prominent over time. Frequently identified as the "Matthew Effect", largely good readers become better and struggling readers become weaker (Adams, 1990; Stanovich, 1986).

For those that experience reading struggles at a young age, the outlook is especially morose. One study revealed that students identified as poor readers in the first grade had yet to develop adequate reading skills by ninth grade (Francis, Shaywitz, Studebing, Shaywitz, & Fletcher, 1996). Likewise, in a longitudinal study investigating the literacy advancement of a sample of elementary-aged students, Juel (1988) revealed that the probability that poor readers in the first grade would remain poor readers in the fourth grade was .88. Low performance in reading puts children at risk for dismal outcomes, including school failure, behavior problems, and peer and teacher rejection. Additionally, a high correlation between low reading achievement and school dropout, unemployment, and crime has been established (National Institute for Literacy, 1998).

In 1997, Congress asked the Director of the National Institute of Child Health and Human Development along with the Secretary of Education to assemble a national panel which would be responsible for assessing the status of research-based knowledge evidencing various approaches used to teach children to read (National Reading Panel, 2000). Thus, the National Reading Panel (NRP) was formed and was composed of 14 individuals including leading scientists in reading research, college of education representatives, reading teachers, administrators, and parents. The NRP (2000) proceeded to collect findings of over 115,000 reading intervention research studies and found five core components that are necessary for, and have the biggest impact on, successful reading outcomes. Core components include phonemic awareness, phonics or the alphabetic principle, fluency or accuracy and fluency with connected text, vocabulary and language development, as well as reading comprehension.

Shortly after the NRP's reports were made public, federal law showed a national commitment to early literacy as demonstrated by the No Child Left Behind Act of 2001, and the

Reading First Initiative.   Both were a product resulting from no less than the following considerations:

1. Amongst fourth-grade students in the United States, 37% do not read adequately enough to fulfill grade-level assignments (National Center for Education Statistics, 2004);

2. The course of a student's reading is established early in grades K-3 (National Center to Improve the Tools of Educators, 1996) and is grueling to change once founded (Good, Simmons, & Kame'enui, 2001); and

3. An extensive and influential body of scientifically based reading research (Adams, 1990; National Reading Panel, 2000; National Research Council, 1998) is accessible to apprise educators on how to advance reading instruction in multiple school settings (Simmons, Kame'enui, Good, Harn, Cole, & Braun, 2002).

As mentioned, a collection of research designed to guide early intervention in a timely, systematic, rigorous, and differential manner exists (Simmons, Kame'enui, Stoolmiller, Coyne, & Harn, 2003; Torgesen, 2000, 2002) in order to assist with decreasing both incidence and prevalence rates of students who face reading difficulties.

A national concentration on the prevention of reading difficulties in the early grades is centered on the principle that reading in an alphabetic writing system, although multifaceted in regards to both language and mental capacity, is learned and can consequently be taught in both a straightforward and systematic manner (Kame'enui, 1998; Liberman & Liberman, 1990; National Reading Panel, 2000; National Research Council, 1998; Shaywitz, 2003; Wolf & Katzir-Cohen, 2001). Specifically, No Child Left Behind (NCLB; 2001) embodies an assurance by the federal government to make certain that every child can read by the end of third grade and

to ensure the use of scientifically based reading instruction programs in the early grades. Unfortunately, only 31% of U.S. eighth graders were at or above "proficient" and 26% fell below "basic" levels in reading on the 2007 National Assessment of Educational Progress report (Lee, Grigg, & Donahue, 2007). It comes as no surprise then that, despite well-intentioned initiatives and efforts on behalf of educators, reading achievement remains a necessary priority to schools across the nation (Benner, Nelson, Stage, & Ralston, 2011).

In order for children to learn how to read, multiple skills must be established (NRP, 2000). Systematic phonics instruction centers around helping children obtain knowledge of the alphabetic system and its necessity for decoding new words and to identify familiar words correctly and automatically. Knowing how letters correspond to phonemes and larger subunits of words is critical for aiding beginning readers to sound out word segments and blend these parts to form identifiable words. Alphabetic knowledge is required to decipher new words and to assist beginning readers in remembering words they have previously read. Having knowledge of letter-sound relations also enables children to be more precise in predicting words for context. All in all, having solid knowledge of the alphabetic system largely influences a child's ability to read words in isolation or associated text (NRP, 2000).

Phonics programs differ largely in precisely what is taught and how it is presented (Adams, 1990; Aukerman, 1981). Approaches may differ in sequence of letter-sound relations, size of units taught, whether or not the sounds that are associated with letters are pronounced in isolation or in the context of words, the amount of phonemic awareness that is taught, and whether or not it is embedded in or separate from the literacy curriculum to name just a few (NRP, 2000). Systematic phonics programs are such "that children receive explicit, systematic instruction in a set of prespecified associations between letters and sounds, and they are taught

how to use them to read, typically in texts containing controlled vocabulary" (NRP, 2000, p. 2-103)

In 1967, Jeanne Chall conducted a comprehensive review of beginning reading instruction entitled <u>Learning to Read: The Great Debate.</u> Chall's conclusion was that early and systematic instruction in phonics appeared to lead to better achievement in reading than later and less systematic phonics instruction. Since then, Chall's (1967) finding has been confirmed in a vast amount of research reviews conducted (e.g., Ehri, Nunes, Stahl, & Willows, 2001; Adams, 1990; Anderson, Hiebert, Wilkinson, & Scott, 1985; Balmuth, 1982). According to Chall (1996a, b) beginning readers must acquire foundational knowledge before formal reading instruction. Such foundational knowledge includes concepts about print, phonological awareness, and letter names. The NRP (2000) reached the conclusion that, based on 38 studies, phonics instruction taught in kindergarten ($\underline{d}$=0.56) or first grade ($\underline{d}$=0.54) is the most significant for teaching students to read. It is expected then, by first grade that students have the needed foundational knowledge and are prepared to apply it during reading and writing instruction (NRP, 2000).

Throughout the course of students becoming successful readers, fluency instruction as well as phonics plays a vital role in reading development (Chard, Ketterlin-Geller, Baker, Doabler, & Apichatabutra, 2009; Fuchs, Fuchs, Hosp, & Jenkins, 2001; NRP, 2001; National Institute of Child Health and Human Development [NICHD], 2000; Nichols, Rupley, & Rasinski, 2009; Reutzel & Smith, 2004; Samuels, 2006; Schwanenflugel et al., 2006; Vadasy & Sanders, 2008). Multiple approaches exist as a way to develop reading fluency with the first focusing on repeated oral reading practice or guided repeated oral reading practice. Practices include repeated reading (Samuels, 1979), neurological impress (Heckelman, 1969), radio reading (Greene, 1979),

paired reading (Topping, 1987), and a large amount of similar other approaches (NRP, 2001).

The second approach is inclusive of all attempts to expand independent or recreational reading including silent reading programs (Hunt, 1970), Accelerated Reader (Advantage Learning Systems, 1986), and numerous other incentive type programs (i.e., Shanahan, Wojciehowski, & Rubik, 1998).

Chances to improve reading fluency are critical for all readers, but teachers of struggling readers especially must comprehend the magnitude of integrating explicit fluency-based instruction into their reading programs (Allington, 1977; Cunningham, 2005; Hasbrouck & Tindal, 1992; Hudson, Lane, & Pullen., 2005; Larson, 2002; National Reading Panel, 2000; Snow, Burns, & Griffin, 1998). Children who do not progress in regards to fluency, regardless of intelligence, will fight an ongoing battle of slow reading despite inordinate amounts of effort. If a student struggles with word recognition, all mental resources may be tied up with decoding, which, in turn, leaves little to nothing for use in comprehension (NRP, 2001). Considering that a fluent reader is one who can recognize words and comprehend at the same time (NRP, 2001), such a cycle will inevitably lead to reading struggles.

Research has supported the significance of fluency in the development of reading expertise. An assortment of effective methods for assessment and instruction of reading fluency have been established (Allington, 1977, 1983, 2001; Chard et al., 2009; Cunningham, 2005; Dudley, 2005; Dudley & Mather, 2005; Hasbrouck & Tindal, 1992; Hudson et al., 2005; Rasinski, 2000, 2003, 2004;). Informal methods that can provide acceptable levels of fluency measurement include informal reading inventories (Johnson, Kress, & Pikulski, 1987), miscue analysis (Goodman & Burke, 1972), pausing indices (Pinnell, Pikulski, Wixson, Campbell,

Gough, & Beatty, 1995), running records (Clay, 1972), and reading speed calculations (Hasboruck & Tindal, 1992)

Traditionally, a great deal of instructional attention devoted to the development of fluency included round-robin reading (Optiz & Rasinski, 1998). Unfortunately, this procedure has been labeled as uninteresting, an interference with fluency, boring, angst inducing, and inefficient (NRP, 2000). Additionally, this procedure has been shown to have little to no relationship to gains in reading (Stallings, 1980). More recent approaches involve guided repeated oral reading techniques that share a number of essential characteristics (NRP, 2000). First and foremost, new procedures ask students to read and reread the same text multiple times. Second, oral reading practice time is increased through one-to-one instruction, tutors, audiotapes, peer guidance, or other means. Last, some contain specifically designed feedback procedures in order to influence the reader's performance.

Nine of the 14 studies reviewed by the National Reading Panel (2000) focused on the impact of repeated reading (Faulkner & Levy, 1999; Levy, Nicholls, & Kohen, 1993; Neill, 1979; O'Shea, Sindelar, & O'Shea, 1985; Rasinski, 1990; Sindlar, Monda, & O'Shea, 1990; Stoddard, Valcante, Sindlar, O'Shea, & Algozzine, 1993; Turpie & Parratore, 1995; Van Wagenen, Williams, & McLaughlin, 1994). Such studies offer a convincing case that repeated reading, and other procedures that have students reading passages orally multiple times, in conjunction with guidance from peers, parents, or teachers are successful in enhancing numerous reading skills (NRP, 2000).

Reading interventions for those at risk for and with reading disabilities currently exists (e.g., Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998; Torgesen, Alexander, Wagner, Rashotte, Voeller, & Conway, 2001). Regrettably, a limited focus has been granted to

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investigating the outcomes of such reading instruction for elementary-age students with reading

deficits and EBD (Coleman & Vaughn, 2000; Levy & Chard, 2001).

Rationale

It has been estimated that the majority of children with EBD evidence reading failure

(Brier, 1995; Kauffman, 2001; Kauffman, Cullinan, & Epstein, 1987; Epstein, Kinder, &

Bursuck, 1989; Scruggs& Mastropieri, 1986). Furthermore, the prevalence rates of reading

problems tend to increase over time for this population of students (Nelson, Benner, et al., 2003).

Although less than 1% of school-age students receive special education services for EBD as

defined in the Individuals with Disabilities Education Improvement Act (IDEA; 2004),

considerably more children and youth with EBD exist who are unidentified and do not receive

needed special services during their educational years. Frequency estimates suggest between

3%-20% of students have EBD, with more moderate approximations suggesting 6% (Kauffman

& Landrum, 2006). Hence, the breadth of the problem of unidentified students with EBD is

considerable and will affect both the special and general education populations in a similar

manner. Considering the majority of these students will not receive special education services, it

is critical for the field of education to produce teachers with the knowledge, skills, and

confidence to teach in various environments utilizing evidence-based practices in an effort to

better support students with EBD and those at-risk for EBD (Lane et al., 2010).

While multiple educational concerns currently exist, reading instruction is recognized as

a chief educational issue for students with or at-risk for EBD (Barton-Arwood, Wehby, & Falk,

2005). Researchers have been criticized for awarding minimal attention to reading instruction

for students with EBD (Barton-Arwood et al., 2005). From 1975 to 2003, for instance, merely

27 published studies are recorded that focused on reading instruction for students with EBD,

with just 13 of these committed to improving basic reading skills such as phonemic segmentation or fluency building (Mooney, Epstein, Reid, & Nelson, 2003; Trout et al., 2003). Additionally, a sparse number of published articles that specifically address academic interventions for students with EBD currently exists as evidenced by previous reviews of the literature (Lane, 2004; Mooney et al., 2003; Pierce, Reid, & Epstein, 2004; Sutherland & Wehby, 2001).

Because reading is a foundational skill (Torgesen, Wagner, Rashotte, Rose, Lindamood, Conway, et al., 1999) which allows for access to continued learning, it is of the utmost importance that educators and researchers continue to investigate effective and practical methods for meeting the academic needs of students with or at-risk for EBD in addition to meeting their social needs (Barton-Arwood et al., 2005; Falk & Wehby, 2001; Foorman, Francis, Shaywitz, Shaywitz, & Fletcher, 1997; O'Shaughnessy, Lane, Gresham, & Beebe-Frankenberger, 2002) and for remediating existing academic achievement deficits (Lane & Menzies, 2002a; Walker & Severson, 2002). Students who display poor reading ability by the end of first grade are prone to remain unsatisfactory in their reading skills for the remainder of their school careers (Juel, 1988; Snow, 1991). Thus, early detection is a monumental step in identification of students with or at risk for EBD in order for target intervention supports to be provided (Lane & Wehby, 2002; Severson & Walker, 2002).

Due to a strong relationship between reading failure and general school failure, researchers suggest that reading instruction should be the primary focus of research endeavors regarding interventions for students with or at risk for EBD (Scott & Shearer-Lingo, 2002). A focus on academic achievement is important for several reasons. First, students with EBD tend to earn lower grades and fail more courses in comparison to groups of students with other disabilities (U.S. Department of Education, 1994a). Second, students with poor academic skills

and EBD are at a higher risk for restrictive class placement, dropping out of school, lower rates of employment after leaving school, and general adjustment problems during adulthood (Wagner, 1995). Some research also suggests that interventions which focus on the remediation of academic skill may produce a collateral effect, which, in turn, reduces problem behavior (Coie & Krehbiel, 1984; DuPaul, Ervin, Hook, & McGoey, 1998). If such an effect exists, academic interventions may be useful in enhancing interventions largely used to address social behavioral deficits (Barton-Arwood et al., 2005; Lane, 1999).

Often, behavioral problems and learning difficulties are evident during the preschool and primary grades (K-3). According to many researchers (e.g., Bullis & Walker, 1994; Kazdin, 1987; Lyon, 1996; Walker, Colvin, & Ramsey, 1995) this is the ideal time to implement interventions considering children's struggles are not quite embedded to the point that secondary problems have begun to arise. Thus, such awareness strongly encourages early detection and intervention efforts (Lane, O'Shaughnessy, Lambros, Gresham, & Beebe-Frankenberger, 2001).

Several studies have demonstrated that students with EBD and individuals with reading deficits are, in fact, capable of increasing their reading abilities-predominantly those related to improvements in comprehension, vocabulary, oral reading fluency, and accuracy of reading using systematic, phonics-based instructional programs (Babyak, Koorland, & Mathes, 2000; Coleman & Vaughn, 2000; Harris, Marchand-Martella, & Martella, 2000; Lingo, Slaton, & Jolivette, 2006; Malmgren & Leone, 2000; Marchand-Martella, Martella, Orlob, & Ebey, 2000; Polloway, Epstein, Polloway, Patton, & Ball, 1986; Rivera, Al-Ataiba, & Koorland, 2006; Scott & Shearer-Lingo, 2002; Shippen, Houchins, Steventon & Sartor, 2005; Wehby, Falk, Barton-Arwood, Lane, & Cooley, 2003). Researchers, as well, have found a positive correlation between reading disability and antisocial behavior (Miller & Windhauser, 1971; Sturge, 1982).

The National Reading Panel (2000) reached an undeniable conclusion that systematic phonics instruction should play a key role in attempts to teach children to read. In 38 phonics intervention studies reviewed by the National Reading Panel, the mean effect size associated with direct phonics instruction was .44, demonstrating "solid support for the conclusion that systematic phonics instruction makes a bigger contribution to children's growth in reading than alternative programs providing unsystematic or no phonics instruction" (p. 92)

In addition to support provided for the use of systematic phonics instruction, there currently exists strong empirical support for the use of measures of pseudo-word reading to assess the alphabetic principle. For example, out of the 38 studies included in the NRP meta-analysis on phonics interventions, 18 studies involved a measure of pseudo-word reading to establish the impact of the intervention. Multiple studies have reported substantial correlations regarding the ability of students to read pseudo-words and the ability to read real words. (e.g. Vellutino, Scanlon, & Tanzman, 1994).

On top of a need for specific interventions which target both academic and social needs of students with or at risk for EBD, there is a concern regarding a lack of replication and the presence of bias in research (Cook, 2014). Whereas scholars in the psychological and medical fields have begun to scientifically examine replication and bias in their research foundations, special education researchers have yet to methodically examine these concerns (Cook, 2014). Certainty in informational assertions produced by research are defensible to the degree that results are replicated (Cook, 2014).   To be brief, replication is indispensable to scientific knowledge (Francis, 2012; Jasny, Chin, Chong, & Vignieri, 2011; Lehrer, 2010). While the likelihood that positive findings are accurate increases to 78% when replicated once, 93% when replicated twice, and 98% when replicated three times, recent experimental and academic efforts

indicate that researchers rarely attempt to replicate findings and often neglect to duplicate earlier findings when they do attempt (Nosek, Spies, & Motyl, 2012; Pashler & Harris, 2012).

Disturbingly, many studies also neglect to address indicators of methodological quality, which implies that at least some special education research is susceptible to bias (Cook, 2014). Erroneous research maintains an unforgiving cycle. First, it generates the demand for a remarkable quantity of unbiased research to rectify incorrect findings. Moreover, it wears down public belief in science, which, in turn, may decrease funding for research and the possibility that various stakeholders will believe and employ research findings. Thus, it is imperative to contemplate methods for increasing replication and minimizing bias in special education research (Cook, 2014).

Purpose

This study examined the effectiveness of an early literacy program for first-grade students who were identified as at-risk by their classroom teachers in the areas of reading and behaviors. This study further developed existing research by attempting to systematically produce results (Kennedy, 2005) of a previously conducted study.

Numerous adjustments were made to the original study conducted by Lane et al. (2002). One student in the present study was identified as a student with a disability and received special education services to solely support behavior interventions. No students in the original study received special education services of any kind. Participants in the current study had been exposed to schoolwide behavior and literacy interventions for approximately six months rather than three as in the original study. This difference was a result of the sequence with which the researcher had to navigate in order to carry out the study. Students were randomly assigned to three intervention groups instead of two. This change was made due to scheduling conflicts

within the general education classrooms and allowed for more consistency of intervention delivery in regards to time. A major change that must be noted is the frequency with which the intervention was delivered. While the original study delivered the intervention three times a week in addition to reading instruction, this particular study consisted of the intervention being delivered daily in place of guided reading instruction. Probes and behavior observations were conducted every three school days in an effort to complete 15 hours of intervention time before the conclusion of the school year. Due to time restraints, 28 lessons were delivered, rather than 30 as in the original study. Weekly meetings were conducted for a total of 30-45 minutes rather than 60 minutes in an effort to keep study expectations and responsibilities of each classroom teacher within the school day. Numerous standardized measures originally used to obtain an overall snapshot of students' academic and socio-behavioral performance were eliminated at the onset of this study due to time constraints. Baseline scores for oral reading fluency and nonsense word fluency were acquired from students' Dynamic Indicators of Basic Early Literacy Skills (DIBELS) (Kaminski & Good, 2011) scores rather than using the Test of Phonological Awareness (TOPA; Torgensen & Bryant, 1994). Only the Student Risk Screening Scale (SRSS; Drummond, 1994) was administered in an effort to identify students who qualified as potential participants. The Social Skills Rating System-Teacher (SSRS-T; Gresham & Elliott, 1990), the Critical Events Index (CEI) component of the Systematic Screening for Behavioral Disorders (SSBD; Walker & Severson, 1992), as well as the School Archival Record Search (SARS; Walker, Block-Pedago, Todis, & Severson, 1991) were not administered. Total disruptive behaviors within the classroom were the only dependent measure used to measure the behavioral impact of the literacy intervention. Negative social interactions on the playground were eradicated from the current study due to time constraints and work obligations of the researcher.

Social validity was only assessed from the teacher perspective using The Intervention Rating Profile (IRP-15; Martens, Witt, Elliot, & Darveaux, 1985) as modified versions of the Children's Intervention Rating Profile (CIRP; Lane, 1997, 1999; Lane et al., 2001; Witt & Elliott, 1983) were unavailable to the researcher.

This study will also expand upon an existing meta-analysis (Benner, Nelson, Ralston, & Mooney, 2010), which explored the effects of reading instruction on the reading skills of students with or at risk for EBD in an effort to obtain the most recent literature regarding studies conducted to identify the relationship between reading and behaviors exhibited by students in the school setting. The following research questions will guide this study:

1. What effect does an early literacy program have on academic outcomes of first grade students identified by classroom teachers as being at risk in both reading and behaviors and who were nonresponsive to previous school-wide interventions?

2. What effect does an early literacy program have on behavioral outcomes of first grade students identified by classroom teachers as being at risk in both reading and behaviors and who were nonresponsive to previous school-wide interventions?

Chapter 2 - Review of Literature

This chapter reviews the existing literature regarding literacy instruction for students who are considered at risk for reading failure and for those identified or at risk of being identified as a student with EBD. First, a definition of key terms concerning literacy as well as behavior disorders is provided. The importance of early literacy instruction is explored. In addition, the relationship between literacy instruction and students with or at risk of EBD is investigated. Finally, a systematic review of the literature involving literacy and students with or at risk of EBD is provided with an emphasis on single case study designs.

Definition of Key Terms

Literacy

At-Risk. For the purpose of this study, students were considered at risk if he or she was performing in the bottom one third of his or her class in regards to early literacy skills as measured by their performance on the DIBELS (Kaminski & Good, 2011).

Emergent Literacy. For the purpose of this study, emergent or early literacy skills were "the skills, knowledge, and attitudes that are developmental precursors" (e.g., phonological awareness, letter knowledge, and concept of print) (Whitehurst & Lonigan, 1998, p. 848) to traditional forms of reading and writing (e.g., word decoding skills, oral reading fluency, and spelling.) (Kim, Petscher, Schatschneider, & Foorman, 2010).

