THE EFFECTS OF BEHAVIORAL MONITORING PROGRAMS ON READING ACQUISITION OF ELEMENTARY STUDENTS WITH OR AT-RISK FOR EMOTIONAL OR BEHAVIORAL DISORDERS

A Thesis

by

STACY WASHINGTON MORGAN

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for a degree of

MASTER OF SCIENCE

December 2009

Major Subject: Educational Psychology

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Approved By:

Chair of Committee,	Mack Burke
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ABSTRACT

The Effects of Behavioral Monitoring Programs on Reading Acquisition of Elementary Students with or At-Risk for Emotional or Behavioral Disorders.

(December 2009)

Stacy Washington Morgan, B.S., Texas A&M University

Chair of Advisory Committee: Dr. Mack Burke

The Behavior Education Program was implemented with four students at a large sub-urban elementary school in central Texas. The elementary school has a diverse population of 750 students and was implementing Tier 1 interventions with 81% fidelity as measured by the School-wide Evaluation Tool. The BEP was implemented in a multiple-baseline design. All students' behavioral improvement was measured through daily behavior rating scales, office discipline referrals and time sampling data. Academic engagement was measured through direct observation, DIBELS progress-monitoring and nine-week grades. Progress on BEP goals was then compared to direct observation data of on-task behavior and DIBELS data. All three students' improvement on BEP goals correlated with an improvement in academic engagement and increased scoring on DIBELS progress monitoring indicating that progress in the area of behavior is linked to academic achievement.

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CHAPTER I

INTRODUCTION

Problem Statement

Over the last century, American education has transformed from an exclusive opportunity for the privileged to a basic right for every individual. School systems have slowly evolved to open their doors to a diverse group of individuals. After the passage of Public Law 94-142 in 1975 all students gained access to the American schools system and have gradually moved toward more inclusive educational environments (Bulgren, Deshler & Lenz, 2007; Bulgren & Carta, 1992). The recent passage of No Child Left Behind (NCLB) of 2001 has required students to be instructed in grade-level curriculum preferably in the general education classroom (Carpenter & Dyal, 2007). In order to accommodate federal mandates for highly-qualified teachers, special education teachers and interventionists have moved into the general education classroom to collaborate with content area experts for delivery of instruction (Hagan-Burke & Jefferson, 2002; Carpenter & Dyal, 2007).

As inclusion philosophy sweeps through the American education system, many students are being reintroduced the general education classroom with the expectation of acquiring grade-level content with continually increasing rigor. However, placing students in the general education classroom does not automatically translate into students accessing to the grade-level curriculum (Deshler, et al., 2001).

This thesis follows the style of *Exceptional Children*.

Students previously receiving instruction in resource or self-contained settings often enter the general education classroom without the basic skills to read the text books or process the content that is presented in their grade-level classroom, making accessing grade-level curriculum a difficult task (Lebzelter & Nowacek, 1999). For teachers, a diverse classroom population necessitates increased skills in instructional strategies, behavior management and differentiation to address the needs of a growing population of diverse students (Bulgren, et al., 2007; Deshler, et al., 2001; Bulgren & Carta, 1992).

Some of the students commonly re-entering the general education classroom are students with emotional or behavioral disorders (EBD). According to the U.S. Department of Education (1998), a child with EBD has an inability to learn that cannot be explained by intellectual sensory, or health factors. Research indicates that the number of students receiving specialized services for EBD has grown over the past 15 years (Pierce, Reid & Epstein, 2004), and now includes approximately 1% of students in the United States (Lane, Wehby & Barton-Arwood, 2005). Beyond students identified with EBD, many more students exhibit at-risk behaviors that lead to negative outcomes similar to those outcomes experienced by students with EBD. Between 2% and 16% of students display behaviors consistent with oppositional defiant disorder or conduct disorder (*Diagnostic and Statistical Manual of Mental Disorders IV*, American Psychological Association, 1994). Even more students frequently display mild to moderate antisocial behaviors, making behavioral support and intervention the responsibility of all school staff (Lane, et al., 2005).

Students with or at-risk for EBD display problem behaviors such as defiance, non-compliance, aggression (Lane, et al., 2005; McConaughy & Skiba, 1993), class disruption (Lane, Gresham & O'Shaughnessy, 2002), and an inability to develop quality relationship with peers and teachers (Gresham, 2002; Lane, et al., 2005). Substantial negative outcomes are commonly experienced by students with or at-risk for EBD, including school-failure and drop-out (Pierce, Reid & Epstien, 2004), unemployment, mental health issues, motor vehicle accidents, and incarceration (Walker, Ramsey & Gresham, 2004; Lane, et al., 2005).