Literacy. For the purpose of this study, literacy referred to the ability to read and write and is progressively required starting at birth and remaining for life given that the necessary opportunities, motivation, and instruction needed to practice exist (Snow, 2004).

Nonsense Word Fluency. According to DIBELS (2011), "Nonsense Word Fluency is a brief, direct measure of the alphabetic principle and basic phonics" (p. 96). Further, "it assesses knowledge of basic letter-sound correspondences and the ability to blend letter sounds into consonant-vowel-consonant and vowel-consonant words" (p. 96).

Oral Reading Fluency. For the purposes of this study, oral reading fluency was defined as the number of words read correctly per minute (Shinn, 1989).

Systematic Phonics Instruction. "Phonics instruction teaches students the relationships between the letters (graphemes) of written language and the individual sounds (phonemes) of spoken language" (Center for the Improvement of Early Reading Achievement, 2001, p. 12). Systematic phonics programs expose students to books or stories that contain words which are decodable based upon the letter-sound relationships students have learned or are learning through instruction. For the purpose of this study, John Shefelbine's Phonics Chapter Books 1-6 (1998) will be used to provide this systematic phonics instruction. Shefelbine's Phonics Chapter Books 1-6(1998) were also used in the original study by Lane et al. (2002).

Behavior

Anti-Social Behavior. Anti-social behavior encompasses numerous undesirable behaviors, those of which continuously defy social norms. They include verbal and physical aggression, noncompliant behavior, and intimidation (Kazdin, 1985). More specifically and for the purpose of this study, anti-social behaviors included those defined by the Student Risk Screening Scale (Drummond, 1994). These behaviors include: stealing, lying, cheating or sneaking, behavior problems, peer rejection, low achievement, negative attitude, and aggressive

behavior rated according to a four point Likert type scale (never=0; occasionally=1; sometimes=2; and frequently=3).

At-Risk. Students were considered at risk behaviorally according to scores obtained on the Student Risk Screening Scale (SRSS; Drummond, 1994; See Appendix A) completed by classroom teachers. SRSS total scores range from 0 to 21 and are then assigned to one of three risk categories: low risk (total scores: 0 to 3), moderate risk (total scores: 4 to 8) and high risk (total scores: 9 or more). Students rated with scores between 9 and 21 were considered to have met the criteria for being at risk for EBD.

Behavioral Disorders. According to the Individuals with Disabilities Education Act (2004), students with EBD are classified under the disability category of emotional disturbance. As a result, for the purpose of this study, the definition of emotional disturbance was used. According to the Individuals with Disabilities Education Act (2004), an

> emotional disturbance means 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.

Total Disruptive Behavior (TDB). As defined in the original study by Lane, Wehby, et al. (2002), total disruptive behaviors involved behaviors that disrupted the classroom environment and adversely impacted instructional activities. Behaviors included: being out of seat without permission, touching another person's property, hitting or slapping others, making noises other than those related to instruction, and noncompliance with teacher instructions.

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Literacy Instruction

In an effort to discover best practices for literacy instruction, research has been both fervent and fluid. With so many facets of literacy instruction, no one intervention is a "fix all" for optimizing reading achievement. At the same time, researchers have established an expansive knowledge base that details the skills children must learn in order to become proficient readers (Center for the Improvement of Early Reading Achievement, 2001). In 1997, Congress asked the Director of the National Institute of Child Health and Human Development (NICHD), as well as the Secretary of Education, to organize a national panel, known as the National Reading Panel (NRP), to evaluate the status of research-based knowledge, including the efficacy of various approaches to teaching children to read. The panel was asked to present a report detailing their conclusions and their applications to the classroom in addition to the formulation of a strategy to distribute the information. Distribution was directed to be swift so that teachers could begin effective reading instruction without delay. The National Reading Panel responded to the mandate and issued a report in 2000. By reviewing more than 100,000 studies, the panel identified key skills and methods central to reading achievement. These skills and methods can be used in order to create a comprehensive curriculum designed to optimize a child's reading experience. In addition, instructional approaches can be developed with these skills as their foundation in order to prevent early reading failure.

By uncovering skills and methods for practitioners, a foundation has been built for instructional practice in reading based upon scientific evidence. Teachers could utilize methods and approaches proven to work well in order to provoke reading growth in students. Phonemic awareness, phonics, accurate and fluent reading of connected text, reading comprehension, as well as vocabulary and language skills have been identified as the basic building blocks that every child must master in order to become a proficient reader (National Reading Panel, 2000;

Adams, 1990; National Research Council, 1998). These components are part of the Reading

First Initiative of No Child Left Behind (PL-107-110) considering they have been identified as

essential for successful reading outcomes, with systematic and explicit phonics instruction being

vital (Good et al., 2009). Systematic phonics instruction alone does not help students acquire all

the necessary reading components. Instead, it must be combined with the other essential

instructional components in order to create a thorough and balanced literacy program (Ehri et al.,

2001). Through regular assessment on these basic early literacy skills, educators can help to

identify children who are on target for becoming successful readers from those who are more

likely to struggle. Evidence uncovered indicates that these core components can be improved

with instruction (Kame'enui, Carnine, Dixon, Simmons, & Cioyne, 2002; Simmons &

Kame'enui, 1998; Torgesen, et al., 1999).

For many students, the essential components of reading are learned without difficulty.

However, for some, direct instruction with adequate time for practice and specific feedback is

essential for mastering these skills (Allington, 2006; Hudson et al., 2005; NRP, 2000). This is

especially true for poor readers with behavioral issues given that (a) students with behavioral

challenges are less likely to be engaged in reading tasks in the classroom (Dally, 2006; Morgan,

Farkas, Tufis, & Sperling, 2008; Vaughn, Levy, Coleman, & Bos, 2002), and (b) poor task

engagement has been found to be predictive of later comorbid behavioral and reading difficulties

(Allington, 2006).

In a meta-analysis containing 38 studies found after 1970, the National Reading Panel

(2000) found that systematic phonics instruction produced the greatest impact on students in

kindergarten and first grade. Furthermore, while phonics instruction is not an entire reading

program, it is most effective when introduced early, can significantly improve children's reading

comprehension, and is particularly beneficial for children who are having difficulty learning to read and who are at risk for developing future reading problems. Effect sizes uncovered were d=0.58 for kindergarten students at risk of reading failure and d=0.74 for first graders considered at risk. In addition, phonics instruction significantly improved the reading performance of disabled readers (i.e., children with average IQs but poor reading) as that effect size was d=0.32. Effect sizes for students in second through sixth grades was d=0.15. Considering these effect sizes, one can conclude that systematic phonics instruction is significantly more effective than non-phonics instruction in helping to prevent reading difficulties among at risk students and in helping to remediate reading difficulties in disabled readers.

The National Reading Panel (2000) also reached the conclusion that oral reading did, in fact, have a consistent and positive impact on word recognition, fluency, and comprehension. Amongst the studies examined, the Panel uncovered a number of studies that supported the idea that repeated reading and other procedures in which students read passages orally multiple times while receiving guidance or feedback are effective in improving a variety of reading skills. These specific procedures also improved students' reading ability through grade five and those with learning problems much later. Overall, it was concluded that fluency is an essential part of reading and that both guided oral reading procedures and repeated reading are suitable and respected paths for increasing fluency and overall reading achievement (NRP, 2000).

Theoretical Foundations of Reading

Along with understanding the necessary building blocks for successful reading, it is imperative that educators understand the timeframe delineated for the acquisition of various reading skills. One should also stop to consider that each building block goes hand in hand with the others and is simply an element of an effective overall literacy program. For nearly all

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students, early success in literacy is dependent upon rich, dynamic, well-taught classroom programs in preschool, kindergarten, first, and second grade (Fountas & Pinnell, 1996). In order to gain a more concrete understanding, numerous theories of reading development have been proposed, with the first theoretical construct of reading appearing in the 1930s during the establishment of the scientific study of education (Indrisano & Chall, 1995). One formative to this study is Chall's Theory.

Originally developed in 1979, Chall's model of reading development was refined in both 1983 and 1986 (Indrisano & Chall, 1995). Chall's model (1983) presents reading as a complex of both abilities and skills that transform as a child advances through each stage (See Table 2.1). As a result, Chall's model allows reading to be regarded as fundamentally different for readers at all ages and grade levels. In addition, the responsibilities of the school vary with each stage, as well as the capabilities and skills needed by each individual reader in order to master each task. According to Chall, students can expect to encounter more complex words, sentences, syntax, and ideas as they progress through the stages. With each successive stage, students are exposed to more abstract concepts and less common events and experiences. In regards to language, readers in Stages 1 and 2 will face well-known words, short and less sophisticated sentences. Readers in Stages 3, 4, and 5 will be met with more abstract and subtle ideas as well as vocabulary and syntax with which they are less acquainted. In order to advance from one stage to the next, readers are expected to progress in a manner which allows them to meet the cumulative demands of each stage.

Table 2.1
Chall's Stages of Reading Development

Stage	Approximate Age/Grade	Characteristics and Masteries by End of Stage
Stage 0: Pre-reading "pseudo reading"	6 months- 6 years Preschool	Child "pretends" to read, retells story when looking at pages of book previously read to him/her, names letters of alphabet; recognizes some signs; prints own name; plays with books, pencils and paper.
Stage 1: Initial reading and decoding	6-7 years old 1st grade and beginning 2nd	Child learns relation between letters and sounds and between printed and spoken words; child is able to read simple text containing high frequency words and phonically regular words; uses skill and insight to "sound out" new one syllable words.
Stage 2: Confirmation and fluency	7-8 years old 2nd and 3rd grade	Child reads simple, familiar stories and selections with increasing fluency. This is done by consolidating the basic decoding elements, sight vocabulary, and meaning context in the reading of familiar stories and selections.
Stage 3: Reading for learning the new Phase A Phase B	9-13 years old 4th-8th grade Intermediate 4th- 6th Junior high school 7th -9th	Reading is used to learn new ideas, to gain new knowledge, to experience new feelings, to learn new attitudes, generally from one viewpoint.
Stage 4: Multiple viewpoints	15-17 years old 10th-12th grade	Reading widely from a broad range of complex materials, both expository and narrative, with a variety of viewpoints.
Stage 5: Construction and reconstruction	18+ years old College and beyond	Reading is used for one's own needs and purposes (professional and personal); reading serves to integrate one's knowledge with that of others, to synthesize it and to create new knowledge. It is rapid and efficient.

Note. Source: Chall, J.S. (1983). *Stages of reading development*. N.Y.: McGraw-Hill Book Company.

In Stage 0, which typically encompasses students from age 0 to 6, students are learning basic concepts of reading and writing such as sign reading, letter identification, name writing, and pretending to write one's name. In Stage 1, typically encompassing students in grades one and the beginning of grade two, students are learning the alphabetic principle and applying it to simple texts. In Stage 2, which usually involves students in grades two and three, students are developing fluency and automaticity in familiar texts, which fall within their current abilities and

understanding. Stages one and two are viewed as those in which students are "learning to read." Stages 3 to 5 are dubbed "reading to learn" stages as texts go above and beyond what readers currently know both cognitively and linguistically. Stage 3 is represented by students in grades four through eight. In this stage, students use reading as a tool, and readers encounter new words and ideas, which lie beyond what is known to them. Stage 4 and 5 typically involve high school and college students, who are expected to read complex materials in regards to content, language, and understanding. If readers are to read at these stages, they must expand their vocabulary, language, and knowledge so that critical and broad thinking may be obtained.

Chall's theory highlights a distinct shift which occurs as readers move through the proposed stages. In general, readers move from learning the medium in the successive stages (i.e. recognition of printed words and acquisition of the alphabetic principle) to mastering a more widespread, conceptual, and less familiar meaning vocabulary and more progressive syntax in the later stages. This major shift, according to Chall, is observable when students move into Stage 3.

While numerous stage theories of reading have been proposed (Chall, 1983; Ehri, 1991; Frith, 1985; Gates, 1947; Gough, Juel, and Griffith, 1992; Gray, 1925; Russell, 1961), categories within each exist upon a continuum, varying with each individual student's growth over time. Gunning (2003) criticizes the separation of reading into stages based upon growth considering that reading is constant, uninterrupted, and endless. At the same time, he acknowledges the need for this distinction so that educators may gain a better understanding of what readers have accomplished, where they are currently performing, and where they are moving so that they may work to best meet their needs. In order for educators to grasp the complexity that is literacy, they must be familiar with the typical characteristics of readers at each stage. While each researcher

used distinctive terms to label the developmental stages of reading, all stage theorists agree that the ways in which students attempt to read change over time as students grow and mature in their reading attempts (Gunning, 2010).

In attempting to understand the present literacy expectations of the research participants, Chall's Stage Model of Literacy (1983) will be applied. Consequently, participants will work to master the alphabetic principle by applying it to simple texts. Thus, students will be learning to read as they face well-known words in addition to short and less sophisticated sentences. Considering that students identified for this research are at-risk in reading, one could assume that students may not have yet entered Stage 1 (Chall, 1983) and are currently in Stage 0 (Chall, 1983). As a result, some students may be learning basic concepts of reading and writing as defined above. Whether in Stage 0 or 1, all participants will be working on emergent literacy skills in an effort to become readers.

Relationship Between Beginning Readers and Students with Behavior

Previous research regarding the academic status of children with EBD in public schools has concentrated on three areas: (a) comparative analyses of the academic achievement of children with EBD with normally achieving students and those with learning disabilities or mental retardation, (b) inquiries of the co-occurrence of EBD and academic underachievement deficits, and (c) examinations of the specific types of problem behavior related to academic achievement (e.g., Anderson et al., 2001; Scruggs & Mastropieri, 1986). This research has determined that children with EBD regularly display moderate to severe academic achievement deficits relative to normally achieving students (e.g., Greenbaum et al., 1996; Mattison, et al., 1998; Meadows, et al, 1994; Wagner, 1995).

Though the precise nature of the relationship between poor reading skills and problem behavior continue to be investigated (Dally, 2006; Morgan et al., 2008; Trout, Epstein, Nelson, Synhorst, et al., 2006), suggestion of the co-occurrence of reading difficulties and behavioral problems is alarming (Glassberg, Hooper, & Mattison, 1999; Kauffman et al., 1987; Trout, et al., 2003). Specifically, reading difficulties may occur in more than 60% of students with EBD (Glassberg et al., 1999; Nelson, Benner, Gonzalez., 2003; Trout et al., 2003). Clear evidence that behavior problems negatively influence literacy outcomes in kindergarten and first grade currently exist (Bub, McCartney, & Willett, 2007; Huffman, Mehlinger, & Kerivan, 2000; Klein, 2002; LaParo & Pianta, 2000; Miles & Stipek, 2006; Spira & Fischel, 2005).

While extensive research has attempted to describe the relationship between problem behaviors and academic shortcomings in reading (Hinshaw, 1992b; Petras, Schaeffer, Ialongo, Hubbard, Muthen, Lambert, et al., 2004) there exists only a small number of school-based, treatment-outcome studies which have attempted to determine immediate and collateral effects of academic interventions for students with or at risk for EBD who also possess incomplete reading skills (Lane, 2004). In actuality, a systematic review of the literature of reading interventions conducted recently uncovered five reading intervention studies with elementary age students that examined both reading and behavioral outcomes (Lane, Barton-Arwood, Rogers, & Robertson, in press).

Researchers have established numerous hypothetical models to explain the relationship between academic underachievement, specifically in reading, and behavior problems (Berger, Yule, & Rutter, 1975; Hinshaw, 1992; Richards, Symons, Greene, & Szuszkrewiz, 1995). The first suggests that academic deficits lead to behavioral problems. More specifically, students may act out to avoid tasks they view as aversive (Fitzsimmons, Cheever, Leonard, &

Macunovich, 1969; Hinshaw, 1992b; Williams & McGee, 1994). The second proposes that behavioral problems lead to academic deficits (Berger et al., 1975; Cornwall & Bawden, 1992; Patterson, DeBaryshe, & Ramsey, 1989). A third model offers up a transactional model, in which the relationship between academic deficits and behavior are recursive (Richards et al., 1995). The fourth and final model invites the idea that other variables such as hyperactivity-impulsivity-inattention, cognitive behavior, or other variables may regulate this relationship (Ayllon & Roberts, 1974; Coie & Krehbiel, 1984; Lane, O'Shaughnessy, et al., 2001; Lane, Wehby, Menzies, Gregg, Doukas, & Munton, 2002; Lane, Little, Redding-Rhodes, Phillips, & Welsh, 2007; Rapport, Scanlan, & Denney, 1999).

A concurrent relationship between EBD and language disorders has been consistently reported, with prevalence rates ranging from moderate to high levels (Donahue, Cole, & Hartas, 1994; Kauffman, 2001; Rogers-Adkinson & Griffith, 1999; Sanger, Maag, & Shapiro, 1994) Deficits in language and speech development have been identified as strong correlates of reading underachievement (Duane, 1983). While the direction and nature of influence of the interaction between EBD, language impairments, and reading difficulties remains indeterminate, it is clear that they often occur in conjunction with one another (Sampson, 1966). This furthers the debate that problems with behavior may be a collateral effect of other variables.

All proposed models are important to consider when designing interventions. In fact, "combining behavior support and effective instruction may be an important theme for school reform in the United States" (O'Shaughnessy, Lane, Gresham, and Beebe-Frankenberger, 2003, p. 382). Because strong correlations have been established between low academic achievement in reading and behavior problems (Heward, 2006) a need to integrate reading and behaviors into a cohesive model currently exists (Stewart, Benner, Martella, & Marchand-Martella, 2007).

Results from combined studies indicate improved academic performance and reduced behavior problems (Stewart et al., 2007). "The fact is, academic achievement and good behavior reinforce each other: Experiencing some success academically is related to decreases in acting out; conversely, learning positive behaviors is related to doing better academically" (Walker et al., 2003, p. 10). Considering that research has established a link between reading and behavior difficulties, it only makes sense that schools address both issues consecutively (Stewart et al., 2007). This type of approach is considered not only resourceful, preventive, and cost-effective, but also a way to maximize outcomes (Sugai & Horner, 1999).

In addition to various hypothetical models proposed to explain the relationship between reading deficits and behavior, various risk factors based on a logistic regression analyses have been identified that would best predict low basic reading skills of kindergarten and first grade children at risk for EBD (Nelson, Stage, Trout, Duppong-Hurley, & Epstein, 2008). Four out of the initial 11 domains were most predictive of low reading skills: demographic characteristics, childhood maladjustment, family functioning, and maternal depression. Within these four domains, the strongest set of individual risk factors included gender, history of psychiatric hospitalization, abusive to animals, and maternal depression (Nelson, Stage, Trout, et al., 2008).

Moreover, researchers have examined the particular types of problem behavior that are related to the academic skills of students with EBD (Abikoff , Jensen, Arnold, Hoza, Hechtman, Pollack, et al., 2002; Barriga, Doran, Newell, Morrison, Barbetti, & Robbins, 2002; Lane, Gresham, MacMillan, & Bocian, 2001; Mattison, et al., 1998; Nelson, Benner, Lane, et al., 2004; Nelson, Cooper, Gonzalez, 2004). The results of this research propose that externalizing behaviors are related to academic skills, but that internalizing behaviors are not (Nelson et al., 2006). For example, Nelson, Benner, Lane, et al. (2004) conducted multiple regression analyses

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to assess the relative contribution of externalizing and internalizing problem behaviors on the reading, written language, and mathematics achievement in a sample of 155 students with EBD. In general, students with EBD who exhibited externalizing problem behaviors (i.e., aggression, delinquent, attention problems) were more likely to experience academic achievement deficits (i.e., reading, written language, mathematics) than students who demonstrated internalizing ones (i.e., withdrawn, somatic complaints, anxious/depressed, social problems, through problems). These results were consistent with those of earlier inquiries (e.g., Abikoff et al., 2002; Lane, O'Shaughnessy, Lambros et al., 2001; Mattison, et al., 1998) demonstrating that conduct (e.g., aggression, delinquency) and attention problems were connected to academic achievement. Moreover, Nelson, Benner, & Cheney (2005) found that students with EBD who demonstrated externalizing problem behaviors (i.e., aggression, delinquent, attention problems) were more likely to experience language deficits than students who displayed internalizing problem behaviors. These findings validate a previous systematic review of the literature (i.e., Benner, Nelson, & Epstein, 2002), which revealed that up to 9 out of 10 children with EBD in public school settings may have language deficits. In addition, research shows that not only do EBD and language deficits co-occur at a moderately high rate, but that externalizing problem behaviors and language functioning seem to be linked (Benner, Allor, and Mooney, 2008)

Although most research has largely failed to corroborate a clear association between reading disabilities and externalizing behavior, a number of longitudinal studies suggest a causal relationship between reading deficits and problem behaviors. For example, Maughan, Rowe, Loeber, and Stouthamer-Loeber (1996) and McGee, Williams, Share, Anderson and Silva (1986) discovered an increased risk for children with reading difficulties to exhibit externalizing behavior problems. As well, Bennett, Brown, Boyle, Racine, and Offord (2003) found a

longitudinal relationship between reading achievement and antisocial behavior ranging from the start of school up to two years later.

Unfortunately, what is currently known about the coexistence of achievement and behavior is extremely limited in regards to behavior problems causing reading problems or reading problems causing behavior problems. The lack of a causal link has led to an ongoing need for research on the directionality connecting children's social skills and the development of literacy (Miles & Stipek, 2006). Moreover, it underlines the importance of literacy instruction in the early years (Wang & Algozzine, 2011).

One outcome of recognizing the existence of this association is continued interest in finding the underlying cause or in defining the direction of the connection; for many, this means using the relationship as a reason for developing specific reading interventions in order to prevent behavior problems. While many researchers work to uncover this link, others believe the existence of such a relationship to be unfounded (Wang & Algozzine, 2011). Instead, they propose that the unrelenting search for a causal connection will only produce outcomes relative to those that currently exist. While not wanting to weaken the importance of the relationship that does exist, Wang & Algozzine (2011) believe attention should be focused on uncovering a potential third factor which is causally linked to both behaviors and academics. That way, efforts can instead focus on the effects of manipulating said factor in order to prevent, control, and possibly eliminate learning problems in school.

Characteristics of Students with EBD

EBD students with reading problems have been well-documented (Lane, 1999; Levy & Vaughn, 2002; Vaughn et al., 2002), and evidence-based practices in reading instruction, are sorely needed (Sutherland & Snyder, 2007). Even though students with EBD are most often

recognized for their social and behavioral problems, they often have below-average academic performance levels, predominantly in reading (Lane, 2004; Nelson, Benner, et al., 2004). Together, these deficits place students with EBD at an elevated risk for adverse outcomes while in school and beyond (Wagner & Davis, 2006). For example, Greenbaum et al. (1996), reported that the percentage of children with EBD who were reading below grade level increased from 54% to 85% across a seven year span. Nelson, Benner, Lane, et al. (2004) also reported that 83% of their study's sample of children with EBD performed below the norm group on a standardized measure of reading skill. It is well founded that academic failure, especially in reading, is a major predictor of larger failures across the school setting (Epstein et al., 1989; Kame'enui & Darch, 1995; Kauffman, 1997; Walker et al., 1995).

As stated by the federal definition of serious emotional disturbance under the Individuals with Disabilities Education Act (2004), poor academic achievement is an identifying characteristic of those labeled with EBD. Moreover, students are not often classified as having EBD unless they have also exhibited a uniform pattern of academic and school failure (Forness, Kavale, & Lopez, 1993; Rock, Fessler, & Church, 1997). Furthermore, the struggle with learning that is typically displayed cannot be explained by intellectual, sensory, or health factors (U.S. DOE, 1994). As a result, the success that comes along with academic and school achievement is at risk for students with EBD, especially in the absence of evidence-based practices in the classroom (Vannest, Harrison, Temple-Harvey, Ramsey, & Parker, 2011). However, research shows that implementation of evidence-based reading interventions for students with EBD may remediate many reading deficits (Landrum, Tankersley, & Kauffman, 2003).

Characteristics of students with EBD that could potentially interfere with academic progress include lack of motivation, poor attention to task, deficits in interpersonal relationship skills, negative attitudes about school, use of coercive tactics to manipulate the environment, oppositionality, and externalizing behavior patterns including aggressive and disruptive behavior (Lane, 2004; Sutherland, Lewis-Palmer, Strichter, & Morgan, 2008; Walker, Forness, Kauffman, Epstein, Gresham, Nelson, et al., 1998; Wehby, Symons, & Shores, 1995). In addition, learning gaps are compounded for this population as a result of a focus on decreasing maladaptive behavior before placing a focus on academic interventions (Forness, 1981; Lane, 2004; Quinn, Jannasch-Pennell, & Rutherford, 1995; Vannest, Temple-Harvey, & Mason, 2009).

Concerning academic functioning, recent evidence points to comprehensive delays in skill development for students with EBD that arise early and deteriorate over time. For example, in their study of 155 K-12 students with EBD, Nelson, Benner, Lane, et al. (2004) reported large academic achievement deficits across the areas of reading, writing, and math relative to the norm group of a well-established standardized measure of global achievement. An effect size discrepancy of 0.94 was reported across all the major indices, indicating that about 83% of students scored below the norm group across all content areas. Trout et al. (2003) indicated that 91% (i.e., 31 of 35) of the academic status reports they reviewed over a 40-year time frame (i.e., 1961-2000) reported academically deficient findings (i.e., below grade level or years behind peers). The magnitude of these academic delays was usually between one and two years below grade level, with academic delays reported early and continuing throughout schooling. Trout and colleagues', as well as Nelson and colleagues' findings are reinforced by the work of Anderson et al. (2001), whose research compared the academic achievement of students with EBD and those with learning disabilities over time in reading and math. Anderson et al. (2001)

found the reading achievement scores of students with EBD failed to show adequate improvement over the five-year period, whereas the achievement of students with learning disabilities improved significantly.

Despite increases in intensity and duration of interventions, students with EBD typically show slow growth and a lack of transfer to fluency (Strong, Wehby, Falk, & Lane 2004; Wehby, Falk, et al., 2003; Wehby, Lane, & Falk, 2005) The prognosis for students with behavioral and learning problems is often very unfortunate as they often experience school failure and drop out of school at much higher rates than any other disability group (Kortering & Blackorby, 1992; Rylance, 1997; U.S. Department of Education, 1998; Wagner, 1995; Wood & Cronin, 1999). Students with EBD and a history of problem behaviors are often placed in self-contained classrooms. As a result, they often experience failure in their school careers. While in self-contained classrooms, these students often develop behaviors that, very successfully, remove them from academic settings they view as aversive (Gunter, Denny, Jack, Shores, & Nelson, 1993).

Research consistently indicates a lack of improvement for students with EBD although the nature and extent of failure to improve varies substantially across studies (Lane, Barton-Arwood, Nelson, & Wehby, 2008). Regarding academic performance, findings vary regarding whether deficits in different subject areas (e.g., reading, math, writing) remain stable or deteriorate over time (Greenbaum et al., 1996; Nelson, Benner, Lane, et al., 2004; Reid, et al., 2004). Likewise, discrepancies exist between studies regarding the behavioral and social growth of students with ED (Greenbaum et al, 1996; Lane et al., 2005; Mattison & Spitznagel, 2001; Nelson, Babyak, et al., 2003). While the exact nature and directionality of the relationship

remains ambiguous, it is evident that academic and behavioral difficulties exist as highly

correlated risk factors (Kauffman, 2001).

Previous Interventions

Even though teachers may decide to focus primarily on the behavioral concerns of

students with EBD, it is vital that they also attend to the academic needs of these students (Lane

& Wehby, 2002). An understanding is needed that the implementation of high quality

instruction not only affects student achievement, but behavior as well. Focusing on only one is a

step in the wrong direction when attempting to provide educational support for students with

EBD (Algozzine, Wang, White, Cooke, Marr, Algozzine, Helf, et al., 2012). The academic

deficits of students with EBD, like their antisocial behavior patterns (Kazdin, 1987) tend to

become broader over time (Anderson et al., 2001; Nelson, Benner, Lane, et al., 2004). By

addressing both reading and behavior problems during the early elementary years, students have

an opportunity to partake entirely in academic instruction, which, in turn, diminishes the

likelihood that their skill and learning deficits will increase (Bullis & Walker, 1994).

In order to rise to the occasion, it is essential that educators are provided with feasible

and supported methods for improving academic and social behavior as well as for delivering

school, classroom, and individual support (Algozzine et al., 2012). Fortunately, a principal goal

of an extensive amount of intervention research is to ascertain how to increase a teacher's ability

to employ evidence-based practices within the general education setting with fidelity while also

being given a practical amount of support all while addressing the abundant demands of the

classroom (Lane, Little, et al., 2007). Research has confirmed that teacher fidelity of

implementation of behavioral and academic interventions has a statistically significant effect on

student responsiveness to the intervention (Benner, Beaudoin, Chen, Davis, & Ralston, 2010;

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Benner et al., 2011). Both instructional and classroom management practices that are effective offer the needed foundation for student engagement and learning, which, in turn, may be accompanied by decreases in problem behaviors (Conroy, Sutherland, Haydon, Stormont, & Harman, 2008).

Though the relationship between academic and behavioral performance has been established, the directionality of the relationship has been ambiguous (Lane et al., 2011). It is evident, however, that teaching both academics and behavior using evidence-based practices is more beneficial than hoping that by teaching one, the other may change (Algozzine, Wang, & Violette, 2011). Until recently, the majority of treatment-outcome studies focused on social and behavioral concerns (e.g., Mathur, Kavale, Quinn, Forness, & Rutherford, 1996). However, within the last decade, educators have placed increased emphasis on learning how to meet the academic needs of these students (Lane, 2004).

While limited in number (Coleman & Vaughn, 2000; Levy & Chard, 2001), the scarce amounts of reading intervention studies that have been conducted with young students with EBD have revealed favorable results (Babyak et al., 2000; Cochran, Feng, Cartledge, & Hamilton, 1993; Falk & Wehby, 2001; Wehby, Falk, et al., 2003; Wehby, Lane, Falk, 2005). Various other studies confirm that reading interventions with elementary-age students with EBD could lead to improved phonological awareness (Falk & Wehby, 2001; Wehby, Falk et al., 2003); word attack (Shisler, Top, & Osguthorpe, 1986; Wehby, Falk, et al., 2003); and word recognition (Dawson, Venn, & Gunter, 2000; McCurdy, Cundari, & Lentz, 1990). Although used in conjunction with other reading interventions, repeated reading produced reading gains with intervention passages (Scott & Shearer-Lingo, 2002; Strong et al., 2004) as well as on untrained passages and standardized assessments (Strong et al., 2004). Repeated reading strategies have also revealed

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promising results in both reading fluency and comprehension (e.g., Dowhower, 1987; Homan,

Klesius, & Hite, 1993; Mercer, Campbell, Mercer, & Miller, 1998; Rashotte & Torgesen, 1985).

In addition, *Phonological Awareness Training for Reading* (Lane, 1999; Lane, O'Shaughnessy,

et al., 2001) has produced favorable results.

In a study conducted by Lane, O'Shaughnessy, Lambros, et al. (2001), researchers

explored the effectiveness of a supplemental program, *Phonological Awareness Training for

Reading* (PATR; Torgesen & Bryant, 1994) on the early literacy skills, disruptive classroom

behavior, and social interactions of seven general education students identified as at risk for

EBD. Results revealed growth in nonsense word fluency and oral reading fluency that was

sustained into the follow-up phase of the study. In addition, total disruptive behavior decreased

from baseline to intervention phases. Six students also showed a decrease in negative

interactions on the playground, with two students sustaining these changes into the follow-up

phase.

Nelson et al. (2005) examined the effect of a supplemental pre-reading intervention,

Stepping Stones to Literacy (Nelson, Cooper, et al., 2004), on the reading and behavioral

performance of 63 kindergarten students at risk for EBD and reading problems. Results revealed

significant improvements in phonological awareness, word identification, word-attack skills, and

letter-naming fluency for students in the intervention group compared to those in the control

group. Moreover, no significant differences were found between the treatment and control

groups on the behavior rating scale.

Finally, Lane, Wehby, Menzies, et al. (2002) examined the effects of a supplemental

early literacy program, Shefelbine's *Phonics Chapter Books* (1998), with seven first-grade

students who were nonresponsive to a school wide primary prevention program. This study was

used as a guide throughout this particular study. Lane, Wehby, Menzies, et al. (2002) used a

multiple baseline across intervention groups design to evaluate the impact Shefelbine's program

had on early literacy skills, disruptive classroom behavior, and negative social interactions on the

playground. Final results exposed strong growth in nonsense word fluency, as well as

advancements in oral reading fluency. The students also demonstrated ongoing decreases in

disruptive classroom behavior and negative social interactions on the playground.

Explicit instruction is a clear-cut and straightforward approach to teaching with an

emphasis on giving students a clear statement about what is to be learned, arranged in small steps

with specific and varied examples, confirming student understanding, and attaining active and

productive participation of students (e.g., Baker, Fein, & Baker, 2010). Multiple reviews of the

literature indicate that youth with EBD respond to explicit teaching presented in large group,

small group, and individualized instruction (Benner, Nelson, Ralston, & Mooney, 2010;

Mooney et al., 2003; Ralston, Benner, Tsai, Riccomini, & Nelson, in press). This is encouraging

to staff seeking to improve the academic outcomes of youth with EBD (Nelson, Benner, &

Mooney, 2008). The efficiency of explicit instruction and its power to increase academic

achievement is sustained by research (National Institute of Child Health and Human

Development, 2000). Nelson (1996) performed a comparative analysis of the effects of explicit

instruction, cooperative learning, and independent learning instructional approaches on

classroom behavior (i.e., on-task and disruptive behavior) of youth with EBD. Results indicated

that students steadily displayed higher rates of on-task behavior and lower rates of disruptive

behavior during explicit instruction. Such results make explicit instruction a formidable tool

accessible to teachers in order to improve the classroom behavior of youth with EBD (Benner,

Kutash, Nelson, & Fisher, 2013).

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In contrast, evidence from other various studies show that while reading interventions often produce growth in literacy skills, they do not produce the same results in regards to behavioral outcomes (Kamps, Wills, Greenwood, Thorne, Lazo, Crockett, Akers, et al., 2003; Lane, Barton-Arwood, Nelson, & Wehby, 2008; Lane & Menzies, 2002b; Wehby, Falk et al., 2003). For example, Wehby, Falk et al. (2003) explored the effects of an intensive reading program that combined a modified version of Open Court Reading (OC; Adams, Bereiter, Carruthers, Case, Hirshberg, McKeough, et al., 2000) and Peer Assisted Learning Strategies (PALS; Fuchs, Fuchs, Mathes, et al., 1997) with eight students receiving special education services for behavior and learning problems. Results showed moderate improvements in sound naming, blending, and nonsense word fluency. While there were slight increases in attending, researchers discovered no decreases in inappropriate behavior.

Numerous intervention efforts to date have required significant and constant support from adults other than just the classroom teacher. This level of intervention is not sustainable in most settings, and it is vital that researchers and practitioners identify evidence-based practices that general education classroom teachers can implement solely on their own or with minimal support (Lane, Little, et al. 2007). A study conducted by Lane, Little, et al. (2007) shows support for this very practice.

Findings by Nelson et al. (2011) once again suggest that literacy and behavior interventions are necessary to improve the outcomes of students with EBD. Tiered models currently being utilized in schools should be designed to incorporate both academic and social capacities in order to appropriately meet the needs of students with EBD (Nelson, Duppong-Hurley, Synhorst, Epstein & Stage, 2009; Stewart et al., 2007). An ideal place to start (Coleman and Vaughn , 2000) may include reading interventions proven effective with other populations of

learners, such as those with learning disabilities or low academic achievement, as they could potentially be useful for students with EBD. At this current point, however, such interventions need to be empirically substantiated with the EBD population prior to particular recommendations (Wehby et al., 2005).

Considering the challenges faced by this population of students, the increased attention to academic needs is encouraging. Current research supports the idea that academic and behavioral supports must be interwoven. It is not enough to hope that children will learn appropriate behaviors as a result of literacy instruction and vice versa. While it is crucial to abstain from reactive practices when attempting to manage students' behavior, it is also imperative that schools abandon the "wait-and-see" model (Foorman et al. 1997) typical of many schools. In its place, schools must embrace a proactive approach for preventing reading problems in children at risk for developing EBD (Lane, Gresham, & O'Shaughnessy, 2002).

Challenges

While research continues to uncover evidence-based practices that have proven to be effective for the population of students with or at-risk of EBD, countless hurdles to successful implementation stand in the way. Generally speaking, the academic performance of students with EBD is continuously described as being significantly lower than that of students without disabilities (Reid et al., 2004). While reported prevalence rates vary, the academic and behavior deficit overlap starts early in development, appears considerably above levels obtainable by chance, and, once in place, are challenging to remediate (Hinshaw, 1992a).

Along with having academic deficits comparable to those of students with learning disabilities, students with and at risk for EBD display patterns of behavior that may inhibit the competence of even the most experienced teacher attempting to deliver instruction (Walker, et

al., 2004.) Students with EBD often demonstrate noncompliant, disruptive behaviors in order to escape instruction as well as to obtain attention from the teacher (Umbreit, Lane, & Dejud, 2004). A display of such behaviors makes it very difficult, if not so, to carry out instructional practices that are evidence based and with a level of fidelity needed to effect change (Lane, Little, Redding-Rhodes, et al., 2007).

The idea of inclusion for students who display such behavior remains a controversial topic (Sutherland & Snyder, 2007). As a result of this particular policy, students with EBD are being continuously placed in general education classrooms with teachers who are ill-prepared to meet the challenge (Sutherland & Snyder, 2007). Students with EBD do not receive much needed support by educators who lack training and/or needed assistance in order to deliver evidence based classroom instruction and behavior management techniques (Lane et al., 2011). When attempted, interventions are offset by strained interactions between teachers and students produced by undesirable behaviors. These very circumstances may exacerbate the maintenance of learning and behavior problems, while also causing variations in intervention implementation integrity and teacher attention (Sutherland & Snyder, 2007). Furthermore, researchers (e.g., Gunter & Denny, 1998; Lewis et al., 2004; Steinberg & Kniter, 1992; Wehby et al., 1998) have acknowledged and lamented the lack of effective instructional practices in classrooms for students with EBD. Rather than highly engaging activities, academic instruction for students with EBD consists of worksheets, nonmeaningful curricula, and ineffective teaching strategies (Steinberg & Knitzer, 1992).

Lack of effective instruction is thought to be a direct result of the focus on the control and elimination of problem behavior rather than an emphasis on academics (Gunter, Jack, Shores, Carrell, & Flowers, 1993; Levy & Chard, 2001; Rivera, et al., 2006; Sutherland &

Snyder, 2007; Wehby, Lane, & Falk, 2003;). A common belief within the classroom is that unless behaviors are under control, instruction is limited. As a result, adult attention is spent handling problem behaviors rather than on academic instruction (Benner, 2013).   Consequently, it seems as though academic struggles and disruptive behaviors form a cycle of aversive behavior and academic failure (Cullinan, Osborner, & Epstein, 2004). The frequency of school failure, suspension, expulsion, and dropout by students with EBD are a dismal testament to the futility of physical placement of students with challenging behavior in conventional educational settings (Kauffman & Landrum, 2009; Kerr & Nelson, 2010).

Researchers have proposed that aggressive behavior patterns intensify the likelihood that children will develop aversive relationships with their teachers (Ladd & Burgess, 1999). When these problematic relationships happen as early as kindergarten, they appear to be associated with academic and behavioral problems through eighth grade (Hamre & Pianta, 2001). These relationships may also be a factor in students with EBD having low rates of positive teacher attention, such as academic talk, teacher praise, and opportunities to respond to academic requests (e.g., Van Acker, Grant, & Henry, 1996; Wehby et al., 1995). Often, teachers will altogether avoid interactions with students who display the highest levels of problematic behavior and will choose, instead, to participate in more instructional interactions with students who are displaying appropriate behavior (Carr, Taylor, & Robinson, 1991; Wehby et al.,1998) Alarmingly, this may also be the case for students who are lower-achieving.   Teachers may engage in fewer instructional interactions with lower-achieving students, regardless of whether or not these students display inappropriate behaviors. This is due to the fact that interactions with lower-achieving students are less reinforcing to teachers due to the learning challenges that surround classroom interactions (Greenwood, 1996).

As academic demands intensify, problem behaviors begin to contend with the amount of time students are "on task" and, while teachers continue to face accountability standards, stress levels increase for educators who already feel unable to manage challenging behaviors (Fantuzzo, Sproul, Perlman, & Perry, 2010; Hemmeter, Corso, & Cheatham, 2006). Researchers have discovered that approximately 58% of committed classroom instructional time is spent focusing on problem behaviors (Martella, Nelson, Marchand-Martella, & O'Reilly, 2012). Despite engagement, children may still not be successful in their attempts at academic success (Benner, 2013). For example, researchers have reported that youth are engaged and experience success only 17% of the time. This translates to approximately one hour out of the six hours of available instructional time per day in most school settings (Martella et al., 2012). When students are not actively engaged, the connections between problem behavior and academic difficulties intensifies and results in less academic instruction, a decrease in exposure to academic material, course content, and learning opportunities (Carr et al., 1991; Wehby et al., 1998). In addition, due to the nature of off-task and disruptive behaviors and their ability to disrupt the learning and behavior of other students, (Gunter, Denny, et al., 1993; Gunter, Shores, Jack, Denny, & DePaepe, 1994; Wehby et al., 1995), students with EBD are often alienated from classroom activities and/or removed from the classroom altogether. This type of decrease in instructional time (Carr et al., 1991) is a probable influence on the academic difficulties of students with EBD (Blood, 2010).

In an attempt to explain the level of instruction for students with EBD, coercion theory provides such an explanation (Patterson, 1995). According to researchers, coercive interactions between teachers and students who display problem behaviors result in behaviors that guide teachers away from instruction. A sequence of teacher instruction closely followed by the

display of noncompliant or disruptive behavior by students results in avoidance types of behaviors by the teacher (Gunter, Jack, DePaepe, Reed, & Harrison, 1994). In the end, teachers downgrade their curriculum expectations and will cease instruction by either eliminating the student from the classroom or by allowing the student to not complete academic activities (Benner, et al., 2013).

In the absence of effective intervention, deficits in early literacy skills increase over time to contain deficits in decoding, fluency, and comprehension skills in later grades (Good, Simmons, & Smith, 1998; O'Shaughnessy et al., 2003). Naturally, struggling readers spend considerably less time interacting with text than do strong readers. Subsequently, strong readers further build their reading skills as they engage in more reading opportunities, become subjected to larger amounts of vocabulary, and foster a love of reading, while struggling readers do not. (Davis et al., 2004).

In spite of best efforts, researchers have reported that nearly 50% of students with EBD and other high-incidence disabilities have no response to academic interventions, although specific interventions were not indicated (Fuchs et al., 2001). For example, Anderson et al. (2001) discovered that the reading achievement scores of students with EBD were inclined to plateau or decline over five years, while the achievement of students with learning disabilities increased considerably. Considering that students with challenging behavior are more impervious to reading interventions (Al Otaiba & Fuchs, 2002, 2006; Nelson et al., 2003), it is a vital task to identify instructional methods that are successful with this unique population (Harris, Oakes, Lane, & Rutherford, Jr., 2009).

Researchers continue work to better practices in order to meet the needs of students with or at risk for EBD. As a result, numerous scientifically based practices have been uncovered

(e.g., Lewis et al., 2004). Unfortunately, outcomes regarding both behavior and academic outcomes for this unique population continue to be dismal (Cullinan et al., 2003; Nelson, Babyak, et al., 2003). Various inquiries emphasize a necessity for sustained efforts to uncover the most appropriate practices for obtaining ideal outcomes in both behavior and academics (Lane, et al. 2006; Nelson, Benner, Lane, et al., 2004).