Along with problem behaviors, students with or at-risk for EBD consistently under-perform their peers academically, show low rates of classroom engagement and display reduced task completion (Lane, et al., 2005). The skills needed to maximize learning, such as note-taking, organization, and effective study practices are often minimal or missing with students with EBD. Poor academic habits contribute to low performance in all core content areas. Reading acquisition for students at-risk for EBD is particularly low, also influencing performance in all content areas (Nelson, Benner, Lane & Smith, 2004.)

Overall, quality of life is diminished as students with or at-risk for EBD continuously experience academic and social failure. Without intervention, students with EBD are less likely to master the academic and social skills that contribute to life-long success. (Lane, et al., 2005) As schools provide support to students with or at-risk for EBD, schools must consider risk and protective factors that affect students' quality of life. Walker and Shinn (2002) define risk factors as experiences during the life of

individuals that increase the likelihood of negative outcomes and a decreased quality of life, while protective factors are experiences that encourage a pro-social development and reduce the effects of risk factors. Because greater and longer exposure to risk factors increases the negative impact upon school-related behavior, academic performance, and general well-being, Walker and Shinn furthermore claim that "a key role for schools... is to *enhance protective factors* in academic, social, emotional, and mentoring-support domains in order to buffer and offset the *negative effects of risk factors*" (pp. 8, 9). For students with substantial academic and behavioral risk factors, schools should focus intervention on providing intensive protective factors to increase students' likelihood for school completion and increased quality of life (Walker & Shinn, 2002).

The Effects of Behavior on Reading and Academic Outcomes

Many negative outcomes for students at-risk for EBD can be linked to poor academic skills, especially in the area of reading (Pierce, Reid & Epstein, 2004; Vaughn, Levy, Coleman & Bos, 2002; Tomblin & Zhang, 2000). Over 50% of students identified as students with EBD could also be identified as students with learning disabilities (Vaughn, et al., 2002). Many students with learning disabilities (LD) have reduced vocabularies due to language and/or processing difficulties (Scarborough, 2001) and commonly struggle with the alphabetic principle and reading fluency (Rashotte & Torgesen, 1985; Simmons & Kameenui, 1998). Most struggling readers experience widening gaps in reading ability due to less engagement in reading and writing, coupled with smaller vocabulary knowledge (Rupley & Nichols, 2005; Harmon, Hendrick & Wood, 2005). Besides academic gaps, students with learning disabilities often lack prior

knowledge of content concepts to understand current levels of curriculum (Bos & Anders, 1990; Bulgren & Scanlon, 1997). Many content areas such as science and math require understanding of highly specific yet low-frequency vocabulary to participate in instruction (Harmon, et al, 2005).

Currently, it is unclear whether behavioral difficulties affect reading acquisition or conversely difficulties in reading perpetuate behaviors (Frick et al., 1991; Lane, Menzies, Munton, Von Duering, & Engling, 2005; Hinshaw, 1992). Regardless, students with EBD consistently demonstrate significant difficulties with reading (Vaughn, et al., 2002). Understanding the directionality of behavioral and academic difficulties may be unnecessary, since some research indicates improvements in one area create improvements in the other (Sugai, Lewis-Palmer, & Hagan-Burke, 2000).

Despite the directionality of effects, to begin the process of behavioral and academic improvement, intervention in one or both areas is usually necessary. Formerly, research on students with EBD has focused on behavioral interventions and outcomes with little attention given to academic outcomes (Pierce, Reid & Epstien, 2004; Vaughn, et al., 2002, Shores, Gunter, & Denny, 1993; Wehby, Lane, & Falk, 2003). Since the enactment of No Child Left Behind (NCLB) in 2001 (U.S. Department of Education, 2002), research and practice has shifted to understand and address the academic effects and needs of students with severe behaviors (Lane, et al., 2005; Carroll, Maughan, Goodman, & Meltzer, 2005). In a study conducted by Powell, Mcintyre and Rightmyer (2006) increased classroom engagement lead to increased student achievement. In another study, Lane et al. (2005) found that small-group instruction in phonemic

awareness was able to decrease student disruption and increase positive social interaction. However, more research is needed to identify what interventions can consistently address the academic and behavioral needs of students with or at-risk for EBD.

Behavioral Monitoring Programs

Over the past 20 years, research has led practitioners to implement a three tier system of support so that all students may receive the intervention and instruction they need to be successful (Sprick, Sprick & Garrison, 1992; Walker & Shinn, 2002; Fairbanks, Sugai, Guardino & Lathrop, 2007; Sugai & Horner, 2007.) At the primary level, Positive Behavior Supports has provided large amounts of research supporting the effectiveness of school-wide systems of behavioral support for all students (Sprick, Sprick & Garrison, 1992; Lewis & Sugai, 1999; Walker, & Shinn, 2002; Sugai, Horner, & Gresham, 2002). At the tertiary level, individual behavior supports through functional analysis have also been extensively studied (Iwata, Dorsey, Slifer, Bauman & Richman, 1994; Lane et al., 2007; Kern, Childs, Dunlap, Clark, & Falk, 1994); however, much less research has been conducted on secondary-level interventions. Secondary interventions are intended to support students who are at-risk for problem behaviors and who have not responded to the school-wide interventions already in place at the primary level (Hawken & Horner, 2003). Walker et al. (1996) proposed multiple interventions that fit within the targeted level of behavior intervention including small group social skills instruction, behavior contracts, and counseling.

One secondary-level intervention that has received attention in literature is

behavior monitoring programs which combine frequent monitoring with behavioral interventions (Crone, Horner & Hawkins, 2004; Hawken, MacLeod & Rawlings, 2007). Behavior monitoring programs allow students to receive specific and immediate feedback on their behavior while increasing positive attention from adults (Hawken, et al., 2007). There are typically 3 components to most behavior monitoring programs: check-in/check-out features, daily behavior report cards, and reinforcement systems.

Component 1: Check In/Out Programs

The first feature of most behavior monitoring programs is a check-in/check-out (CICO) component. During CICO, students meet with a mentor teacher each morning to discuss behavioral goals and prepare for the day. At the end of the day, students return to the mentor teacher to revisit behavioral performance throughout the day and compare performance to behavioral goals (Filter, et al., 2007). During check-out, a home-school note is prepared to maintain communication and collaboration between school staff and parents (Filter, et al., 2007; Todd, Campbell, Meyer & Horner, 2008). Utilizing CICO allows students to obtain non-contingent attention from adults at least twice within the school day.

Evidence shows that implementing a CICO program requires minimal resources. One teacher can serve as CICO staff for multiple students allowing many students to benefit from intervention without requiring high amounts of staff to be taken from morning and afternoon supervision duties. Behavioral systems for intervention should be continuously accessible to students, thus allowing implementation to occur 72 hours of

identification of need and without reallocation of staff. (Filter et al., 2007; Todd et al., 2008).

Component 2: Daily Behavior Report Cards

Daily behavior report cards (DBRCs) are a second component of behavior monitoring programs. According to Chafouleas, Riley-Tillman and McDougal (2002), "a measure is considered a DBRC if a specified behavior is typically rated at least daily, and that information is shared with someone other than the rater" (p. 157). When using DBRCs, problem behaviors are defined and scaled so that all potential raters agree on the behavior being measured (Burke & Vannest, 2008). The behavioral performance is then recorded at regular and consistent frequencies. The data is compiled and graphed to be used to assess progress and adjust feedback and reinforcement systems. (Riley-Tillman, Chafouleas, & Briesch, 2007). Many applications of DBRCs include student feedback components, where teachers have conversations with students to discuss progress on goals and areas for improvement (Crone, et al., 2004). The feedback component allows students to gain understanding on expectative behaviors and to more closely approximate desired behaviors.

One result of the DBRC system is data collection indicating the students' progress on their scaled behavior goals. Research has supported the effectiveness of many methods of behavior assessment such as behavior rating scales, permanent products and systematic direct observation (Riley-Tillman, et al., 2007). Often these methods are unused by practitioners since implementation of such methods demands staff training, time and resources in order to implement with fidelity (Chafouleas, et al.,

2007). Since relatively minimal time and staff resources are needed to implement DBRCs, recent research has focused on examining the usefulness of DBRCs as a data collection tool and a behavior intervention. Further research is needed to better understand the accuracy and effectiveness of DBRCs as a data collection tool and as an intervention.

Component 3: Reinforcement Systems

Reinforcement, positive or negative, has been established through years of research as an effective tool for improving problem behavior (Crawford & McLaughlin, 1982; McComas, Goddard & Hoch, 2002). Some research has begun to examine the level of effectiveness of various reinforcements. In 2007, Kodak et al. demonstrated that student choice can increase the effectiveness of both positive and negative reinforcement preference, but that many other factors influenced effectiveness including strength of the reinforce, satiation and deprivation levels, and discomfort of the demand (Kodak, Lerman, Volkert & Trosclair, 2007). More specifically, Chalk and Bizo (2004) found that specific praise produced greater effects on on-task behavior than general positive praise.

Because individual choice and method of delivery have been shown to vary the effectiveness of reinforcement (DeLeon, Niedert & Anders, 2001; Kodak, et al., 2007), reinforcement surveys are often used to allow students to indicate preference for certain reinforcers over others (Northup, George, Jones, & Broussard, 1996; Cote, Thompson, Hanley, & McKerchar, 2007). More research is needed to understand the role of reinforcement in behavioral and academic interventions.