Systematic Review of Literature

The intent of this review was to replicate and extend the review of literature regarding the effects of reading instruction on the reading skills of students with or at risk of behavioral disorders conducted by Benner, Nelson, Ralston, et al. (2010). In particular, the intent was to examine the following questions:

1. What are the characteristics of the participants involved in studies examining reading skills and students who are behaviorally at-risk?

2. What were the design features involved in the included studies?

3. What were the effects of the studies?

4. How did the studies rate based on the quality indicators created by the Council for Exceptional Children (2014)?

Method

In order to address these questions, a systematic search was completed as a means of identifying research regarding reading instruction on the reading skills of students at risk for EBD. This literature review not only replicates but extends a similar review conducted by Benner et al. (2010), which explored the existing research regarding the effects of reading interventions on the reading skills of students with or at risk of behavioral disorders from 1970 to

2008. In order to ascertain the most inclusive literature possible, systematic searches were conducted of pertinent electronic databases including ERIC, EBSCO, PsycINFO, Dissertation and Theses Full Text, JSTOR, Academic Search Premiere, and Education Full Text. Following the search procedures outlined by Benner et al. (2010), these search terms were used to find articles concerning reading interventions and their effects on the reading skills of students with or at risk for behavioral disorders: "reading difficulties" OR "remedial reading" OR "read" OR "beginning reading" OR "reading readiness" OR "emergent literacy" OR "early interventions" OR "phonological awareness instruction" OR "phonemic awareness" AND "at-risk" OR "disadvantaged" OR "behavioral disorders" OR "emotional disturbance" OR "problem behavior" OR "behavior difficulties" OR "EBD" OR "E/BD". A total of 1,338 were found based upon the listed search terms.

Hand searches were also conducted for years 2008-2014 for the following journals: *Exceptional Children, Journal of educational Research, The Journal of education Research, Behavioral Disorders, Journal of Emotional and Behavioral Disorders, Journal of Special Education, Literacy Research and Instruction, Reading Research and Instruction, Reading and Writing Quarterly, Journal of Reading Behavior, Journal of Literacy Research, Reading Research Quarterly, Scientific Studies in Reading, and Remedial and Special Education.* A total of 47 articles were found.

After combining articles found from online databases as well as articles obtained by hand searches, a total of 992 articles were screened after duplicates were removed. Initial screening entailed reading each abstract and title to see if the article contained any of the listed search terms. At this point, 872 articles were excluded. A total of 120 articles were scanned in their

entirety to determine if they met the following inclusion criteria, which were the exact same as those sought by Benner et al. (2010):

1. Research had to be published in peer-reviewed journal.

2. Participants included students with or at risk for behavior disorders.

3. The independent variable had to focus primarily on reading instruction.

4. Group studies were randomized controlled trials or quasi-experimental designs that had comparison group(s) with demonstrated equivalence for experimental studies. Single-case studies had to use a design that enabled demonstration of a functional effect of literacy instruction on reading skills (e.g. multiple baseline),

5. Dependent measures addressed reading (e.g., changes in phonological awareness). Outcomes in other areas (e.g., receptive language skills, attitudes toward reading) were not considered in the studies reviewed.

6. Reports had to include quantitative information necessary to compute at least one effect size estimator each for reading outcomes.

7. The article had to be available in English. The study could have been conducted in any country.

Studies that met all seven criteria were included in the study. A total of three studies met all criteria and were included in the present study.

Coding Procedures

All three articles retrieved from the search were coded along the five variables outlined by Benner et al. (2010) with the exception of effect sizes. Additionally, the articles were coded

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for the quality of study, which was not included in the original meta-analysis: (a) participant (b) design features, and (c) the quality of the study.

Participants. The following information was collected regarding the number of participants (i.e., total, per experimental group), selection criteria (i.e., reading, social adjustment, disability status, placement, none), grade level, mean age, gender, race/ethnicity, disabilities, and free or reduced lunch status.

Design Features. Information was gathered on the type of design (i.e., randomized control, quasi-experimental with equating of nonequivalent groups) and level of randomization if applicable (i.e., student, classroom, school) in the case of group studies. Similarly, information was collected on the type of single-case design used by the researchers. The design had to allow for the demonstration of a functional effect of literacy instruction on the reading skills of students (e.g., multiple baseline, withdrawal). Mode of delivery information was also collected (i.e., large group, small group, one-to-one), literacy focus (i.e., phonological awareness, phonics, fluency, vocabulary, comprehension), intervention delivery (i.e., school staff, researchers), length of intervention (i.e., number of sessions/days), and treatment fidelity (i.e., measured, use in analyses). For the dependent variables, information was collected on the type(s) of literacy measures (i.e., norm referenced, curriculum based, researcher designed).

Quality of Studies. The quality of the individual studies was observed and coded using the Council for Exceptional Children Standards for Evidence-Based Practices in Special Education (2014). These indicators were developed in an effort to determine "studies that have the minimal methodological features to merit confidence in their findings" (p.2). These quality standards are applicable to both single subject and group study research designs. The standards

are considered a "refinement of the foundational and exceptional scholarship" provided by

Gersten and colleagues (2005) as well as Horner and colleagues (2005) in previous years.

Information from a number of other sources including What Works Clearinghouse and the

feedback of 23 anonymous special education researchers who were participants in a Delphi study

are also recognized as contributing to the development of these standards.

Characteristics of Participants

A total of 181 students were included in the three studies contained in this analysis.

Descriptions of participant age, gender, grade level, and disability status are displayed in Table

2.2. and 2.3. The study conducted by Wills, Kamps, Abbott, Bannister, & Kauffman (2010) did

not give a clear indication of age although they did supply grade level of first through third

respectively. The other participants ranged in age from 8.25 years old (Sanford & Horner, 2013)

to 12.3 years of age (Cook, Dart, Collins, Restore, Daikos, & Delport, 2012). There were more

male (n=108) than female (n=73) participants involved in the studies. Participants ranged in

grade levels from first to sixth grade. One (Wills et al., 2010) of the three studies involved

students from a range of grade levels, so exact numbers of students per grade level could not be

calculated.

Table 2.2
Descriptive Information and Effect Sizes for Qualifying Experimental Studies

Study	N/X Age/Grade	Measure	Effect Size	
			Posttest	Overall
Wills et al., (2010)	Total=171	DIBELS	(--)	(--)
	Treatment=94	Nonsense Word Fluency		
	Control=77	Oral Reading Fluency		
	Treatment Age= --	Woodcock Reading Mastery		
	Control Age= --	Test		
	Grade= 1, 2, 3	Word Identification		
		Word Attack		
		Passage Comprehension		

Note. A dashed line (--) indicates that information was not reported.

Table 2.3

Descriptive Information and Effect Sizes for Qualifying Single-Case Studies

Study	N/X Age/Grade	Measure	Effect Size
Sanford & Horner (2013)	Treatment= 4 Age= 8.25 Grade= 2.5	Oral Reading Fluency Nonsense Word Fluency	(--)
Cook, et al. (2012)	Treatment= 6 Age= 12.3 Grade= 6.5	Oral Reading Fluency	(--)

Note. A dashed line (--) indicates that information was not reported.

Design Features

Group. An experimental-control group comparison design was used to calculate the effectiveness of the interventions (Wills et al., 2010). Randomization was at the school level. This particular study was a subset of a larger quasi-experimental design (Kamps & Greenwood, 2005) that was designed to investigate the effects of a three-tier model of school-wide intervention in reading and behavior.

Single. The single case designs that were utilized for the various studies included multiple baseline designs (Cook et al., 2012; Sanford & Horner, 2013). All single case designs allowed for the demonstration of a functional effect of literacy instruction on reading skills.

Independent Variables

Group. A description of the type of reading instruction is presented in Table 2.4. In the group study conducted by Wills et al. (2010), multiple aspects of literacy (e.g. phonological awareness, phonics, fluency, vocab, comprehension) were targeted. Measures used to deliver instruction were multiple research-based curriculum programs including *Open Court*, *Guided Reading*, and *Reading Mastery* at the elementary level. At the secondary level, direct instruction programs including *Early Interventions in Reading* (Mathes & Torgesen, 2005), *Reading*

Mastery (1995), *Read Well* (Sprick, Howard, & Fidanque, 1998), and *Programmed Reading*

(Buchannan, 1989) were utilized.

Table 2.4
Literacy Instruction for Qualifying Experimental Studies

Study	Instructional Format	Description
Wills, et al. (2010)	Whole Group, Small Group, Independent for five years	With core reading curricula already in place, all participating schools implemented a secondary pre-designed curriculum (e.g. *Reading Mastery, Open Court, Guided Reading, Read Well, Programmed Reading)* that was delivered in multiple formats.

Single. Succinct descriptions of the literacy instruction utilized in each single case study

are presented in Table 2.5. One study (Sanford & Horner, 2013) focused on instructional

placement of students within the research validated *Reading Mastery* (Science Research

Associates, 2002) curriculum rather than at frustration level in order to focus on oral reading

fluency. Students' oral reading fluency was also targeted in the final single-subject study (Cook

et al., 2012) while utilizing *The Six-Minute Solution* (Adams & Brown, 2006) in addition to

small group decoding instruction focusing on the alphabetic principle. The small group

instruction targeted the alphabetic principle while utilizing lessons from the *Corrective Reading*

curriculum (Polloway et al., 1986).

Table 2.5
Literacy Instruction for Qualifying Single-Case Studies

Study	Instructional Format	Description
Sanford & Horner (2013)	Small-group instruction 5 days per week for 20 to 60 minutes	Matching of reading instructional level with academic performance demands in *Reading Mastery* (Science Research Associates, 2002) curriculum was implemented.
Cook, et al. (2012)	Small-group instruction 5 days per week for 40 minutes	The *Six Minute Solution* (Adams & Brown, 2006) and decoding instruction focusing on the alphabetic principle were implemented.

Dependent Measures

  Group. In the study, the *Dynamic Indicators of Basic Early Literacy Skills* (DIBELS; Kaminski & Good, 1998) was used as the primary measure for the study. More specifically, two subtests were used: nonsense word fluency (NWF) and oral reading fluency (ORF). In addition, The Woodcock Reading Mastery Test (WRMT), a norm-referenced reading assessment, was also utilized in order to measure student outcomes in the area of reading. Subtests included Word Identification, Word Attack, and Passage Comprehension.

  Single. Researchers in the first study (Cook, et al., 2012) utilized curriculum-based measurement reading probes from AIMSweb in order to assess reading level and progress in response to the interventions. Oral reading fluency based upon performance in the *Reading Mastery* (Science Research Associates, 2002) curriculum was utilized in the second study as well as nonsense word fluency probes from the *Dynamic Indicators of Basic Early Literacy Skills* (DIBELS: Good & Kaminski, 2002) in order to measure reading achievement.

Study Outcomes

  Quality of the Studies. In regards to the quality of studies, none of the three studies that qualified met all of the 28 quality indicators outlined by the Council for Exceptional Children (2014). Table 2.6 provides a description of each study's results in regards to the quality indicators.

Table 2.6
Application of Quality Indicators

Quality Indicator	Cook et al. (2012)		Sanford & Horner (2013)		Wills et al. (2010)	
Context & Setting	Yes(1.00)		Yes(1.00)		Yes(1.00)	
Describes critical features of context or setting relevant to review		1.00		1.00		1.00
Participants	No(0.50)		No(0.50)		Yes(1.00)	
Participant demographics		0.50		0.50		0.50
Participant disability or risk status		0.00		0.00		0.50
Intervention Agent	No(0.50)		Yes(1.00)		Yes(1.00)	
Role		0.50		0.50		0.50
Required training or qualifications		0.00		0.50		0.50
Description of Practice	Yes(1.00)		No(0.50)		Yes(1.00)	
Describes detailed intervention procedures		0.50		0.00		0.50
Description of materials		0.50		0.50		0.50
Implementation Fidelity	Yes(1.00)		Yes(1.00)		Yes(1.00)	
Direct, reliable measures		0.33		0.33		0.33
Dosage or exposure		0.33		0.33		0.33
Type of fidelity		0.33		0.33		0.33
Internal Validity	Yes(1.00)		Yes(1.00)		No(0.64)	
Control and manipulation of IV		0.16		0.16		0.16
Describes baseline or control/comparison conditions		0.16		0.16		0.16
Limited access to treatment intervention		0.16		0.16		0.16
Describes group assignments		N/A		N/A		0.16
Three demonstrations of experimental effects at different times		0.16		0.16		N/A
Baseline with three or more data points that establish pattern of undesired future performance		0.16		0.16		N/A
Controls for common threats to internal validity		0.16		0.16		N/A
Low attrition		N/A		N/A		0.00
Low differential attrition		N/A		N/A		0.00
Outcome Measures/ Dependent Variables	Yes(1.00)		Yes(1.00)		No(0.64)	
Socially important		0.20		0.20		0.16
Defines and describes DV		0.20		0.20		0.16
Intervention effects of all measures reported		0.20		0.20		0.16
Appropriate frequency and timing of outcome		0.20		0.20		0.00
Evidence of adequate internal reliability,		0.20		0.20		0.16

interobserver reliability, test-retest reliability, or parallel-form reliability			
Adequate evidence of validity	N/A	N/A	0.00
Data Analysis	Yes(1.00)	Yes(1.00)	Yes(1.00)
Appropriate techniques	N/A	N/A	0.50
Provides appropriate graphs	1.00	1.00	N/A
Reports effect size	N/A	N/A	0.50
Number of indicators: Absolute coding	6	6	6
Number of indicators: Weighted coding	7	7	7.28

Note. N/A shows that the indicator was not applicable to the study.

Context and Setting. The three studies (Cook et al., 2012; Sanford & Horner, 2013; Wills et al., 2010) included in this analysis met the first quality indicator describing context and setting. These studies provided the critical features of the context or setting relevant to the review including features such as type of program or classroom, type of school, curriculum, and socioeconomic status.

Participants. All studies met the first quality indicator for participants. Each included participant demographics that were relevant to the review such as gender, age, grade, race and socioeconomic status. One (Wills et al., 2010) of the three studies met the second quality indicator for participants by not only reporting disability or risk status of the participants but the method for determining that status as well. In this particular study, initial screening criteria on the *Dynamic Indicators of Basic Early Literacy Skills* (Kaminski & Good, 1998) and the *Systematic Screening for Behavior Disorders* (Walker & Severson, 1992) was used to determine risk status. The other two studies only indicated disability and were not specific regarding the method used to determine it.

Intervention Agent. All three studies met the first quality indicator describing the intervention agent. All of the studies described the role of the intervention agent and background variables that were relevant to the review. Two of the three studies (Sanford & Horner, 2013; Wills et al., 2010) also provided the specific training or qualifications needed in order to implement the intervention and whether or not the agent had them. One study (Cook et al., 2012) did not indicate such qualification and, therefore, did not meet this indicator.

Description of Practice. Two of the articles (Wills et al., 2010; Cook et al., 2012) met the first quality indicator regarding description of practice. These two studies described the intervention procedures in details as well as intervention agents' actions or provided one or more source that would provide this information. Sanford and Horner (2013) did not, however.   All three of the studies described the materials used in the intervention or provided information regarding the sources of this information.

Implementation Fidelity. All studies met the three quality indicators regarding implementation fidelity. All studies reported implementation fidelity regarding the use of a direct, reliable measure. All studies assessed and reported implementation fidelity regarding the exposure of students to the intervention through the use of a direct and reliable measure, such as observations or self-report. All studies reported implementation fidelity through the entire intervention and for each intervention agent, setting, and participant.

Internal Validity. The three studies met the first, second, and third quality indicator regarding internal validity. All studies had researchers who controlled and systematically manipulated the independent variable. The two single-subject studies (Cook et al., 2012; Sanford & Horner, 2013) provided and described baseline conditions, and the group study design

(Wills et al., 2010) provided conditions regarding the curriculum, instruction, and interventions. Researchers ensured that all control/comparison groups or all baseline-condition participants had no or very limited access to the treatment intervention. The fourth indicator regarding internal validity was applicable only to the group study (Wills et al., 2010). The study met this quality indicator by indicating group placement through a random measure. The fifth, sixth, and seventh quality indicator applied only to single subject designs. Both single subject studies (Cook et al., 2012; Sanford & Horner, 2013) met the fifth quality indicator by providing three or more demonstrations of experimental effects at three different times throughout the course of the study. Both met quality indicator six by including at least three data points during baseline or justified reasons for not doing so (Sanford & Horner, 2013). By being properly designed and carried out, both single subject studies met quality indicator 6.7. This indicator was not applicable to group designs. Indicators 6.8 and 6.9 were only applicable to group designs (Wills et al., 2010) and this study did not meet either one. Information regarding attrition across groups or between groups was not indicated, and no information regarding attempts to control for it was given in the study.

Outcome Measures/Dependent Variables. By having socially important outcomes in the form of learning outcomes related to reading, all three studies met quality indicator 7.1. Clear definitions and measurements of the dependent variable resulted in all three studies meeting quality indicator 7.2. Each study provided information regarding effects of the intervention on all measures of the outcome focused on in the review and provided data needed in order to calculate effect size. Therefore, all studies met quality indicator 7.3. Frequency and timing of outcome measures were appropriate and at least three data points were provided for each phase of the intervention for both single subject designs (Sanford & Horner, 2013; Cook et

al., 2012). All studies met quality indicator 7.5 by providing evidence of interobserver reliability equal to or greater than 80%. Quality indicator 7.6 only applied to the group study (Wills et al., 2010). The study did not meet this quality indicator as no evidence was provided regarding validity.

       Data Analysis. Quality indicator 8.1 applied to only the group study (Wills et al., 2010). Data analysis techniques included descriptive statistics including mean and standard deviations, visual inspection of the means for DIBELS subtests across grades 1-3, ANOVA tests for the slopes for nonsense word fluency (first grade) and oral reading fluency (first-third grades, and ANOVA tests for the Woodcock Reading Mastery Test. Because these analysis techniques are appropriate for a quasi-experimental design, indicator 8.1 was met. Both single subject designs (Cook et al., 2012; Sanford & Horner, 2013) provided graphs that clearly represented outcome data throughout all phases for each participant in the study. All graphs were clear enough for the reviewer to draw basic conclusions about experimental control using traditional visual analysis techniques. Last, by providing appropriate data in order to calculate effect sizes for all outcomes relevant to the review, the group study (Wills, et al., 2010) met the final quality indicator. This indicator was not applicable to single research designs.

Discussion

       This review identified three studies that involved the use of reading interventions on students with or at risk for EBD. According to the studies, several conclusions can be drawn regarding the use of reading interventions and students with or at risk of EBD. These conclusions include: (a) positive results reported in all studies (i.e. publication bias); (b) variability in dependent measures; (c) studies met majority of quality indicators created by CEC (2014); (d) lack of studies addressing reading interventions for students with or at risk of EBD.

Positive Results in All Studies

The effects reported in the studies reviewed indicate that reading interventions for students with or at risk for EBD are positive. For instance, the study by Cook et al. (2012) was effective in utilizing an intervention which focused on repeated reading of one minute nonfiction passages and a peer-tutoring and feedback system. Decoding instruction, which targeted the alphabetic principle, was also part of the intervention and was designed to target phonics and phonemic awareness skills. These combined strategies produced a positive increase in participants' oral reading fluency. Positive results were also seen in regards to behavioral performance, nonsense word fluency, amount of reading time, and response rates. The positive findings presented in this review indicate a need for continued development of interventions that target reading and behavioral growth of students with or at risk for EBD.

Variability in Dependent Measures

Each study within this review varied on the type of assessment measure chosen. Measures included oral reading fluency within the specified curriculum, norm referenced reading assessments, and curriculum based measurements. In having a variety of literary focuses, it is no surprise that various measures were utilized across assessments. Measures chosen for each study were appropriate to measure desired outcome(s).

Quality Indicators

All three of the studies (Wills et al., 2010; Cook et al., 2012; Sanford & Horner, 2013) met the majority of quality indicators outlined by the Council for Exceptional Children (CEC; 2014). While the CEC indicates that studies must meet all indicators specified for the particular research design to be considered methodologically sound, one can assume that because all three studies met at least 87% of the quality indicators outlined (21/24), they are of high quality.

Small Number of Studies

Considering the number of databases and journals that were searched for this review, an overwhelmingly small number of studies were eligible for inclusion. This is especially surprising considering the reading problems of students with EBD. It is apparent that more single case studies as well as more group studies are needed in order to obtain a better understanding of how best to serve students with or at risk of EBD. This is also imperative to ensure that literacy outcomes of these students can be increased.

Limitations

Several limitations exist regarding this review. First, inclusion criteria set forth in the meta-analysis by Benner et al. (2010) allowed for numerous studies to be narrowly disqualified from this review. As a result, articles that may have produced insight on the relationship between reading performance and students with or at risk of EBD were dismissed. Second, no additional researcher was available to provide inter-observer agreement on the coding of the articles. Therefore, it is possible that errors were made, and all findings should be interpreted with caution. Finally, because only a small number of studies were identified, limitations exist on the generalizability of the research.

Summary

Findings of this review imply that literacy interventions targeting students with or at risk of EBD are successful in increasing various areas of reading performance. At the same time, one must pause upon examination due to a failure of examined research studies to meet all quality indicators developed by CEC (2014) in an effort to identify methodologically sound studies. High variability with dependent measures is a preface to a long list of reading skills. As a result of the variation, positive outcomes are spread thin amongst various skill areas rather than

compounded within one particular skill area, such as comprehension.   A small number of

studies indicate a need for research designed to target literacy needs amongst this at-risk

population within the school setting. Evidence presented is in favor of such intervention.

Chapter 3 - Methods

The purpose of this study was to explore what effects an early literacy program had on both academic and behavioral outcomes of first grade students identified as being at risk in both reading and behaviors and who were nonresponsive to previous school-wide interventions. The study consisted of a multiple-probe design (Baer, Wolf, & Risley, 1968; 1987; Horner & Baer, 1978) with three distinct phases: Baseline, Intervention, and Post Intervention. All three phases included direct and indirect measures of assessment. Baseline included teacher ratings as indirect measures. Direct measures consisted of curriculum based measurement and classroom observations. The Intervention Phase involved direct measures including curriculum based measurement and classroom observations. Post Intervention consisted of direct measures involving classroom observations and curriculum based measurement. Indirect measures included teacher ratings.

Participants, Setting, and Materials

Student Participants

Participants included first-grade students who attended a local public elementary school in the general education setting and who had not responded to school-wide literacy and behavior interventions. To be included, students had to exhibit high levels of risk as corroborated by scores on the Student Risk Screening Scale (SRSS: Drummond, 1994) and be performing in the bottom third of their class in terms of early literacy skills as indicated by student performance on the DIBELS (Kaminski & Good, 2011). Once the researcher gained IRB approval, individual meetings were held during parent teacher conferences in order to explain the proposed study and obtain parent permission for eligible students to participate. Parent permission was obtained for

all five students who were eligible. Student assent was then obtained from all five participants.

 Devon. "Devon" was a 7-year-old African American male who began receiving special education services approximately two months before the beginning of the study. Primary supports put into place as a result of his individualized education plan included behavior support within the general education classroom for a total of 150 minutes per day. Devon's full scale IQ score on the Wechsler Intelligence Scale for Children – Fourth Edition (WISC-IV; Wechsler, 2003) was a 93. The WISC-IV was administered on October 7, 2014 by the school psychologist. When given the Measures of Academic Progress (MAP; Thum & Hauser, 2015) reading test in January, 2015, Devon scored a 168, which placed him in the 42nd percentile amongst his same-aged peers. MAP is a research based computerized assessment that actively adjusts to student performance and produces valid and reliable measures of student growth over time. Devon's composite score on the DIBELS assessment was a 51 and at the 9th percentile nationally, placing Devon well below benchmark for first grade. According to his classroom teacher, Devon rarely demonstrated behaviors such as stealing, lying, cheating, and sneaking. He occasionally had a negative attitude, and he frequently was a behavior problem, experienced peer rejection, displayed low academic achievement, and exhibited aggressive behavior. According to teacher ratings on the SRSS, Devon was considered "high risk" for EBD.

 Alex. "Alex" was a 7-year-old Caucasian male who did not receive any special education services at the time of the study. An IQ score was unavailable. When given the Measures of Academic Progress (Thum & Hauser, 2015) reading test in January, 2015, Alex scored a 179, which placed him in the 71st percentile amongst his same-aged peers. Alex's composite score on the DIBELS assessment was a 92 and at the 23rd percentile nationally, placing Alex well below benchmark for first grade. According to his classroom teacher, Alex rarely lied, cheated,

acted sneaky, or displayed low academic achievement. He occasionally exhibited aggressive behaviors and frequently was a behavior problem, experienced peer rejection, and had a negative attitude. According to teacher ratings on the SRSS, Alex was considered "high risk" for EBD.

Wyatt. "Wyatt" was a 7-year-old Caucasian male who did not receive any special education services at the time of the study. An IQ score was unavailable. When given the Measures of Academic Progress (Thum & Hauser, 2015) reading test in January, 2015, Wyatt scored a 155, which placed him in the 11th percentile amongst his same-aged peers. Wyatt's composite score on the DIBELS assessment was a 119 and at the 34th percentile nationally, placing Wyatt below benchmark for first grade. According to his classroom teacher, Wyatt rarely lied, cheated, or acted sneaky, experienced peer rejection, or performed low academically. He occasionally exhibited aggressive behaviors and displayed a negative attitude. He frequently was a behavior problem. According to teacher ratings on the SRSS, Wyatt was considered "high risk" for EBD.

Luke. "Luke" was a 6-year-old Caucasian male who turned seven in April during the course of the study. He did not receive any special education services at the time of the study. An IQ score was unavailable. When given the Measures of Academic Progress (Thum & Hauser, 2015) reading test in January, 2015, Luke scored a 162, which placed him in the 26th percentile amongst his same-aged peers. Luke's composite score on the DIBELS assessment was a 99 and at the 25th percentile nationally, placing Luke well below benchmark for first grade. According to his classroom teacher, Luke rarely demonstrated behaviors such as stealing or experienced peer rejection. He occasionally performed low academically, displayed a negative attitude, and exhibited aggressive behaviors. He frequently lied, cheated, or acted sneaky and

was a behavior problem. According to teacher ratings on the SRSS, Luke was considered "high risk" for EBD.

Marc. "Marc" was a 6-year-old Caucasian male who did not receive any special education services at the time of the study. An IQ score was unavailable. When given the Measures of Academic Progress (Thum & Hauser, 2015) reading test in January, 2015, Marc scored a 154, which placed him in the 11th percentile amongst his same-aged peers. Marc's composite score on the DIBELS assessment was a 51 and at the 9th percentile nationally, placing Marc well below benchmark for first grade. According to his classroom teacher, Marc rarely lied, cheated, or acted sneaky but was often a behavior problem. He frequently performed low academically and displayed a negative attitude. According to teacher ratings on the SRSS, Marc was considered "high risk" for EBD.

Adult Participants

There were a total of four first grade teachers at one of the local public elementary schools where the study took place. All four were potential candidates for leading the proposed intervention with three who volunteered to participate. One of the four teachers was unable due to an upcoming extended leave of absence that would have interfered with her responsibilities during the course of the study. One of the first grade teachers (Teacher A) had just entered her seventh year of teaching. She obtained her Bachelor's of Science in Elementary Education at a local university and was pursuing her Master's Degree in special education at the same institution. She had an English as a Second Language endorsement as part of her current teaching license. She was twenty-eight years old and identified herself as Black, White, and Japanese. She had 21 first grade students in her classroom.

The second first grade teacher (Teacher B) was in her fourth year of teaching at the public elementary school. She obtained her Bachelor's of Science in Elementary Education from a local university and also held an endorsement in English as a Second Language. She was not pursuing another degree. She was twenty-eight years old and identified herself as White. She had 19 students in her first grade classroom.

The third first grade teacher (Teacher C) was in her seventh year of teaching at the public elementary school. She obtained her Bachelor's of Science in Elementary Education from a local university and also held an English as a second language endorsement. She was not pursuing another degree. She was thirty-one years old and identified herself as White. She had 18 students in her first grade classroom.

Setting

This study took place in a rural, public elementary school in the Midwestern United States. As of September, 2014, the school had a total of 599 students in grades kindergarten through sixth. There were a total of 74 kindergarten students, 80 first grade students, 82 second grade students, 70 third grade students, 65 fourth grade students, 59 fifth grade students, and 68 sixth grade students. The student population consisted of 50% males and 50% females. Sixty percent of the student populations were White, 2% were Native Hawaiian, 4% were Asian, 7% were African American, 15% were Hispanic, and 12% identified themselves as two or more races. Regular education students made up 83% of the population, with 17% being special education students. There were also 58 active students receiving English as a Second Language services within the school. Twenty-one percent had reduced fees for lunches, while 46% qualified for a free lunch.

All sessions of the reading intervention took place in the students' general education

classrooms. Each classroom contained literacy centers throughout along with early literacy

posters on the walls. Centers included activities such as guided reading groups, word work,

writing, sight words, listening, book box, nursery rhymes, and poetry. Desks were arranged in

clusters or rows with a carpeted area at the front of the classroom used for whole group literacy

instruction and read aloud. Each classroom contained bookshelves with literacy materials and a

small table for guided reading work. Throughout the course of this study, the guided reading

curriculum was replaced with systematic phonics instruction.

Materials

All students in each first grade classroom were screened by the classroom teacher for

inclusion in the study using the Student Risk Screening Scale (SRSS; Drummond, 1994).

Classroom teachers also reported on level of standing amongst the class in regards to early

literacy skills obtained from DIBELS (2010). Once students were identified as eligible, parents

and students had to agree to participate in the study. John Shefelbine's *Phonics Chapter Books*

(1998) served as the systematic phonics intervention delivered by classroom teachers. Nonsense

word fluency probes and oral reading fluency probes from AIMSweb (Pearson, 2012) were used

to monitor oral reading fluency and nonsense word fluency growth.

Dependent Variables, Procedures, and Social Validity

Dependent Variables

Oral Reading Fluency (ORF). Oral Reading Fluency was calculated using curriculum

based measurements for progress monitoring. All oral reading fluency probes were taken from

AIMSweb (Pearson, 2012), an online database which contains a collection of research-based

valid and reliable curriculum based measurements.   All students were asked to individually

read the passage out loud while the classroom teacher recorded errors involving substitutions, omissions, hesitations, and mispronunciations. For the purposes of this study, oral reading fluency was defined as the number of words read correctly per minute (Shinn, 1989). It was calculated by taking the number of words read correctly in the passage and dividing that number by 60. According to Fuchs and Fuchs (1993), the average slope of improvement for students in first grade is two words per week. This average rate was used as a determinate to move between phases. A substantial amount of research has established that oral reading fluency, when defined as the number of words read correctly per minute, is a worthy indicator of children's overall reading skills development (Fuchs, Fuchs, Hosp, et al., 2001; Jenkins & Jewell, 1993; Stahl & Kuhn, 2002; Wiley & Deno, 2005; Yovanoff, Duesbery, Alonzo, & Tindal, 2005). Research has also shown a strong concomitant relationship between oral reading fluency and reading comprehension, specifically for students in the primary grades (Buck & Torgeson, 2003; Cook, 2003; Good et al., 2001; Hudson, & Torgesen, 2008; Roberts, Good, & Corcoran, 2005; Roehrig, Petscher, Nettles, 2008).

Nonsense Word Fluency (NWF). This curriculum based measure was one of two reading measurements used to track growth in early literacy skills throughout the intervention phases. In this particular study, the NWF curriculum based measure taken from AIMSweb (Pearson, 2012) was utilized to determine word attack skills of each student. Nonsense word measures are considered to be a good indicator of the alphabetic principle because pseudowords have no lexical entry and provide a rather wholesome assessment of students' ability to apply grapheme-phoneme knowledge in decoding (Rathvon, 2004). This particular subtest required that students decode two to three letter nonsense words (i.e., "wuf," "zap," and "ip"). The number of correct phonemes a student was able to read per minute was recorded.

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Total Disruptive Behaviors (TDB). Total disruptive behaviors were considered behaviors that interrupted the classroom setting and those which adversely affected instructional activities. Examples of disruptive behavior included: leaving one's seat without permission from classroom teacher; touching another student's property, hitting, slapping others; any noise that can be heard other than those related to instruction (e.g. comments, cursing); and/or noncompliance with teacher directions. TDB was measured by recording the presence of previously mentioned disruptable behaviors during one minute intervals. Ten-minute observations were conducted during systematic phonics instruction in an effort to record evidence of such behaviors using partial interval recording (See Appendix B). The researcher was responsible for observing research participants during instruction and placing a zero on the data sheet if any of the above listed behaviors were displayed during each interval. If no evidence of a behavior was displayed, an X was placed on the recording sheet. A vibrating timer was used to indicate the passage of time and would vibrate every minute, which cued the researcher to mark the data sheet. The researcher sat at the intervention table to ensure full view of all research participants.

Procedures

Participant Selection. In order to select participants, all four first grade teachers were asked to complete the SRSS (Drummond, 1994) on all students in their first grade classroom. Despite her known absence, the fourth teacher was asked to complete the scales as well in order to determine the eligibility of the students within her classroom. The SRSS is a screening tool that lists seven various behaviors used to rate students in an effort to establish student risk for anti-social behaviors (Lane, Kalberg, Bruhn, Driscoll, Wehby, & Elliott, 2009), those of which are commonly displayed by students with EBD. The SRSS is a screener that has been deemed

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both reliable and valid when used to identify students who are at-risk for developing anti-social behaviors (Lane, Parks, Kalberg, & Carter, 2007) and can be completed in a fairly simple manner by a general education teacher (Lane et al., 2009). In addition to being identified as at-risk for EBD, students had to be performing in the bottom third of their class in terms of early literacy skills as evidenced by DIBELS score reports and be considered unresponsive to school wide literacy and behavior interventions previously tried during the current school year. Once students were identified, parental consent as well as child assent was acquired. After an agreement of participation was obtained, the researcher randomly assigned the participants to one of three intervention groups in order for students to participate in a multiple probe study. Three groups were utilized in an effort to keep intervention groups to no more than two students and as a result of scheduled reading times and availability of the researcher.

Assessment Training. Once students were identified and consent and assent obtained, classroom teachers participated in approximately two hours of assessment training provided by the researcher. Topics included direct observation and curriculum-based assessment procedures. More specifically, training was provided regarding how to conduct and score curriculum based measures involving oral reading fluency (correct words per minute, CWPM; Shinn, 1989) and the nonsense word fluency (NWF) measurements from AIMSweb (Pearson, 2012). The classroom teachers were provided opportunities to work with video-taped segments of students (Walker & Severson, 1992) so that procedures to conduct behavior observations involving total disruptive behaviors (TDB) for the classroom could be obtained. Scoring procedures as well as partial interval recording for behavior observations was also provided. Literacy and observation probes continued to be repeated until interobserver agreement scores reached at least 95% accuracy over the course of three consecutive trials. Throughout the study, meetings

approximately 30-45 minutes in length occurred weekly in an effort to reteach crucial elements such as observer drift, treatment integrity, and interobserver agreement (Campbell and Stanley, 1967; Kennedy, 2005). Reteaching of these elements using original training documents helped to minimize the threat of extraneous variables to the internal validity of the research study (Kennedy, 2005).

Baseline. Baseline data were collected by the classroom teachers utilizing the nonsense word fluency and oral reading fluency probes of AIMSweb (Pearson, 2012). Data were collected regarding total disruptive behaviors during 10 minute observation sessions during small group reading instruction. These observations were conducted by the researcher. Due to time constraints, a minimum of three baseline data points were collected concurrently for each group of students in an effort to establish a stable baseline (Sidman, 1960). Data points were collected every three days throughout the course of the study. Once a stable level, trend, or variability was established in regards to early literacy behaviors, the researcher and classroom teachers began the intervention. Due to specificity of the behavior (Kazdin, 1979), a higher variability among the behavioral variables was expected. Consequently, multiple instances were anticipated to show that a stability of TDB and NSI would not be realized during the baseline phase before introducing the intervention. Random order was used to establish which group of participants went first.

Intervention. Each intervention group participated in 28 lessons. Each lesson lasted thirty minutes and occurred daily until 14 hours of intervention instruction had been delivered. John Shefelbine's *Phonics Chapter Books* (Shefelbine, 1998) were used to deliver intervention instruction. During the intervention phase, students were administered an oral reading fluency and nonsense word fluency probe once every three days by the classroom teacher. Observations

were conducted every third day by the researcher during systematic phonics instruction to monitor total disruptive behaviors using partial interval recording (Kennedy, 2005). A treatment integrity checklist was developed detailing specific criteria for each phonics lesson delivered. Treatment integrity for this phase was conducted by the researcher and classroom teacher, and a score was calculated by summing the completed steps, dividing by the total number of steps and multiplying by 100.

Post. Once 28 of Shefelbine's lessons were delivered, students resumed instruction that was delivered prior to the intervention. Data collected during the baseline and intervention phases continued to be collected every third school day after this point in the same manner for an additional three data points and again approximately one month after the conclusion of the intervention phase.

Data Analysis. As in other multiple baseline designs, visual inspection of the data was used to evaluate treatment outcomes. Because this type of analysis is prone to Type I errors (Creswell, 2012), other methods of data analysis were conducted. In particular, mean score comparisons across phases as well as effect size calculations were utilized.

Mean scores comparisons are one element of the Time Series Analysis (TSA) method (Fisch, 1998; Velicer & Harrop, 1983). When a change in mean scores occurs between phases, a change in behavior is indicated, while a change in slope, or trend line, indicates both within and between phase changes in behavior (Gresham, 1998).

Effect sizes are another method of identifying intervention outcomes. In this study, the Standard Mean Difference (SMD; Busk & Serlin, 1992), which is a variation of Cohen's d statistic, was calculated by subtracting the mean of the baseline from the mean of the

intervention phase and then dividing by the pooled standard deviation (See Appendix C). This

particular method can be used for calculating effect sizes for each individual student, as well as

for the overall treatment effect across students. Effect sizes were calculated at the individual

level and not group level due to the fact that when using single case study design, intra-

individual behavior changes are often disregarded as error in group design (Lane,

O'Shaughnessy, Lambros, et al., 2001).

Treatment Integrity. In order to ensure treatment integrity (Gresham, MacMillan,

Beebe-Frankenberger, & Bocian, 2000) each lesson delivered by classroom teachers followed an

outlined procedural checklist (See Appendix D). The outline included re-reading of the previous

chapter, activities in oral blending, introduction of new sounds, reviewing sounds, blending

words, introduction of high frequency words, a review of high frequency words, reading the new

chapter, and dictation and writing. Treatment integrity data was collected by the classroom

teachers for 100% of the intervention sessions. In addition, the researcher collected treatment

integrity data for 10% of the sessions. Treatment integrity was calculated by summing the

completed steps in the lesson and dividing that number by the total number of steps and then

multiplying by 100.

Interobserver Agreement. Interobserver agreement (IOA) was collected for

approximately 25% of the probes administered (Kennedy, 2005) as well as at least once during

every phase of the study for each student. Once the researcher and classroom teachers reached

95% agreement on a collection of video observation examples, both the classroom teachers and

researcher began collecting direct observation data from lessons. IOA was calculated for

nonsense word fluency and oral reading fluency by dividing the number of agreements by the

total number of agreements plus disagreements and then multiplying by 100 (Kazdin, 1982). For

total disruptive behaviors, IOA was calculated based upon agreement of number of intervals with

an instance of the undesired behavior divided by total number of intervals.

Social Validity. At the conclusion of the study, social validity was assessed through an

independent evaluation by the participating teachers (Kazdin, 1977; Wolf, 1978). The IRP-15

(Martens et al., 1985) contains a 15-item scale (See Appendix E) which evaluates the treatment

acceptability from the teacher perspective (Kennedy, 1992). Each teacher was asked to complete

the 15 statements, which pertained to intervention procedures and outcomes. This particular

instrument uses a 6-point Likert rating scale ranging from *strongly disagree* (1) to *strongly agree*

(6). Total point values can range from 15-90. High scores signify a high level of acceptability,

with the measure overall having a strong reliability and internal consistency (Lane et al., 2009).

Chapter 4 - Results

This study examined the effectiveness of an early literacy program for first-grade students who have been identified as at-risk in the areas of reading and behaviors. The study was conducted in three phases: (a) baseline, (b) intervention, and (c) post intervention. The intervention phase consisted of the delivery of systematic phonics instruction in an attempt to produce previously obtained study results on the effects of the same intervention on behavior in the classroom, nonsense word fluency, and oral reading fluency. Interobserver agreement was conducted across the study to determine reliability of the observations. Finally, treatment fidelity and social validity measures were conducted. Results are presented to include overall findings, followed by individual results for each participant.

Eligibility

As mentioned previously in Chapter 3, all students in each first grade classroom were screened by the classroom teacher for inclusion in the study using the Student Risk Screening Scale (Drummond, 1994). Classroom teachers were also asked to report on level of standing amongst the class in regards to early literacy skills obtained from DIBELS (2010) testing. All students considered at "high risk" for EBD according to the SRSS, who performed in the lower one-third of their class on DIBELS testing, and those nonresponsive to previous school wide interventions were eligible and invited to participate.

Academic Outcomes

The first question in this study addressed whether or not an early literacy program would influence academic outcomes of first grade students identified by classroom teachers as being at risk in both reading and behaviors and who were nonresponsive to previous school-wide

interventions. Upon the completion of the SRSS by classroom teachers, baseline, intervention, post intervention, and follow up data were collected on the oral reading fluency and nonsense word fluency performance of each participant. The number of data points varied per participant due to time factors out of the researcher's control. Results are presented to include both overall findings and then individually for each participant.

Oral And Nonsense Word Fluency

Baseline. Oral and nonsense word fluency were measured during regular class sessions, specifically during guided reading groups. At the conclusion of group activities, the classroom teacher would orally test each individual student. Baseline data was collected over three guided reading group sessions, occurring every three days. Mean percentage of oral reading fluency for the participants (n=5) was lower (M =22 CWPM, range = 14 to 37 CWPM) than nonsense word fluency (n=5, M=47 CLS, range = 32 to 61 CLS) at the onset of the study.

Intervention. The systematic phonics intervention was delivered consistently by all three classroom teachers on a daily basis for the duration of the study. The phonics intervention replaced guided reading instruction within the classroom for the duration of the intervention phase. Mean percentage of oral reading fluency for the participants (n=5) increased (M=27 CWPM, range = 16 to 54 CWPM) as did nonsense word fluency (n=5, M =54CLS, range = 32 to 91CLS) during the course of the systematic phonics intervention.

Post Intervention. At the conclusion of the intervention phase, students resumed guided reading instruction that was delivered prior to the intervention. Oral reading fluency as well as nonsense word fluency continued to be collected every third school day after the conclusion of the intervention for an additional three data points and again approximately one month after the

conclusion of the intervention. Data for this phase were only collected for two of the three participant groups as the end of the school year cut data collection short. Four points were collected for one group of participants (n=2). Six points were collected for the second group of participants (n=2), and only one able to be collected for the third (n=1). Mean percentage of oral reading fluency for the participants once again increased (*M*=36.76 CWPM, range = 16-86 CWPM) as did nonsense word fluency (*M* =61.29 CLS, range = 34-112 CLS).

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) was calculated by subtracting the mean of the baseline phase from the mean of the intervention phase and then dividing by the pooled standard deviation (Busk & Serlin, 1992). Effect sizes for the group as a whole were SMD for ORF= -0.68, SMD for NWF= -0.47, and SMD for TDB= -0.02.

The classroom teachers acted as the primary data collector for ORF and NWF. Treatment integrity was collected by all three classroom teachers for 100% of the intervention sessions. Additionally, the researcher collected treatment integrity data for 10% of the sessions. During each phase, treatment integrity was at 100%.

IOA was collected for approximately 38% of the probes administered as well as at least once during every phase of the study for each participant. Total agreement for ORF was IOA=90%, for NWF was IOA=78%.