Rationale and Research Question

This study examines the effects of a behavior monitoring program on student outcomes. Two main research questions will be posed. First, what are the effects of a behavior monitoring program on off-task behavior? Previous studies have examined behavior monitoring programs effects on multiple behaviors (Chafouleas, et al., 2002; Hawken, et al., 2007) such as inappropriate verbalizations (e.g., Burkwist, Mabee, & McLaughlin, 1987), aggression (e.g., Seay, Fee, & Holloway, 2003), assignment completion (Dougherty & Dougherty, 1977, Pelham, 1993), noncompliance (Hyman et al., 1998), and accuracy on tasks (e.g., Blechman, Taylor, & Schrader, 1981). This study will focus specifically on the effects of behavior monitoring programs on more general behaviors such as respect and responsibility.

This study also examines the relationship between problem behaviors and reading acquisition. Does behavioral improvement lead to increased reading acquisition? Students selected for this study have been identified with both reading and behavioral problems. Although the primary dependent measures are focused on problem behavior, the collateral effects on reading outcomes are also of interest. Many students with or at risk of EBD have academic deficits specifically in the area of reading (Carroll, Maughan, Goodman & Meltzer, 2005; Cornwall & Bawden, 1992). While much research on behavioral monitoring programs has focused on improving problem behavior, none have addressed students with co-occurring reading problems. The high comorbidity rate of behavioral and reading difficulties infers a relationship, but whether the relationship is directionally causal is unknown. It is possible that as students

participate in behavioral monitoring programs and subsequently increase on-task behavior, the heightened attention to instruction may allow reading acquisition rates subsequently increase. This result would demonstrate behavior as a causal element on minimized reading acquisition. This study is intended to determine whether behavioral improvement as measure by the daily behavior report cards leads to improvement in reading acquisition as measured by DIBELS.

CHAPTER II

METHOD

Context

Although (PBS) and (FBA) have provided large amounts of research supporting the effectiveness of these processes in the primary and tertiary level respectively, (Walker, & Shinn, 2002; Sugai, Horner, & Gresham, 2002; Kern, Childs, Dunlap, Clarke, & Flak, 1994; Iwata, Dorsey, Slifer, Bauman & Richman, 1994; Lane, et al., 2007), only a small amount of research has been conducted to understand secondary-level interventions in the area of behavior. Secondary interventions are intended to support students who are at risk for problem behaviors and who have not responded to the school-wide interventions already in place at the primary level.

Recently, much research has focused on behavioral interventions for at-risk students who have not yet displayed life-long persistent, severe behavioral difficulties. Many instructional and behavioral -focused interventions have shown promising results for students at-risk for behavioral difficulties during research. But practitioners have called for more effective and less intrusive interventions to improve student behavior. Research has supported the effectiveness of many methods of behavior assessment such as behavior rating scales, permanent products and systematic direct observation (Riley-Tillman, Chafouleas, & Briesch, 2007). Often these methods are unused by practitioners since implementation of such methods demands staff training, time and resources in order to implement with fidelity (Chafouleas, Riley-Tillman, Sassu, LaFrance, Patwa 2007).

Participants

A large sub-urban elementary school in central Texas participated in the study. The elementary school has a diverse population of 750 students in grades pre-k through 5th grade. This campus was implementing Tier 1 positive behavior support (PBS) systems with 81% fidelity in 2008 and 93% fidelity in 2009 as measured by the School-Wide Evaluation Tool (SET; Horner, et al, 2004). The school's population consisted of highly varied demographics with over 50% of students in the school receiving free or reduced lunch. The school also qualified for Title 1 funds.

Three students were identified to participate in the intervention. All participating students were identified as at-risk in both reading and behavior. Students were identified as "at-risk" in behavior if they were determined to be in the bottom ten percentile of students at their campus according to the On-line School-Wide Expectations Screener (Burke & Parker, 2008) and the Behavioral and Emotional Screening System (BESS; Kamphaus & Reynolds, 1998). Students were identified as "at-risk" in reading if they scored "below average" or were not making a full year of progress according to DIBELs oral reading fluency probes (DIBELS; Good & Kaminski, 2001a).

Steven was a 3rd grade male who displayed behaviors that disrupted the learning of others. Steven was frequently out of his seat and had long periods of time when he was disengaged with learning. Steven's teachers had tried many behavior modification techniques including multiple redirects, moving Steven's desk away from his peers and calling Steven's parents. Steven had received four office discipline referrals prior to interventions for fighting and unsafe actions. Steven was significantly behind his grade-

level peers in reading acquisition, scoring a 59 on DIBELS ORF probes in the fall with a declining score of 50 in the winter. Steven participated in a pull-out reading intervention for 30 minutes each day.

Donny was a 4th grade male who displayed frequent off-task behaviors. Donny had been previously diagnosed with ADHD, but was currently not taking medication. Donny's behaviors included sitting and staring during instruction and independent work times, drawing or coloring and talking with peers during work time. Prior to intervention, Donny had received one referral for making inappropriate gestures. In the area of reading acquisition, Donny was slightly behind and beginning to make slower progress than his grade-level peers. During Spring of Donny's 3rd grade year, Donny scored a 96 on his ORF. In the Fall and Winter of 4th grade, Donny scored a 95 and 98, respectively, on his ORF. The slowing rate of Donny's reading acquisition was a concern for his teacher. Donny was not receiving any reading intervention at this time.