Oral Reading Fluency

Devon (baseline). Baseline data were collected regarding Devon's ORF performance prior to the implementation of the systematic phonics intervention (See Figure 4.1). The mean of data in baseline for Devon was 16 correct words per minute (CWPM) with a range of 13-18 CWPM.

Devon (intervention). After three consecutive data points, the intervention was implemented with Devon. Despite the first three data points falling below baseline levels, the intervention showed an accelerating trend (M =16.56) overall. The data during intervention ranged from 7 to 36 CWPM with slight variation within the first four data points.

Devon (post intervention). At the conclusion of the intervention, an additional three data points were collected to explore sustainability of the changes experienced during the intervention phase. For Devon, a decelerating trend was observed with data ranging from 16-47 CWPM. However, an increase in the mean occurred (M =31.67) during the post-intervention phase.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for Devon's ORF was d = -0.20, which is considered a small effect.

Alex (baseline). Baseline data were collected regarding Alex's ORF performance prior to the implementation of the systematic phonics intervention (See Figure 4.1). The mean of data in baseline for Alex was 23.33 CWPM with a range of 16-32 CWPM.

Alex (intervention). After three consecutive data points, the intervention was implemented with Alex. The intervention showed an accelerating trend (M = 17.22) despite all intervention points falling below the final data point of baseline. Large variation occurred within the first five data points, but then only varied slightly. The data during intervention ranged from 7-25 CWPM with slight variation within the first four data points.

Alex (post intervention). At the conclusion of the intervention, an additional three data points were collected to explore sustainability of the changes experienced during the intervention

phase. Again, a decelerating trend was observed with data ranging from 16-35 CWPM.

However, an increase in the overall mean ($M = 23.33$) occurred.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for

Alex's ORF was $d = 0.75$, which is considered a medium effect.

Wyatt (baseline). Baseline data were collected regarding Wyatt's ORF performance

prior to the implementation of the systematic phonics intervention (See Figure 4.1). The mean of

data in baseline for Wyatt was 37.67 CWPM with a range of 26-54CWPM.

Wyatt (intervention). After six consecutive data points, the intervention was

implemented with Wyatt. An immediate increase in performance was evident with slight

variation throughout the intervention. Overall, there was an accelerating trend in performance

throughout the intervention. The mean of data during intervention for Wyatt was 54.38 CWPM

with a range of 48-61 CWPM. One data point was missing from the intervention and was not

included in data due to unforeseen circumstances.

Wyatt (post intervention). At the conclusion of the intervention, an additional three data

points were collected to explore sustainability of the changes experienced during the intervention

phase. Overall, there was an accelerating trend in performance throughout the post intervention

phase with data ranging from 54-86 CWPM. An increase in mean ($M = 69.5$) also occurred from

the intervention to post intervention phase.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for

Wyatt's ORF was $d = -1.68$, which is considered a very large effect.

Luke (baseline). Baseline data were collected regarding Luke's ORF performance prior to the implementation of the systematic phonics intervention (See Figure 4.1). The mean of data in baseline for Luke was 19.12 CWPM with a range of 9-26 CWPM.

Luke (intervention). After six consecutive data points, the intervention was implemented with Luke. An immediate increase in performance was observed from baseline to intervention. Despite an increase in mean (M =28), a slight decelerating trend was observed throughout the intervention phase. The range of data for Luke was 23-35 CWPM. One data point was missing from the intervention and was not included in data due to unforeseen circumstances.

Luke (post intervention). At the conclusion of the intervention, an additional three data points were collected to explore sustainability of the changes experienced during the intervention phase. An accelerating trend was observed throughout the post intervention phase with data ranging from 28-38 CWPM. An increase in the mean (M =32.75) also occurred.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for Luke's ORF was d = -1.38, which is considered a very large effect.

Mark (baseline). Baseline data were collected regarding Mark's ORF performance prior to the implementation of the systematic phonics intervention (See Figure 4.1). The mean of data in baseline for Alex was 14.33 CWPM with a range of 8-22 CWPM.

Mark (intervention). After nine consecutive data points, the intervention was implemented with Mark. Despite a slight decrease in performance overall (M =18.1), an accelerating trend was observed with data ranging from 11-26 CWPM.

Mark (post intervention). At the conclusion of the intervention, only two additional data points were collected to explore sustainability of the changes experienced during the intervention phase for Mark. After two data points were collected, the school year ended. One data point was missing from the post intervention phase and was not included in data due to unforeseen circumstances. A single score of 21 CWPM was obtained.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for Mark's ORF was $d = -0.89$, which is considered a large effect.

Nonsense Word Fluency

Devon (baseline). Baseline data were collected regarding Devon's NWF performance prior to the implementation of the systematic phonics intervention (See Figure 4.2). The mean of data in baseline for Devon was 37.33 correct letter sounds (CLS) with a range of 28-42 CLS.

Devon (intervention). After three consecutive data points, the intervention was implemented with Devon. The mean of data in intervention for Devon was 45.67 CLS. Overall, an accelerating trend was observed with data ranging from 35-57 CLS.

Devon (post intervention). At the conclusion of the intervention, an additional three data points were collected to explore sustainability of the changes experienced during the intervention phase. Despite an increase in the mean ($M = 61.17$) from intervention to post intervention phases, a decelerating trend was observed during this phase with data ranging from 53-69 CLS.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for Devon's NWF was $d = -1.03$, which is considered a large effect.

Alex (baseline). Baseline data were collected regarding Alex's NWF performance prior to the implementation of the systematic phonics intervention (See Figure 4.2). The mean of data in baseline for Alex was 32.67 CLS with a range of 28-37 CLS.

Alex (intervention). After three consecutive data points, the intervention was implemented with Alex. Overall, a decelerating trend was observed in data. The mean of data remained constant at 32.56 CLS with no change indicated from baseline to intervention. The range of data in intervention for Alex was 18-43 CLS.

Alex (post intervention). At the conclusion of the intervention, an additional three data points were collected to explore sustainability of the changes experienced during the intervention phase. Despite an increase in the mean (M =35.67) from intervention to post intervention phases, a decelerating trend was observed during this phase with data ranging from 34-39 CLS.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for Alex's NWF was d = 0.02, which is considered a small effect.

Wyatt (baseline). Baseline data were collected regarding Wyatt's NWF performance prior to the implementation of the systematic phonics intervention (See Figure 4.2). The mean of data in baseline for Wyatt was 61.12 CLS with a range of 39-89 CLS.

Wyatt (intervention). After six consecutive data points, the intervention was implemented with Wyatt. Overall, an accelerating trend was observed throughout the intervention phase with a significant increase in mean (M =91) from the baseline phase. Data ranged from 73-110 CLS. One data point was missing from the intervention and was not included in data due to unforeseen circumstances.

Wyatt (post intervention). At the conclusion of the intervention, an additional three data points were collected to explore sustainability of the changes experienced during the intervention phase. An increase in the mean (M =104.5) from intervention to post intervention phases occurred, as well as an accelerating trend with data ranging from 90-112 CLS.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for Wyatt's NWF was d = -1.60, which is considered a very large effect.

Luke (baseline). Baseline data were collected regarding Luke's NWF performance prior to the implementation of the systematic phonics intervention (See Figure 4.2). The mean of data in baseline for Luke was 61.33 CLS with a range of 44-75 CLS.

Luke (intervention). After six consecutive data points, the intervention was implemented with Luke. Overall, a large amount of variation was observed throughout the intervention phase with data ranging from 47-70 CLS. A decrease in the mean (M = 59.5) was also observed from baseline to intervention. One data point was missing from the intervention and was not included in data due to unforeseen circumstances.

Luke (post intervention). At the conclusion of the intervention, an additional three data points were collected to explore sustainability of the changes experienced during the intervention phase. No change was observed in the mean score (M =56.5) from intervention to post intervention phases, with an accelerating trend being observed during this phase with data ranging from 44-71 CLS.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for Luke's NWF was d = 0.16, which is considered a small effect.

Mark (baseline). Baseline data were collected regarding Mark's NWF performance prior to the implementation of the systematic phonics intervention (See Figure 4.2). The mean of data in baseline for Mark was 40.67 CLS with a range of 33-51 CLS.

Mark (intervention). After nine consecutive data points, the intervention was implemented with Mark. Great variability in data was observed with data ranging from 16 to 50 CLS. A decrease in the mean (M =40.3) was also observed.

Mark (post intervention). At the conclusion of the intervention, only two additional data points were collected to explore sustainability of the changes experienced during the intervention phase before the conclusion of the school year. One data point was missing from the post intervention phase and was not included in data due to unforeseen circumstances. A single score of 62 CLS was obtained.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for Mark's NWF was $d = 0.07$, which is considered a small effect.
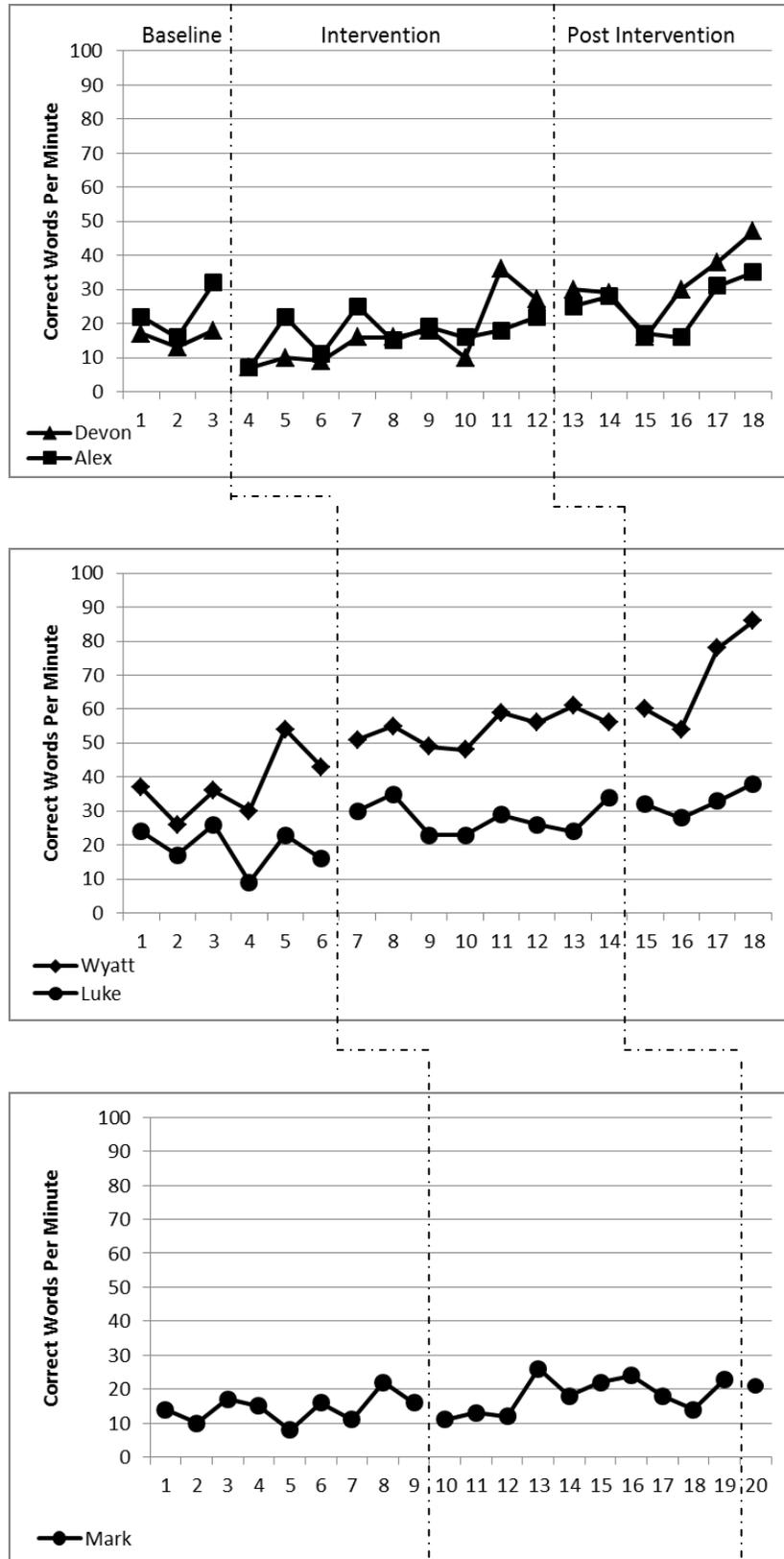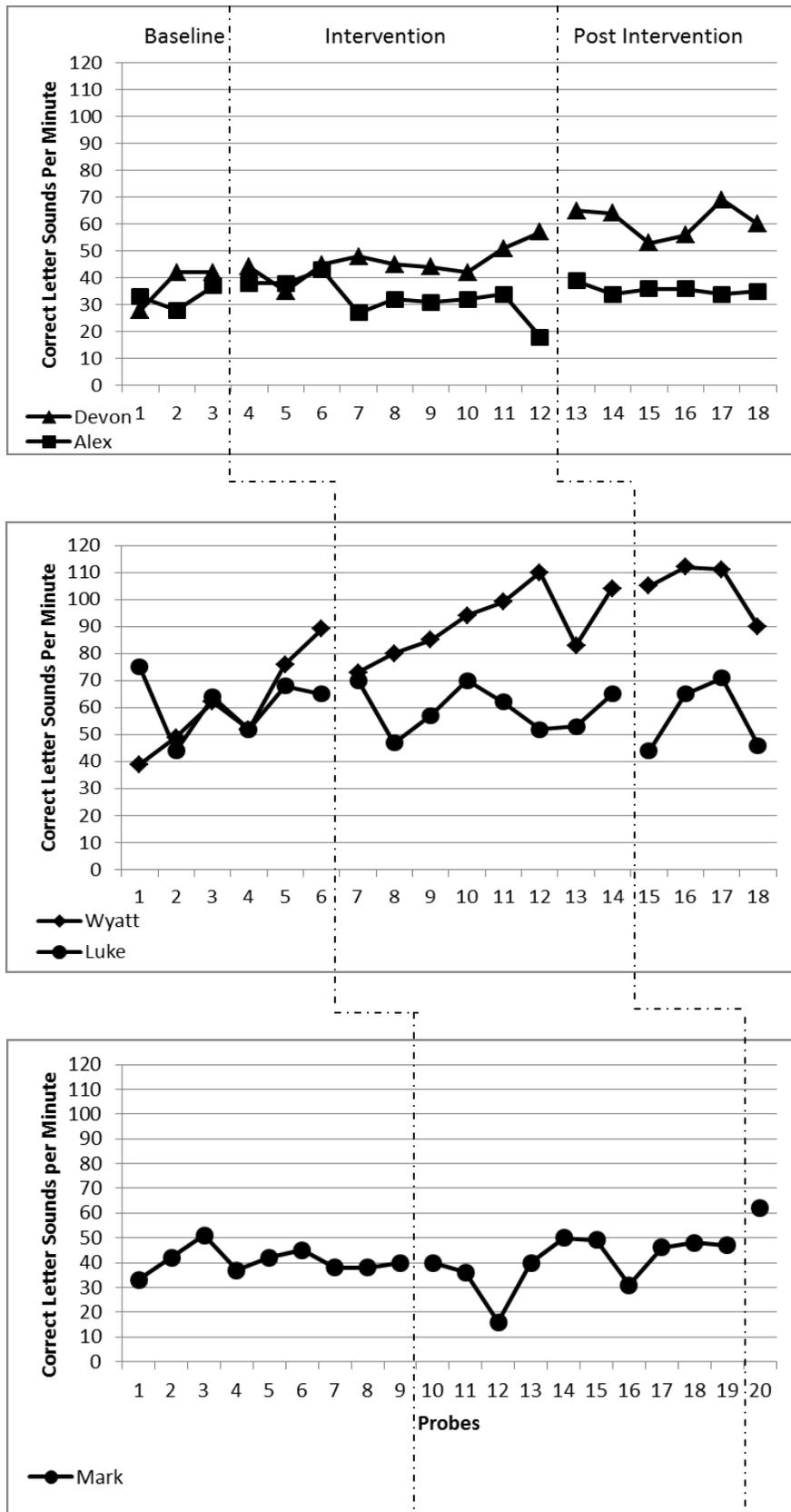
Figure 4.1 ORF for each participant.

Figure 4.2 NWF for each participant.

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Behavioral Outcomes

The second question addressed whether or not an early literacy program would influence behavioral outcomes of first grade students identified as being at risk in both reading and behaviors and who were nonresponsive to previous school-wide interventions. Upon the completion of the SRSS by classroom teachers, baseline, intervention, post intervention, and follow up data were collected on the total disruptive behaviors displayed per lesson by each participant. Once again, the number of data points varied per participant due to time factors out of the researcher's control. Results are presented to include both overall findings and then individually for each participant.

Total Disruptive Behaviors

Baseline. TDB observations were measured during regular class sessions, specifically during guided reading groups for a total of ten minutes. Baseline for all participants (n=5) was conducted over three guided reading group sessions, occurring every three days (*M*= 1.8, range .5-4.3).

Intervention. Ten minute observations continued to be conducted for all participants (n=5) throughout the intervention phase every three days during the delivery of the systematic phonics intervention. During the intervention, a slight decrease in behaviors (*M*= 1.6, range 0-4.1) was observed overall.

Post Intervention. At the conclusion of the intervention phase, ten minute observations were once again conducted during the delivery of guided reading instruction and were collected every three days after the conclusion of the intervention for three additional data points and again approximately one month after the conclusion of the intervention. Six points were collected for

one group of participants (n=2), four points for the second group of participants (n=2), and only one collected for the third (n=1). Frequency of behaviors remained constant. (*M*=1.6, range 0-6).

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) was calculated by subtracting the mean of the baseline phase from the mean of the intervention phase and then dividing by the pooled standard deviation (Busk & Serlin, 1992). As mentioned previously, effect sizes were figured for each individual participant and not for the group as a whole.

The researcher acted as the primary data collector for TDB. Treatment integrity was collected by all three classroom teachers for 100% of the intervention sessions. Additionally, the researcher collected treatment integrity data for 10% of the sessions. During each phase, treatment integrity was at 100%.

IOA was collected for approximately 33% of the behavior observations and as well as at least once during every phase of the study for each participant. Total agreement for TDB was IOA=75%.

Total Disruptive Behaviors

Devon (baseline). Baseline data were collected regarding Devon's behavior performance during guided reading instruction prior to the implementation of the systematic phonics intervention (See Figure 4.3). The mean of data in baseline for Devon was 4.33 TDB with a range of 3-7 TDB.

Devon (intervention). After three consecutive data points, the intervention was implemented with Devon. Great variability in data was observed with data ranging from 0 to 10 TDB. A decrease in the mean ($M = 3.3$) was also observed.

Devon (post intervention). At the conclusion of the intervention, three additional data points were collected to explore sustainability of the behavior changes experienced during the intervention phase for Devon. Once again, a decrease in the mean ($M = 1.83$, range 0-5) was observed with less variability overall.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for Devon's TDB was $d = 0.29$, which is considered a small effect.

Alex (baseline). Baseline data were collected regarding Alex's behavior performance during guided reading instruction prior to the implementation of the systematic phonics intervention (See Figure 4.3). The mean of data in baseline for Alex was 2 TDB with a range of 1-3 TDB.

Alex (intervention). After three consecutive data points, the intervention was implemented with Alex. Great variability in data was observed with data ranging from 0 to 8 TDB. An increase in the mean ($M = 4.1$) was also observed.

Alex (post intervention). At the conclusion of the intervention, three additional data points were collected to explore sustainability of the behavior changes experienced during the intervention phase for Alex. A slight decrease in the mean ($M = 3.12$, range 2-6) was observed.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for Alex's TDB was $d = -2.11$, which is considered a very large effect.

Wyatt (baseline). Baseline data were collected regarding Wyatt's behavior performance prior to the implementation of the systematic phonics intervention (See Figure 4.3). The mean of data in baseline for Wyatt was 0.5 TDB with a range of 0-1 TDB.

Wyatt (intervention). After six consecutive data points, the intervention was implemented with Wyatt. Overall, a decelerating trend was observed throughout the intervention phase with a slight decrease in mean ($M =0.11$) from the baseline phase. Data ranged from 0-1. One data point was missing from the intervention and was not included in data due to unforeseen circumstances.

Wyatt (post intervention). At the conclusion of the intervention, an additional three data points were collected to explore sustainability of the changes experienced during the intervention phase. A slight increase in the mean ($M =0.33$) from intervention to post intervention phases occurred with the range of data (0-1 TDB) remaining the same.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for Wyatt's TDB was $d = 0.65$, which is considered a medium effect.

Luke (baseline). Baseline data were collected regarding Luke's behavioral performance prior to the implementation of the systematic phonics intervention (See Figure 4.3). The mean of data in baseline for Luke was 1.67 TDB with a variable range of 0-7.

Luke (intervention). After six consecutive data points, the intervention was implemented with Luke. Overall, a smaller amount of variation was observed throughout the intervention phase with data only ranging from 0-2. A decrease in the mean ($M = 0.67$) was also

observed from baseline to intervention. One data point was missing from the intervention and was not included in data due to unforeseen circumstances.

Luke (post intervention). At the conclusion of the intervention, an additional three data points were collected to explore sustainability of the changes experienced during the intervention phase. A decrease was observed in the mean score ($M = .33$) from intervention to post intervention phases, with a slight decrease being observed during this phase with data ranging from 0-1 TDB.

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for Luke's TDB was $d = 0.41$, which is considered a small effect.

Mark (baseline). Baseline data were collected regarding Mark's behavioral performance prior to the implementation of the systematic phonics intervention (See Figure 4.3). The mean of data in baseline for Mark was 0.89 TDB with a range of 0-4 TDB.

Mark (intervention). After nine consecutive data points, the intervention was implemented with Mark. No variability in data was observed with data staying constant at 0 TDB. A decrease in the mean ($M = 0$) was also observed.

Mark (post intervention). At the conclusion of the intervention, only one additional data point was collected to explore sustainability of the changes experienced during the intervention phase for Mark. While two were originally scheduled to be collected, one point was to be collected on the last day of school. Reading groups were not held that day. Therefore, the last point could not be collected. No changes were observed from intervention to post intervention phase ($M = 0$).

Effect sizes, treatment integrity, and fidelity. Standard Mean Difference (SMD) for

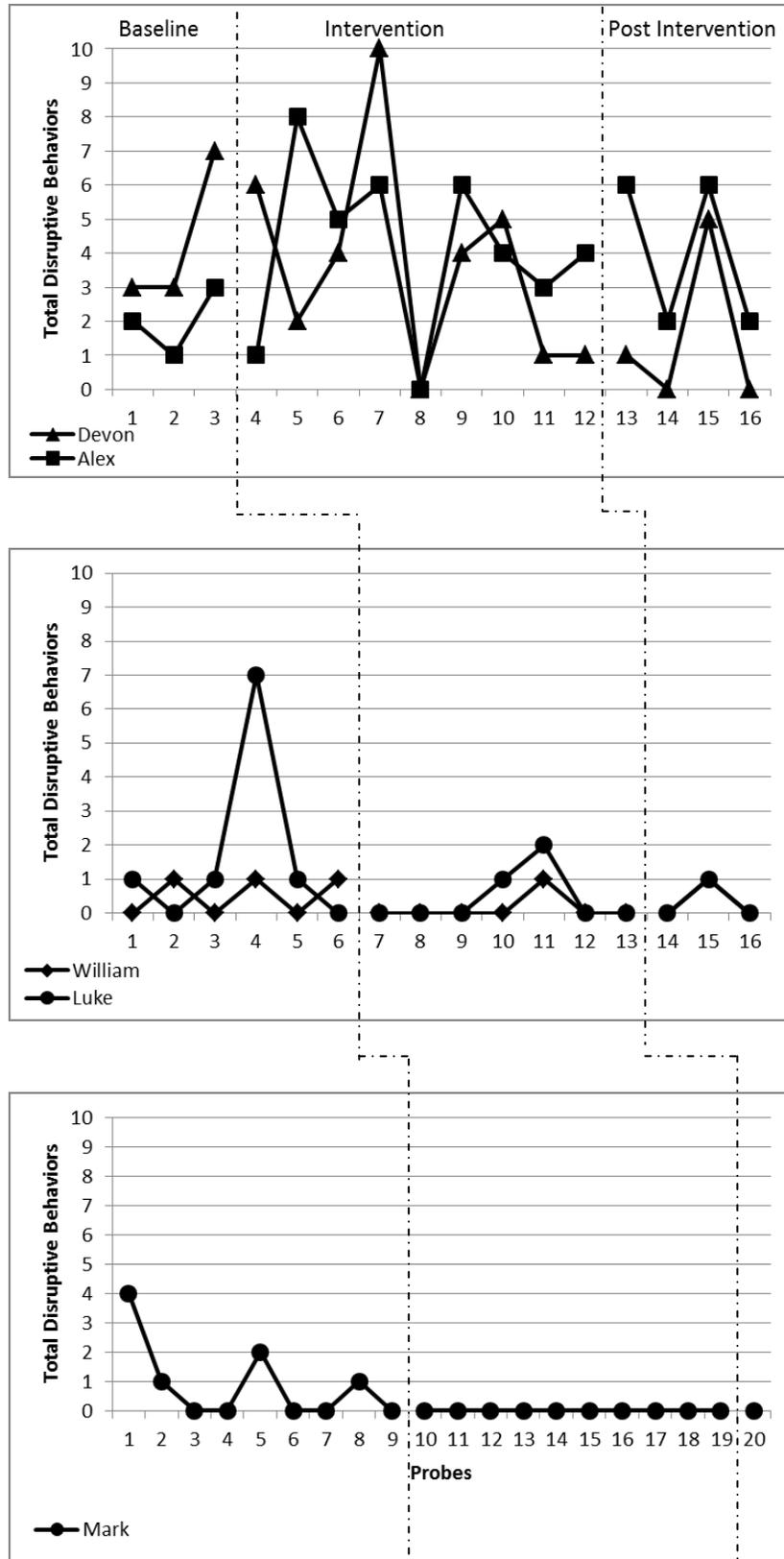Mark's TDB was $d = 0.65$, which is considered a medium effect.

Figure 4.3 TDB for each participant.

Treatment Integrity

Treatment integrity regarding implementation of the systematic phonics intervention during intervention phase was 100% for all students based upon integrity data collected by classroom teachers. Treatment integrity for all participants was also 100% during the observations conducted by the researcher for 10% of the sessions.

Social Validity

The general education teachers involved in the implementation of the systematic phonics intervention completed the IRP-15 (Martens et al., 1985). Scores on the IRP-15 can range from a low score of 15, indicating a low treatment acceptability to a high score of 90, indicating a high treatment acceptability. Teacher scores on this measure were a 75, 80, and 84 indicating a moderate to high treatment acceptability.

Summary of Findings

The purpose of this research was to examine the effectiveness of an early literacy program for first-grade students who were identified as at-risk by their classroom teachers in the areas of reading and behaviors. The study investigated two main research questions: (a) what effect does an early literacy program have on academic outcomes of first grade students identified by classroom teachers as being at risk in both reading and behaviors and who were nonresponsive to previous school-wide interventions and (b) what effect does an early literacy program have on behavioral outcomes of first grade students identified by classroom teachers as being at risk in both reading and behaviors and who were nonresponsive to previous school-wide interventions.

Literacy Outcomes

Examination of effect sizes indicated that three out of the five students made growth in their nonsense word fluency with effect sizes ranging from 0.02-0.16 (See Table 4.1). Mean score comparisons between baseline and intervention phases reveal that two of the five participants made growth going from the baseline to intervention phase (See Table 4.2). All four students on whom post intervention data was collected showed an increase in NWF from intervention to post intervention, while three of the four participants showed a decrease in NWF from post intervention to follow up.

In regards to ORF, effect sizes indicate that two of the five participants made growth with scores ranging from 0.76-1.39. Mean score comparisons between baseline and intervention phases, however, showed that four out of five students made growth in ORF. All five participants made growth from intervention to post intervention phases. Additionally, all four students on whom post intervention data was collected showed an increase in ORF from post intervention to follow up.

Behavioral Outcomes

Effect sizes reveal a decrease in disruptive behavior exhibited in the classroom for only one of the five participants (range: -2.11-0.65). Mean score comparisons between baseline and intervention phases, however, indicate that four out of five participants showed a decrease in TDB. Three out of five participants showed a decrease in TDB from intervention to post-intervention phases with one participant showing an increase and the other staying constant. From post-intervention to follow up, one of the two participants on whom data could be collected showed a decrease in TDB with the other showing an increase.

Table 4.1
Individual Effect Sizes

Students	Measure		
	NWF	ORF	TDB
Group 1			
Devon	-1.03	-0.2	0.29
Alex	0.02	0.76	-2.11
Group 2			
Wyatt	-1.61	-1.68	0.65
Luke	0.16	1.39	0.41
Group 3			
Mark	0.07	-0.89	0.65

Note. A dashed line (--) indicates that information was not reported.

Table 4.2
Mean Changes by Phase

Student	Phase	Measure		
		NWF M(SD)	ORF M(SD)	TDB M(SD)
Group 1				
Devon	Baseline	37.33 (8.08)	16 (2.65)	4.33 (2.31)
	Intervention	45.67 (6.08)	16.56 (9.51)	3.3 (3.16)
	Post Intervention	61.17 (5.98)	31.67 (10.33)	1.83 (1.94)
Alex	Baseline	32.67 (4.51)	23.33 (8.08)	2 (1)
	Intervention	32.56 (7.21)	17.22 (5.70)	4.1 (2.38)
	Post Intervention	35.67 (1.86)	23.33 (7.61)	3.12 (2.40)
Group 2				
Wyatt	Baseline	61.12 (18.54)	37.67 (9.93)	.5 (0.55)
	Intervention	91 (12.81)	54.38 (4.66)	.11 (0.33)
	Post Intervention	104.5 (10.15)	69.5 (15)	.33 (0.58)
Luke	Baseline	61.33 (11.31)	19.12 (6.37)	1.67 (2.66)
	Intervention	59.5 (8.60)	28 (4.78)	.67 (0.87)
	Post Intervention	56.5 (13.53)	32.75 (4.11)	.33 (0.58)
Group 3				
Mark	Baseline	40.67 (5.20)	14.33 (4.21)	0.89 (1.36)
	Intervention	40.3 (10.55)	18.1 (5.45)	0 (0.0)
	Post Intervention	62 (--)	21 (--)	0 (--)

Note. A dashed line (--) indicates that information was not reported.

Chapter 5 - Discussion

The intent of this study was to examine the effectiveness of an early literacy program for first-grade students who were identified as at-risk by their classroom teachers in the areas of reading and behaviors. This study also aimed to further develop existing research by attempting to systematically produce previously obtained results (Kennedy, 2005) from a prior study. Specifically, the study sought to examine what effects an early literacy program had on both academic and behavioral outcomes of first grade students identified by classroom teachers as being at risk in both reading and behaviors and who were nonresponsive to previous school-wide interventions. Academic sessions were carried out by three first grade classroom teachers, with the researcher collecting data regarding total disruptive behaviors during academic sessions. The study utilized a multiple-probe design (Baer, Wolf, & Risley, 1968; 1987; Horner & Baer, 1978) consisting of three phases: (a) baseline, (b) intervention, and (c) post intervention. This chapter will summarize the results of the study, provide implications for practice, and discuss the limitations and suggestions for future research.

Systematic Phonics and Literacy

Results of this study were consistent with previous research (Babyak, et al., 2000; Coleman & Vaughn, 2000; Harris, Marchand-Martella, & Martella, 2000; Lingo, et al., 2006; Malmgren & Leone, 2000; Marchand-Martella, et al., 2000; Polloway, et al., 1986; Rivera, et al., 2006; Scott & Shearer-Lingo, 2002; Shippen, et al., 2005; Wehby, Falk, Barton-Arwood, Lane, & Cooley, 2003) regarding the use of systematic phonics to improve literacy skills. Additionally, results obtained support those obtained by Lane et al. (2002) as mean score comparisons in the original study also revealed an increase in ORF and NWF for every child who completed the intervention. More specifically, the use of systematic phonics instruction

was effective in producing an increase in ORF for all five participants. Similarly, four out of the five participants experienced an increase in NWF. Taking into consideration Chall's (1996b) stages of reading development, it could be assumed that all five students were actively learning the relationships between letters and sounds. This learning process, in turn, may have allowed for the reading of simple text containing high frequency words and phonically regular words presented throughout the systematic phonics intervention resulting in an increase in ORF and NWF.

Systematic Phonics and Total Disruptive Behaviors

Results of this study are consistent with those of previous investigations (Lane et al., 2001; Lane et al., 2002; Stewart et al., 2007) in that improved early literacy skills are associated with ongoing decreases in disruptive classroom behavior (Lane et al., 2001). While all five students experienced growth in literacy skills throughout the phases of this study, four out of five experienced a decrease in levels of disruptive behavior displayed in the classroom as evidenced by mean changes. Results are similar to those obtained in the original study as conducted by Lane et al. (2002).

Systematic Phonics as a Practice in General Settings

Considering that less than 1% of students with or at risk for EBD receive special education services (IDEA, 2004), the chance that educators will encounter such a population of students is presumably quite high. Because nearly all students with EBD will spend the majority of their education, if not all of it, within the general education setting, teachers must assume the responsibility of meeting the needs of these students in terms of not only academics, but behaviors and social interactions as well (Lane et al. 2011). With an existing association between inappropriate behaviors and academic difficulties encountered by this population of

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students (Lane & Wehby, 2002; Ruhl & Berlinghoff, 1992), intensive remediation efforts to improve basic skills in reading (Lane, 2004) are needed. Arguably, for students with or at risk of EBD, teachers cannot address the issue of academic struggle without recognizing that of behavior challenges as well.

Multiple investigations support the use of systematic phonics instruction to increase early literacy skills (Adams, 1990; Anderson et al., 1985; Balmuth, 1982; Chall, 1967, 1996a, b; Ehri et al., 2001; NRP, 2000). Some research also suggests that interventions which focus on the remediation of academic skills may produce a collateral effect, which, in turn, reduces problem behavior (Coie & Krehbiel, 1984; DuPaul, Ervin, Hook, & McGoey, 1998). If such an effect exists, academic interventions may be useful in enhancing interventions largely used to address social behavioral deficits (Barton-Arwood et al., 2005; Lane, 1999). Researchers, as well, have found a positive correlation between reading disability and antisocial behavior (Miller & Windhauser, 1971; Sturge, 1982). Considering that research has established a link between reading and behavior difficulties, it only makes sense that schools address both issues consecutively (Stewart et al., 2007). The systematic phonics intervention explored throughout this study and that of the original (Lane et al., 2002) offers teachers a feasible and research based method for possibly improving both academic and social behaviors of their students (Algozzine et al., 2012).

Implications for Practice

While limited in number (Coleman & Vaughn, 2000; Levy & Chard, 2001), the scarce amounts of reading intervention studies that have been conducted with young students with EBD have revealed favorable results (Babyak et al., 2000; Cochran, et al., 1993; Falk & Wehby, 2001; Wehby, Falk, et al., 2003; Wehby, Lane, Falk, 2005).

Several studies have demonstrated that students with EBD and individuals with reading deficits are, in fact, capable of increasing their reading abilities-predominantly those related to improvements in comprehension, vocabulary, oral reading fluency, and accuracy of reading-using systematic, phonics-based instructional programs (Babyak, et al., 2000; Coleman & Vaughn, 2000; Harris, Marchand-Martella, & Martella, 2000; Lingo, et al., 2006; Malmgren & Leone, 2000; Marchand-Martella, et al., 2000; Polloway, et al., 1986; Rivera, Al-Ataiba, & Koorland, 2006; Scott & Shearer-Lingo, 2002; Shippen, et al., 2005; Wehby, Falk, Barton-Arwood, Lane, & Cooley, 2003). This study, in particular, demonstrated that students with reading deficits at risk for EBD are capable of increasing their oral reading fluency while at the same time decreasing their disruptive behaviors within the classroom.

Researchers have established numerous hypothetical models to explain the relationship between academic underachievement, specifically in reading, and behavior problems (Berger, et al., 1975; Hinshaw, 1992; Richards, et al., 1995). All proposed models are important to consider when designing interventions. In fact, "combining behavior support and effective instruction may be an important theme for school reform in the United States" (O'Shaughnessy, Lane, Gresham, and Beebe-Frankenberger, 2003, p. 382). Because strong correlations have been established between low academic achievement in reading and behavior problems (Heward, 2006), a need to integrate reading and behaviors into a cohesive model currently exists (Stewart, et al., 2007). Results from combined studies indicate improved academic performance and reduced behavior problems (Stewart et al., 2007). This study found systematic phonics instruction to be an effective method for increasing literacy skills of first grade students and of reducing disruptive behaviors displayed in the classroom setting during reading instruction.

In order to rise to the occasion, it is essential that educators are provided with feasible and supported methods for improving academic and social behavior as well as for delivering school, classroom, and individual support (Algozzine et al., 2012). Numerous intervention efforts to date have required significant and constant support from adults other than just the classroom teacher. This level of intervention is not sustainable in most settings, and it is vital that researchers and practitioners identify evidence-based practices that general education classroom teachers can implement solely on their own or with minimal support (Lane, Little, et al. 2007). This study allowed classroom teachers to deliver an evidence-based practice within their own classroom. Weekly support was also provided throughout the study resulting in a 100% fidelity rate overall. Research has confirmed that teacher fidelity of implementation of behavioral and academic interventions has a statistically significant effect on student responsiveness to the intervention (Benner, Beaudoin, et al., 2010; Benner et al., 2011).

Current research supports the idea that academic and behavioral supports must be interwoven. It is not enough to hope that children will learn appropriate behaviors as a result of literacy instruction and vice versa. While it is crucial to abstain from reactive practices when attempting to manage students' behavior, it is also imperative that schools abandon the "wait-and-see" model (Foorman et al. 1997) typical of many schools. In its place, schools must embrace a proactive approach for preventing reading problems in children at risk for developing EBD (Lane, Gresham, & O'Shaughnessy, 2002). When designing reading instruction, it would be wise for classroom teachers to consider the use of systematic phonics instruction as a key part. By delivering systematic phonics during reading instruction, there is a potential to not only increase reading skills but to decrease disruptive behaviors as determined by this study and the original (Lane et al., 2002).

Limitations of the Study

Despite favorable results in both literacy and behaviors obtained by all three classroom teachers, there are limitations to this study that should be considered. The first limitation is that students in each group were from the same class. The effects of previously established relationships between students were unknown but very well could have influenced the behaviors displayed by each individual participant. Furthermore, one group received instruction from a first grade teacher that was not their own. This occurred due to scheduling conflicts and the extended absence of one of the eligible teacher participants. It could be argued that behaviors displayed by Luke and Wyatt may have been influenced by the presence of a teacher with whom they were not familiar.

A second limitation pertains to the fact that one group of participants was actually a group of two containing one at risk student and one general education student who did not qualify for the study. Rather than have the participant in a group of one, the classroom teacher and researcher agreed to allow another general education student to participate in the lessons received by the participant. No data was collected on the student who did not qualify for the study. It could be that her behavior or lack thereof, considering she was not considered at-risk, very well could have influenced the behaviors displayed by the research participant.

A third limitation was that numerous differences existed between the original study and the current one. This was the case in regards to data collection prior to the beginning of the research study, data points collected per phase, the frequency with which the intervention was delivered, and the duration of the overall intervention and study. If the same study was carried out again under different circumstances and with more time, it is likely that different results

could be obtained. A more detailed description of all the changes that took place is outlined in Chapter 1.

A fourth limitation was that the available time did not allow for the completion of all phases of the intervention by all the research participants. As a result, the data does not reflect the completion of all phases for every participant. If enough time would have existed before the end of the school year, more information would have been available regarding the sustainability of changes experienced by all participants throughout the intervention phase once the intervention had ended.

Finally, even though students made progress in both the academic and behavioral domains as evidenced by data collected, there is no clear indication as to the extent to which early literacy skills obtained were generalized to the classroom. Additionally, no indication of behavioral growth was available beyond the walls of the classroom as behavioral data was not collected on the playground.

Recommendations for Future Research

This study found systematic phonics instruction to be an effective method for general education teachers to use to improve literacy skills and to reduce disruptive behavior in the classroom environment. Results from this study provide new directions for researching early literacy instruction as a reliable approach for instructing students in reading while also influencing displayed behaviors.

Future studies could be enhanced with the addition of generalization probes for early literacy skills in order to determine the magnitude to which the intervention affected daily performance in academic instruction. Generalization of changes in behavior could also be done through observations outside of the general education classroom in which literacy instruction

occurs to determine the extent to which literacy instruction affects behaviors beyond the classroom.

Because a concern regarding a lack of replication and the presence of bias in research exists (Cook, 2014), special education teachers must continue to methodically examine such concerns. As replication is necessary to scientific knowledge (Francis, 2012; Jasny et al., 2011; Lehrer, 2010), researchers are encouraged to attempt to replicate findings discovered through the limited amount of research regarding literacy and behaviors already uncovered (Wehby, Lane, Falk, 2005; Babyak et al., 2000; Cochran, et al., 1993; Falk & Wehby, 2001; Wehby, Falk, et al., 2003).

Exploration of other reading interventions proven effective with other populations of learners, such as those with learning disabilities or low academic achievement, is also encouraged. Such an approach has been previously declared as an ideal place to start (Coleman and Vaughn, 2000) and would assist with the need to empirically substantiate such methods within the EBD population prior to particular recommendations (Wehby et al., 2005).

Proactive approaches for preventing reading problems in children at risk for developing EBD (Lane, Gresham, & O'Shaughnessy, 2002) should also be investigated. Rather than waiting for students to struggle, research-based methods could be implemented and studied within the classroom setting to prevent the development of literacy and behavioral deficits.

Previous research indicates that students with EBD have low rates of positive teacher attention, such as academic talk, teacher praise, and opportunities to respond to academic requests (e.g., Van Acker, et al., 1996; Wehby et al., 1995). Avoidance of interactions is common for those considered problematic while teachers instead choose to focus their time and energy on students who display appropriate behavior (Carr, et al., 1991; Wehby et al.,1998).

Alarmingly, this may also be the case for students who are lower-achieving. Teachers may engage in fewer instructional interactions with lower-achieving students, regardless of whether or not these students display inappropriate behaviors. This is due to the fact that interactions with lower-achieving students are less reinforcing to teachers due to the learning challenges that surround classroom interactions (Greenwood, 1996). Researchers are encouraged to investigate teacher-student interactions that take place within general education classrooms so that teacher preparation can better equip educators with strategies that will help them reach their most difficult students.

Students with EBD are being placed in general education classrooms with teachers who are ill-prepared to meet the challenge (Sutherland & Snyder, 2007). Students with EBD do not receive much needed support by educators who are absent training and/or needed assistance in order to deliver evidence based classroom instruction and behavior management techniques (Lane et al., 2011). Researchers are advised to examine the current state of provided training for educators in an effort to uncover more effective methods to better meet the needs of at-risk students while also delivering effective and evidence-based instruction.

Furthermore, researchers (e.g., Gunter & Denny, 1998; Lewis et al., 2004; Steinberg & Kniter, 1992; Wehby et al., 1998) have acknowledged and lamented the lack of effective instructional practices in classrooms for students with EBD. Rather than highly engaging activities, academic instruction for students with EBD consists of worksheets, nonmeaningful curricula, and ineffective teaching strategies (Steinberg & Knitzer, 1992). Researchers are encouraged to scrutinize various instruction offered to at-risk students in an effort to propose better academic programs of study.

Finally, continued efforts to uncover better practices in order to meet the needs of students with or at risk for EBD are vital. While numerous scientifically based practices have been uncovered (e.g., Lewis et al., 2004), outcomes regarding both behavior and academic outcomes for this unique population continue to be dismal (Cullinan et al., 2003; Nelson, Babyak, et al., 2003). Various inquiries emphasize a necessity for sustained efforts to uncover the most appropriate practices for obtaining ideal outcomes in both behavior and academics (Lane, et al. 2006; Nelson, Benner, Lane, et al., 2004).