Dylan was a 4th grade male who displayed frequent off-task behaviors. Dylan had a teacher change mid-year due to his current teacher taking another job. During independent work time, Dylan frequently looked around the room or put his head down. During group work, Dylan engaged in off-topic conversations that got the rest of his peers off task. According to his current teacher, Dylan rarely brought his supplies to class or had his homework from the night before. Dylan's teacher frequently provided pencil, paper or extra copies of homework for Dylan to be successful. Dylan had average reading as compared to his grade-level peers, but his acquisition rates were stagnant.

During the Spring of his 3rd grade year, Dylan scored 110 on his ORF; during Fall and Winter of his 4th grade year Dylan scored 111 and 118, respectively, on his ORF.

Intervention

Students participated in check-in each morning with a mentor teacher to prepare for the day and receive their DBRC sheet. During check-in, the mentor teacher inquired about the student's morning, checked for supplies and homework, then reviewed school-wide expectations. Each mentor teacher worked with one student.

During four intervals throughout the day, classroom teachers rated behavior performance as related to the school-wide expectations using a five-point scale. Classroom teachers referred to the campus expectation scales during this time and rate student accordingly (see Appendix C). Teachers verbally reflected with students about daily behavior performance at the end of each rating period. Students were praised for displaying behaviors in accordance with school-wide expectations. During times in which students did not meet expectations, classroom teachers provided corrective feedback to students on how to meet expectations in the future.

At the end of each day, students participated in check-out with their mentor teacher, during which students recapped the day with the mentor teacher. Mentor teachers delivered various forms of tangible reinforcement for meeting daily behavioral goals. Reinforcement examples include social reinforcers in the form of teacher praise, tangible reinforcers in the form of stickers and pencils, or intrinsic reinforcers in the form of pride. On days when students did not meet their daily goal, mentor teachers

spent check-out time discussing and practicing behaviors that allowed students to meet their goals the upcoming day.

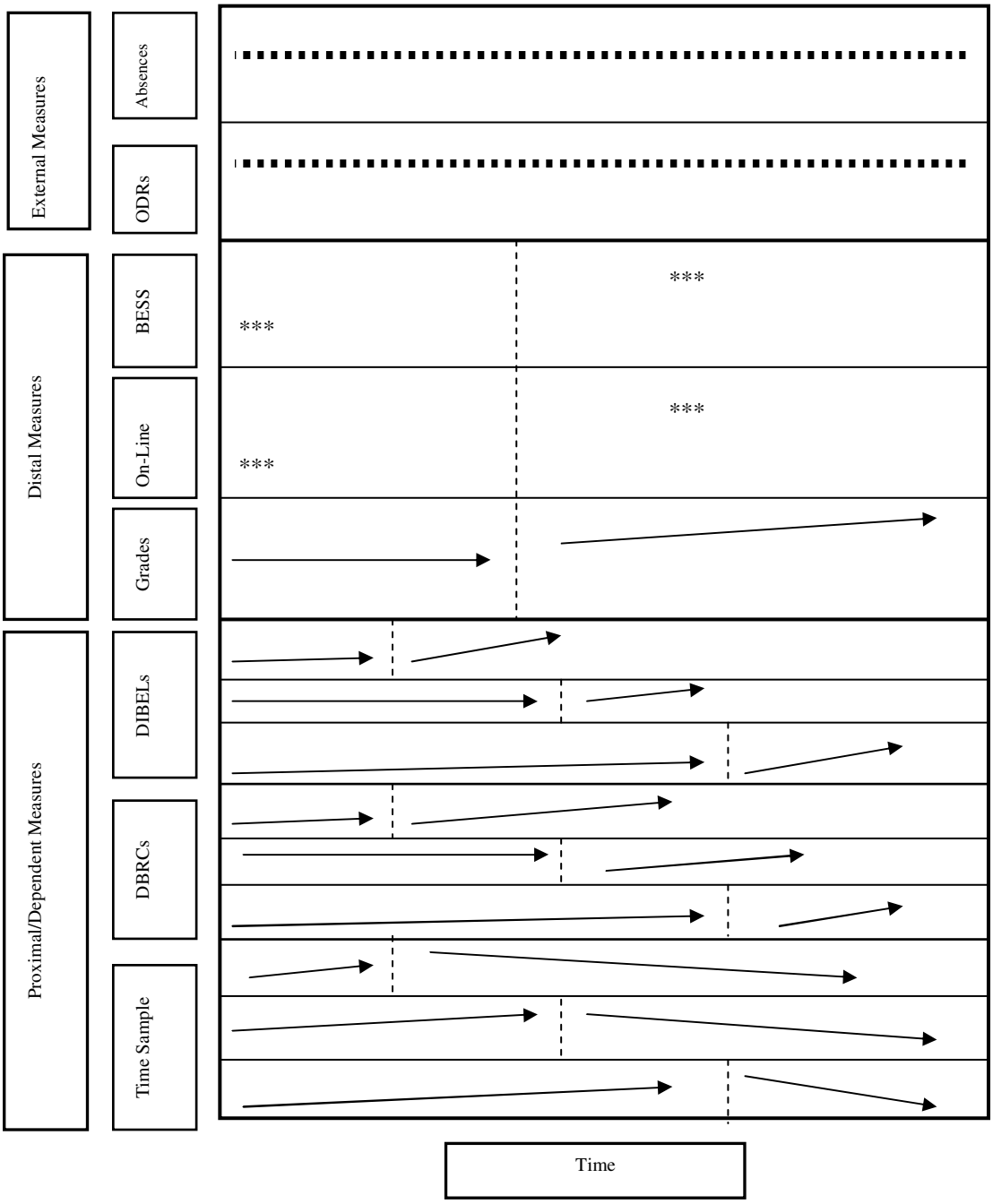
Design

The study utilized a multiple-baseline replication design (see Figure 1). Participants began intervention at varying time intervals. Baseline data collection began on all students simultaneously. Two or more students begin intervention on the same dates across three different time schedules. Intervention began based on the needs of the practitioner.

External measures include absences and referrals. Distal measures included two pre/post tests, the BESS and the school-wide expectations on-line screener, as well as student grades. Proximal screeners include direct observation data to measure off-task and disruptive behavior, DBRC data to measure behavior progress in relation to school-wide expectations and DIBELs data to measure reading acquisition.

Each data series will consist of one baseline and one intervention phase over a 6-week period. Student will participate in baseline phase for 3 days, 6 days or 9 days. Baseline timelines will be flexible due to the need for practitioner buy-in and varying school schedules.

FIGURE 1
Study Design Model



Measurement

Time Sampling

Students were observed for on-task behavior and task engagement using 20s partial-interval frequency counts. On-task behavior during whole-group activities was operationally defined as “eyes on teacher, answering questions when asked, talking only when given permission and/or taking notes”. During group tasks, on-task behavior was defined as “on-topic conversation or listening to others on-topic conversations”. During individual tasks, on-task behavior was operationally defined as “writing or reading assigned task, asking questions of the teacher or neighbor or gathering supplies”.

Reliability data was taken on 20% of occasions. Time sampling data reliability began with a discussion and trial observation over 30 minutes to help calibrate the two observers. After discussing results and clarifying definitions, the final reliability sample was taken. The observers used a "cue sheet" with operational definitions of “off-task” and “disruptive” behavior to help standardize their coding.

After observing, the two time samplings were placed together to check agreement. Matrix data were entered into the NCSS statistics program, for cross-tabulation, which provided the Cohen's Kappa index. The resulting Kappa from the four 15-minute reliability checks were .5064, and the "percent of agreement" was 69.1%. This can be interpreted as follows: data collection was considered fairly reliable according to Cohen’s Kappa index which calculates reliability beyond chance levels. This is a conservative calculation. The percent of agreement during data collection was

at 69.1% indicating that data collection was only partially reliable and may be a limitation of the study.

Daily Behavior Report Cards (DBRCs)

Each student was monitored six times per day on behavior goals using a DBRC to allow for daily repeated measures of appropriate behaviors. Behavior goals were scaled through collaboration of campus staff and the researcher. Staff met as a group to discuss each student and identify 3-5 behaviors that were appropriate for intervention. Students' goals were then scales into five categories label "5", "4", "3", "2", and "1" (see Appendix C).

Throughout intervention, each student received performance feedback from the teacher at each rating interval. At the end of each day, daily ratings were also shared with each student's mentor teacher and sent home to the parent. Averages of daily rating for each behavior were scored and graphed. An average of each student's total score for all goals was also scored and graphed.

Prior to the teacher beginning daily rating of the behavior, the researcher observed for15 to 30 minute periods in each classroom. At the end of each period, teachers compared ratings of the student behavior with the researcher. DBRC data reliability began with a discussion and trial observations over 15 minutes to help calibrate all 4 observers. After the trial observation and clarification of the scales, a final reliability sample was taken. The observers used a "cue sheet" with the operational definitions of "respect, responsibility, effort, attitude, caring and cooperation, honesty".

After observing, the teacher and researcher independently rated the behavior of their students and subsequently compared scores.

Matrix data was again entered into NCSS statistics program for cross-tabulation, which provided Cohen's Kappa index for each teacher/observer pairing. During baseline phase, Steven's teacher had a resulting Kappa of .0204 and the "percent of agreement" was 76.3% with 15 consecutive matches. The probability level of these results was .0003 indicating it was highly unlikely that the results were due to chance. Donny's teacher has a resulting Kappa of .7330 with a "percent of agreement" of 82.4%. The probability level of these results was .0001 indicating it was highly unlikely these results were due to chance. Dylan's teacher had a resulting Kappa of .7894 with a "percent of agreement" of 86.7%. The probability level of these results was .0000. The total "percent of agreement" of all teachers combined was 81.8%.