Conclusion

Research has indicated that early literacy interventions can be an effective method for increasing literacy skills and for decreasing undesired behaviors in the classroom setting (Wehby, Lane, Falk, 2005; Babyak et al., 2000; Cochran, et al., 1993; Falk & Wehby, 2001; Lane et al., 2002; Wehby, Falk, et al., 2003) This multiple probe study (Baer, Wolf, & Risley, 1968; 1987; Horner & Baer, 1978) extends research on early literacy interventions by documenting outcomes of a systematic phonics intervention delivered by three general education teachers. Because most students with or at risk of EBD are served in the general education setting, general education teachers will assume the responsibility of meeting the needs of this population of students in terms of academics, behaviors, and social interactions (Lane, Oakes, Ennis, et al., 2011). Because of this fact, it is essential that general education teachers have methods to improve not only literacy outcomes but methods that will also have the potential to decrease undesired behaviors at their disposal. In the current study, all three general education teachers were successfully trained to deliver a systematic phonics intervention, to collect NWF and ORF probes, and to conduct behavioral observations. The systematic phonics intervention resulted in increased ORF and NWF for the participants as well as a decrease in TDB.

Additionally, despite various limitations, results obtained did, in fact, mirror those previously

obtained in the original study (Lane et al., 2002).

Appendix A - Student Risk Screening Scale (SRSS: Drummond, 1994)

District:
School:
Teacher:
Date:

Directions: Each classroom teacher will fill in the names of the students in alphabetical order (use additional sheets of this Scale as needed). Rate all of the students on each behavior using the following scale: 0=Never, 1=Rarely, 2=Occasionally, 3=Frequently. At the bottom of page 2, please summarize the number and percent of students in each risk category.

The total scores range from 0 to 21, forming three risk categories:
(L) Low Risk (0 to 3)   (M) Moderate Risk (4 to 8)   (H) High Risk (9 to 21)

Student Name	Steal	Lie, Cheat, Sneak	Behavior Problem	Peer Rejection	Low Academic Achieve-ment	Negative Attitude	Aggressive Behavior	Total (0-21)	Risk (circle)
1.									L M H
2.									L M H
3.									L M H
4.									L M H
5.									L M H
6.									L M H
7.									L M H
8.									L M H
9.									L M H
10.									L M H
11.									L M H
12.									L M H
13.									L M H

Student Name	Steal	Lie, Cheat, Sneak	Behavior Problem	Peer Rejection	Low Academic Achieve-ment	Negative Attitude	Aggressive Behavior	Total (0-21)	Risk (circle)
14.									L M H
15.									L M H
16.									L M H
17.									L M H
18.									L M H
19.									L M H
20.									L M H
21.									L M H
22.									L M H
23.									L M H
24.									L M H
25.									L M H
26.									L M H
27.									L M H
28.									L M H
29.									L M H
30.									L M H

SRSS Summary (for the classroom)

	Low Risk	Moderate Risk	High Risk
Number of Students			
Percent of Students			

Appendix B - Data Collection Sheet

Partial Interval Recording Form

Student Name: _____ Observer: _____ Time: _____

Date: _____

Time (one minute intervals)		Leave Seat	Touch Property	Physical Contact	Noise	Noncompliance
Total Occurrences of Behavior:						

Mark X for absence of behavior. Mark O for presence of behavior.

Appendix C - Difference Between Two Means

Size of Effect	*d*
Small	*.2*
Medium	*.5*
Large	*.8*

Appendix D - Treatment Integrity

PHONICS
CHAPTER BOOK 2

A Lot of Hats

1 The Hats ☑ 4-16-15

Reread to Develop Fluency ☑ 4-16

Before reading Book 2, Chapter 1, have children chorally reread Book 1, Chapter 11, "The Mop." This will help to develop fluency, remind children of what they already know, and begin the lesson with a successful reading opportunity.

It may be helpful to have children read each sentence in the chapter twice. On the first reading, guide children in blending words as they come to them. On the second reading, have children read each sentence naturally.

1 Phonemic Awareness (Oddity Task) ☑ 4-16

Explain to children that you will read a list of three words. Two of the words begin with the same sound; the other does not. Children are to choose the word that does not belong—the word that does not begin with the same sound as the other two words. For example, read aloud the following words: *hat, hop,* and *sick.* Ask children to name the word that does not belong. Point out that the words *hat* and *hop* begin with the same sound, /h/; the word *sick* does not begin with /h/. The word *sick* does not belong. Continue with these and other word sets:

- hop, man, hill
- sock, sit, mop
- sad, hand, hat
- let, hop, his
- hot, sock, hit
- ten, top, lock

2 Connect Sound-Symbol and Introduce High-Frequency Words ☑ 4-16

A. Introduce the Sound ☑ 4-16

- Write the letter *h* on a note card, and place it in the pocket chart. Explain to children that the letter *h* stands for /h/ as in the word *hat.* Have children repeat the sound as you point to the letter. Then write the word *hat* on the chalkboard, and have a volunteer circle the letter *h.*

- If time permits, ask children to generate a list of words that begin with /h/. Write these words on the chalkboard.

- Write the phonograms *-an* and *-ad* on the chalkboard. Point out the sounds these phonograms stand for. Add the letter *m* to the beginning of each phonogram, and blend the words formed. Ask children to suggest words that rhyme with *man* and *mad.* List these words on the chalkboard. Encourage children to look for the word parts *-an* and *-ad* as they read.

B. Review Sounds ☑ 4-16

Review the following previously taught sounds and spellings: /m/*m*, /a/*a*, /l/*l*, /t/*t*, /s/*s*, /o/*o*, and /h/*h*. Place the sound-spelling card for each spelling in the pocket chart. Have children chorally say each sound as you point to one card at a time. For those sounds that can be sustained (/m/, /a/, /l/, /s/, /o/), have children hold the sound for a couple of seconds.

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C. Blend Words ☑ 4-16

Using the sound-spelling cards in the pocket chart, build the word *hat*. Model for children how to blend the word. Move your finger under each letter as you say aloud the sound it stands for. Extend the sounds so that children can hear how they are blended together (for example, *haaaaaat*). Be sure not to stop between sounds. Then pronounce the word naturally. Repeat the blending procedure for the following words: *had, ham, hot, sat,* and *mat*.

D. Introduce High-Frequency Words ☑ 4-16

Write the high-frequency word *has* on a note card. To introduce the word, write the sentence *He has a mop* on the chalkboard. Read aloud the sentence, pointing to each word. Underline the word *has*. Then place the note card in the pocket chart. Move your finger from left to right under the word as children chorally read it. Then have children spell aloud the word. Point to each letter as children say the letter name. Repeat the read-spell procedure. When finished, add the note card to the Word Wall.

E. Review High-Frequency Words ☑ 4-16

Constantly review the high-frequency words taught. Place the following word cards in the pocket chart: *on, of, is, said,* and *to*. Point to one card at a time. Have children chorally read the word. Then have them spell aloud the word. Repeat the read-spell procedure before moving on to the next word.

3 Read the Chapter ☑ 4-16

Ask children to open their books to page 4. Have children chorally read Chapter 1, "The Hats," as they point to each word. Pace them through the text, and assist them in blending words with sound-spelling correspondences that have been taught. When they encounter difficult or confusing words while reading, allow children time to study the word—to really think about the sounds that comprise the word and to use context and picture clues. Be sure children are analyzing the entire word from left to right. When children are still learning how to blend the sounds in words, it is important to guide them through the blending strategy for every decodable word. Then have them reread each sentence in a more natural manner.

When completed, ask children the following:

- How many hats did Mom see? (*four*)
- Where were the hats? (*on the mop, on the man, on the mat, and on Dad*)

4 Dictate and Write ☑ 4-16

Have children take out a sheet of paper and number it from 1 to 4. Dictate the following words and sentence. Have children write the words and sentence on the sheet of paper. You may begin by having children write one letter/spelling at a time. If necessary, model for children how the sounds in the word can be stretched out (segmented) as you move your hands from right to left while facing the class. For children experiencing extreme difficulty, write a dotted outline of the spelling on their paper for them to trace. For high-frequency words in the sentence, have children refer to the Word Wall if necessary.

- ham
- hot
- sat
- I like the hat.

When completed, write the words and sentence on the chalkboard and have children make any necessary corrections on their papers.

Reread to Develop Fluency ☑ 4-16

Have children reread Book 2, Chapter 1. Children should read to themselves as you circulate around the room.

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⭐2 1, 2, 3. Who Is It? ☑ *4-20*

Reread the Previous Chapter ☑ *4-20*
Chapter 1, "The Hats" ☑ *4-20*

1 Phonemic Awareness (Oral Blending) ☑ *4-20*
Have children blend the following word parts:

- /l/...id   • /s/...it
- /s/...ick   • /h/...id
- /f/...it   • /l/.:.ick

2 Connect Sound-Symbol
Introduce the Sounds ☑ *4-20*
/i/i, phonogram -id

Review Sounds ☑ *4-20*
/h/h, /o/o, /s/s, /t/t, /l/l, /a/a, /i/i

Blend Words ☑ *4-20*

- it   • sit   • sat
- hit   • hot   • ham
- hat   • hid   • lid

Introduce High-Frequency Words
- looked   • my   • who ☑ *4-20*

Review High-Frequency Words
- has   • on   • of ☑ *4-20*
- is   • said • to
- Who has my hat?

3 Read the Chapter ☑ *4-20*
Chapter 2, "1, 2, 3. Who Is It?"

4 Dictate and Write ☑ *4-20*
- hit   • sat   • is
- Sit on my mat.

Reread to Develop Fluency ☑ *4-20*
Reread Chapter 2 and Chapter 1.

⭐3 The Map ☑ *4-21*

Reread the Previous Chapter ☑ *4-21*
Chapter 2, "1, 2, 3. Who Is It?"

1 Phonemic Awareness (Oral Blending) ☑ *4-21*
Have children blend the following word parts:

- /m/...op   • /l/...ot
- /l/...og   • /h/...op
- /n/...ot   • /f/...og

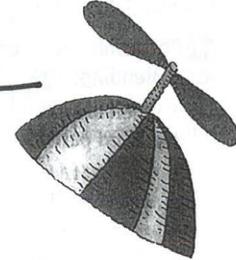### 2 Connect Sound-Symbol ☑ *4-21*
Introduce the Sounds ☑ *4-21*
/p/p, phonogram -og

Review Sounds ☑ *4-21*
/i/i, /h/h, /o/o, /s/s, /t/t, /a/a, /p/p

Blend Words ☑ *4-21*

- mop   • map   • pop   • pat
- hip   • lip   • tap   • log
- hog   • hop   • pot   • hit

Introduce High-Frequency Word
- his ☑ *4-21*

Review High-Frequency Words
- my   • who   • has ☑ *4-21*
- on   • is   • looked
- I like to hop.

3 Read the Chapter ☑ *4-21*
Chapter 3, "The Map"

4 Dictate and Write ☑ *4-21*
- pat   • lip   • and
- I can hop.

Reread to Develop Fluency ☑ *4-21*
Reread Chapter 3 and as many previous chapters as time permits.

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4 The Fan Hat ✓ 4-22

Reread the Previous Chapter
Chapter 3, "The Map" ✓ 4-22

1 Phonemic Awareness
(Oral Blending) ✓ 4-22
Have children blend the
following word parts:

- /f/...an   • /f/...ish
- /f/...ox   • /f/...it
- /f/...ix   • /f/...og

2 Connect Sound-Symbol ✓ 4-22

Introduce the Sound
/f/f ✓ 4-22

Review Sounds
/p/p, /i/i, /h/h, /o/o, /s/s,
/t/t, /f/f ✓ 4-22

Blend Words ✓ 4-22

- fat   • fit   • fog   • if
- top   • mat   • fan   • it

Introduce High-Frequency Words

- but   • them   • will ✓ 4-22

Review High-Frequency Words

- his   • my   • who
- has   • is   • the
- His hog is fat. ✓ 4-22

3 Read the Chapter ✓ 4-22
Chapter 4, "The Fan Hat"

4 Dictate and Write ✓ 4-22

- fog   • fat   • them
- Will it fit?

Reread to Develop Fluency ✓ 4-22

Reread Chapter 4 and as many
previous chapters as time
permits.

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5 Who Is He? ✓ 4-23

Reread the Previous Chapter
Chapter 4, "The Fan Hat" ✓ 4-23

1 Phonemic Awareness
(Oral Blending) ✓ 4-23
Have children blend the
following words parts:

- /n/...ot   • /n/...et
- /n/...ice   • /n/...ap
- /n/...ut   • /n/...ame

2 Connect Sound-Symbol ✓ 4-23

Introduce the Sound ✓ 4-23
/n/n

Review Sounds ✓ 4-23
/f/f, /p/p, /i/i, /h/h, /o/o,
/a/a, /n/n

Blend Words ✓ 4-23

- nap   • not   • man
- fan   • tan   • pan
- in   • an   • on

Introduce High-Frequency Word

- he ✓ 4-23

Review High-Frequency Words

- but   • them   • will
- his   • my   • who
- He will not fit. ✓ 4-23

3 Read the Chapter
Chapter 5, "Who Is He?"
✓ 4-23

4 Dictate and Write

- in   • man   • will
- He will not nap. ✓ 4-23

Reread to Develop Fluency ✓ 4-23

Reread Chapter 5 and as many
previous chapters as time
permits.

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6 The Cat Nap ✓ 4-24

Reread the Previous Chapter
Chapter 5, "Who Is He?" ✓ 4-24

1 Phonemic Awareness
(Oral Blending) ✓ 4-24
Have children blend the
following word parts:

- /m/...an   • /m/...at
- /n/...ut   • /f/...an
- /k/...at   • /k/...ut

2 Connect Sound-Symbol ✓ 4-

Introduce the Sound
/k/c ✓ 4-24

Review Sounds ✓ 4-24
/n/n, /f/f, /p/p, /i/i, /h/h,
/o/o, /k/c

Blend Words ✓ 4-24

- man   • can   • cat
- hot   • cot   • cap

Introduce High-Frequency Words

- do   • where ✓ 4-24

Review High-Frequency Words ✓ 4-2

- he   • but   • them
- will   • his   • my
- Where is my cat?

3 Read the Chapter ✓ 4-24
Chapter 6, "The Cat Nap"

4 Dictate and Write ✓ 4-24

- can   • cat   • will
- Where can I sit?

Reread to Develop Fluency ✓ 4-24

Reread Chapter 6 and as many
previous chapters as time
permits.

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7 Bill and Tom at Bat ✓ 4-27

Reread the Previous Chapter ✓ 4-27

Chapter 6, "The Cat Nap"

1 Phonemic Awareness (Oral Blending) ✓ 4-27

Have children blend the following word parts:

- /f/. . . ill
- /m/. . . at
- /s/. . . ad
- /b/. . . ill
- /s/. . . at
- /b/. . . ad

2 Connect Sound-Symbol ✓ 4-27

Introduce the Sounds

/b/*b*, phonogram -*ill* ✓ 4-27

Review Sounds

/k/*c*, /n/*n*, /f/*f*, /p/*p*, /i/*i*, /h/*h*, /b/*b* ✓ 4-27

Blend Words ✓ 4-27

- fill
- bill
- hill
- bat
- bad
- bit

Introduce High-Frequency Words

- are
- ball
- can't ✓ 4-27

Review High-Frequency Words

- do
- where
- he
- but
- them
- will
- Bill can hit the ball. ✓ 4-27

3 Read the Chapter

Chapter 7, "Bill and Tom at Bat" ✓ 4-27

4 Dictate and Write

- bad
- fill
- he
- I can't see the bat. ✓ 4-27

Reread to Develop Fluency ✓ 4-27

Reread Chapter 7 and as many previous chapters as time permits.

8 Who Will Win? ✓ 4-28

Reread the Previous Chapter ✓ 4-28

Chapter 7, "Bill and Tom at Bat"

1 Phonemic Awareness (Oral Blending) ✓ 4-28

Have children blend the following word parts:

- /w/. . . ig
- /w/. . . in
- /w/. . . ill
- /w/. . . et

2 Connect Sound-Symbol ✓ 4-28

Introduce the Sound ✓ 4-28

/w/*w*

Review Sounds ✓ 4-28

/b/*b*, /k/*c*, /n/*n*, /f/*f*, /p/*p*, /i/*i*, /w/*w*

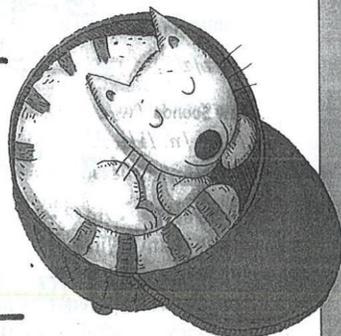**Blend Words** ✓ 4-28

- will
- win
- pin
- pan
- bad
- bat

Introduce High-Frequency Words

- her
- why ✓ 4-28

Review High-Frequency Words ✓ 4-28

- are
- ball
- can't
- do
- where
- he
- Why will he win?

3 Read the Chapter ✓ 4-28

Chapter 8, "Who Will Win?"

4 Dictate and Write ✓ 4-28

- win
- will
- are
- Why is he sad?

Reread to Develop Fluency ✓ 4-28

Reread Chapter 8 and as many previous chapters as time permits.

9 Ants Like Jam ☑ 4-29

Reread the Previous Chapter

Chapter 8, "Who Will Win?" 4-29

1 Phonemic Awareness (Oddity Task) ☑ 4-29

Have children listen to each set of words. Ask them to tell you which two words have the same beginning sound.

- jet, man, jam
- zoo, zip, hat
- jump, jug, run

2 Connect Sound-Symbol

Introduce the Sounds ☑ 4-29

/j/j, /z/z ☑ 4-29

Review Sounds /w/w, /b/b, /k/c, /n/n, /i/i, /a/a, /j/j, /z/z ☑ 4-29

Blend Words
- jam • ham • Jim • jab • zip • zap
- Jill • fin • fizz • jog 4-29

Introduce High-Frequency Words
- they • what's • up • this ☑ 4-29

Review High-Frequency Words
- her • why • are
- can't • where • do
- Jim likes this jam. ☑ 4-29

3 Read the Chapter

Chapter 9, "Ants Like Jam" ☑ 4-29

4 Dictate and Write
- jam • zip • can't
- Jill sat up. ☑ 4-29

Reread to Develop Fluency

Reread Chapter 9 and as many previous chapters as time permits. ☑ 4-29

10 Dot the Dog ☑ 4-30

Reread the Previous Chapter

Chapter 9, "Ants Like Jam" 4-30

1 Phonemic Awareness (Oral Blending) ☑ 4-30

Have children blend the following word parts:

- /s/...ad • /f/...og
- /r/...ug • /m/...ad
- /d/...og • /d/...ug

2 Connect Sound-Symbol

Introduce the Sounds 4-30

/d/d, phonogram -op ☑ 4-30

Review Sounds /j/j, /z/z, /w/w, /b/b, /k/c, /o/o, /d/d ☑ 4-30

Blend Words
- bat • bad • Dad
- dip • lid • dog
- jam • did • dot
- top • hop • mop

Introduce High-Frequency Words
- have • little
- name • we ☑ 4-30

Review High-Frequency Words
- they • what's • up
- this • why • her
- I have a little dog. ☑ 4-30

3 Read the Chapter

Chapter 10, "Dot the Dog" 4-30

4 Dictate and Write
- dip • bad • we
- Did he do it? ☑ 4-30

Reread to Develop Fluency

Reread Chapter 10 and as many previous chapters as time permits. ☑ 4-30

11 They Ran and Hid ☑ 5-1

Reread the Previous Chapter

Chapter 10, "Dot the Dog" ☑ 5-1

1 Phonemic Awareness (Oral Blending) ☑ 5-1

Have children blend the following word parts:

- /r/...ed • /r/...at
- /r/...un • /r/...an
- /r/...ug • /r/...ock

2 Connect Sound-Symbol

Introduce the Sounds ☑ 5-1

/r/r, phonogram -ob

Review Sounds /d/d, /j/j, /z/z, /w/w, /b/b, /i/i, /r/r ☑ 5-1

Blend Words
- ran • ran • pan
- rip • rat • sat
- did • rid • job

Introduce High-Frequency Words
- for • she • yes 5-1

Review High-Frequency Words
- have • little • name
- we • this • they
- Did she see the rat? ☑ 5-1

3 Read the Chapter

Chapter 11, "They Ran and Hid" ☑ 5-1

4 Dictate and Write
- rat • rip • have
- She ran. ☑ 5-1

Reread to Develop Fluency

Reread Chapter 11 and as many previous chapters as time permits. ☑ 5-1

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Appendix E - Social Validity

IRP-15

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
This is an acceptable intervention for the child's problem behavior and academic needs.	1	2	3	4	5	6
Most teachers would find this intervention appropriate for students' academic and behavioral needs.	1	2	3	4	5	6
This intervention should be effective in changing the child's achievement and behavior.	1	2	3	4	5	6
I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
The child's behavioral and academic needs are severe enough to warrant use of this intervention.	1	2	3	4	5	6
Most teachers would find this intervention suitable for the academic needs and behavior problem described.	1	2	3	4	5	6
I would be willing to use this intervention in the classroom setting.	1	2	3	4	5	6
This intervention should not result in negative side effects for the child.	1	2	3	4	5	6

This intervention is appropriate for a variety of children.	1	2	3	4	5	6
This intervention is consistent with those I have used in the classroom.	1	2	3	4	5	6
The intervention is a fair way to handle the child's academic needs and problem behavior.	1	2	3	4	5	6
This intervention is reasonable for the student's academic needs and behavior problems.	1	2	3	4	5	6
I like the procedures used in this intervention.	1	2	3	4	5	6
This intervention should be a good way to handle the child's behavior and academic needs.	1	2	3	4	5	6
Overall, this intervention should be beneficial for the child.	1	2	3	4	5	6

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