Dynamic Indicators of Basic Early Literacy Skills (DIBELS)

Students were also screened using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Good & Kaminiski, 2001a) to measure progress in reading proficiency. The intention of DIBELS is to assess progress in the major predictors of later reading success, including phonemic and phonological awareness, alphabetic principal, and reading fluency (Good & Kaminiski, 2001a; Elliott, Huai & Roach, 2007). DIBELS has been demonstrated as a valid and reliable tool to measure students' proficiency and predict future progress in the area of reading (Elliott, Lee & Tollefson, 2001; Hintze, Ryan & Stoner, 2003; Rouse, & Fantuzzo, 2006; Roehrig, Petscher, Nettles, Hudson & Torgeson, 2008; Elliott, et al., 2007, Good, Simmons, Kame'enui,

2001). DIBELS oral reading fluency reading measures were used as probes during this study (see Appendix A).

DIBELS oral reading fluency probe (ORF) measures the rate and accuracy at which students read grade-level connected text (Good & Kaminiski, 2001a; Elliot, et al., 2007). Initial sound fluency measures students' ability to correctly identify the onset, or initial sound, of a series of words. (Good & Kaminiski, 2001a; Elliot, et al., 2007; Coyne & Harn, 2006). Phoneme segmentation fluency (PSF) allows students to demonstrate ability in segmenting words into individual phonemes (Good & Kaminiski, 2001a; Coyne & Harn, 2006).

Internal Validity

The moderate inter-rater reliability during time-sampling data undermines the studies ability to draw strong conclusions to research question one. Fortunately, ample amounts of previous research indicate direct observation and DBRC data provide consistent results. Therefore the lack of reliability during time-sampling data should not affect the other two research questions. Also, minimal data points during baseline phase of some participants weaken the ability to determine the causality of behavior improvement. Last, the use of an AB designs weakens the ability to generalize the conclusions of individual participant's data.

Because an AB design study indicated weak internal validity, a multiple-baseline design was used to strengthen the internal validity of this study. The staggering of intervention across five subjects enables the analysis of changes in behavioral and reading progress at the time of intervention implementation. Data collection across

multiple settings and multiple practitioners increases the internal validity of the study by demonstrating effects regardless of a variety of confounding factors. The use of multiple measures also strengthens the design by allowing demonstration progress across a variety of measures. Strong reliability of DBRC measures and frequent fidelity checks during intervention phase increase the study's internal validity.

External Validity

Transferability and Maintenance

Because of the use of the intervention during all academic settings, transferability of targeted skills to other settings such as other school times and locations (e.g. recess, music, lunch) are likely. Parent participation in the intervention increases the transferability of targeted skills to non-school settings. Skill maintenance as students continue through the school-year and move to the next grade is likely because of consistence of intervention expectations through-out the campus. All grade levels use the same school-wide expectation and DBRC scales. School-wide expectations frequently taught and reinforced for all kids throughout the year.

Generalizability

The behaviors targeted in this study are common among many students with or at-risk for EBD, making the generalizability of this study high. During the study, multiple practitioners participated in the delivery of intervention, increasing the likelihood that practitioners outside the study would experience similar results. The use of five participants with lagged implementation of intervention provides enough data to reasonably infer the results could be replicated within a larger population of students

with similar struggles. Because the intervention requires few resources, including time, materials and staff resources, it should be reproducible in a variety of settings.

Procedures

All students were screened for at-risk behaviors using the school-wide expectation online screener. Each teacher rated their students based on behavioral performance in six areas that included respect, responsibility, effort, attitude, caring and cooperation, and honesty. Each behavioral area was defined and scaled by the campus PBS team before teachers screened each student in their class (see Appendix C).

From the school-wide expectation on-line screener, multiple students were identified as at-risk for behavior and academic difficulties. Students that had already been placed into a special education behavior inclusion program were eliminated from the list of students eligible for intervention. The remaining students were brought to committee for discussion. The committee members included the principal, assistant principal, school psychologist, counselor, behavior inclusion teacher, behavior coach, and the students' classroom teacher. At the end of the meeting, 6 students were identified for intervention.

The campus PBS committee created a set of goals for each student based on student need. Student goals were scaled into categories labeled "5", "4", "3", "2", and "1" (see Appendix C). Each participating teacher received a copy of the behavioral scale to view during each daily student rating. Each student would receive behavioral feedback from their classroom teacher a minimum of four times per day.

Before beginning goal monitoring, all teachers who were in contact with students in intervention were required to attend training in which instruction was deliver on rating behaviors and providing corrective feedback procedures. During the training, the trainers modeled appropriate feedback behavior as well as inappropriate feedback behavior. Appropriate feedback focused on times when students display target behaviors and gave information on how to improve in the future.

As part of the interventions, all students were required to check in and out each day with a mentor teacher chosen by the PBS team. Mentor criteria included teachers that easily build positive relationships with students, teachers who were available before and after school, and teachers that had at least an average understanding of computer technology. Substitute mentors were also identified to take the place of mentors on days they were absent.

Mentors were asked to meet with students immediately after they arrived at school each morning to provide and review the student's DBRC and provide any needed supplies. This allowed each student to be prepared for the day and provided non-contingent positive attention to students before they entered the classroom. At the end of each day, all the students returned to the check-out location to receive feedback and reinforcement from mentor teacher. The mentor teacher entered students' daily points from the DBRC into the electronic-daily behavior report card system (Burke & Vannest, 2008) to keep an accurate record of each student's daily points. A copy of the student's DBRC was sent home with the student for a parent signature. Mentors were provided with a checklist to ensure they completed each step on a daily basis (see Appendix E).

CHAPTER III

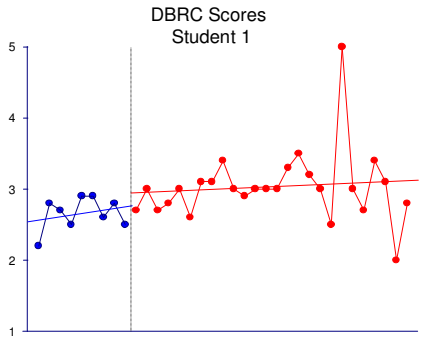
RESULTS

During this study, behavior and reading improvement were observed using two dependent measures, DBRC data of school-wide expectation and direct observation data of off-task and disruptive behavior. This data was used to determine whether a behavior intervention package was effective in improving behavior performance and subsequently reading acquisition. This data from both dependent measures were then compared to determine the similarity of results from each measure.

Research Question 1

The first research question asks what are the effects of behavior monitoring program on student behavior? The effectiveness of this intervention was measured by both dependent measures. Dependent measures generally indicated a varied amount of progress, although DBRC and direct observation measure produces differing results. The results for each student are detailed below.

FIGURE 2
Student One DBRC Data



Visual Analysis

Visual analysis of student one indicates small improvement over baseline during the intervention stage (see Figure 2). Data variability increases from the baseline to intervention as well as from the beginning of intervention to the end of intervention. This variability reduces the ability to determine positive effects of the intervention. From visual analysis alone, many data points seem to be improved when overlapping points are removed. Finally, the line of regression during intervention phase flattens slightly, further confusing possible positive results.

Statistical Analysis

A simple mean shift (SMS) analysis was performed on A versus B phases because the data showed no clear, stable improvement trend. An SMS analysis summarizes the mean difference or shift between baseline and intervention phases, while considering the data spread or variation within each phase. The analysis was performed within the regression module of NCSS statistical package. DBRC scores were designated the dependent variable (Y), and dummy-codes for Phase were the independent (X) variable. The analysis resulted in an R2 effect size (which ranges 0 to 1), and a p-value, which tells the probability of obtaining the effect size by chance alone.

Subsequently, an Improvement Rate Difference overlap analysis (IRD; Parker, Vannest & Brown, 2009) was conducted on A versus B phase to measure percent of non-overlapping data between phases. This non-overlap index (IRD) is a marked improvement over the older PND index (Scruggs & Mastropieri, 1994). Data overlap is defined as a phase A score which is higher than a phase B score. When all phase B data

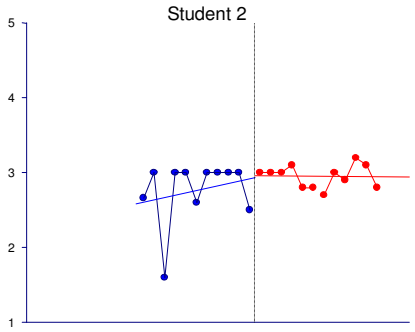
are higher than all phase A data, the results have 100% non-overlap. Chance level improvement from phase A to B is 50%, so non-overlap results tend to be high. Advantages of a newer non-overlap index (IRD) are: 1. it matches visual analysis, 2. it is distribution-free, saddled with minimum data distribution assumptions, 3. it can be done by hand.

Using SMS analysis, NCSS produced a weak effect size of .1201 with a P-value of .0414. This P-value indicates a reasonable certainty that the effect size is not a result of chance alone. There is also a 40% IRD between baseline and intervention phase, but confidence intervals indicate a large range of possible IRDs. The data indicates that within 90% certainty the true IRD is somewhere between .4017 and .6637. As discussed in visual analysis, DBRC measures indicate very little improvement between baseline and intervention phase (see Table 1).

TABLE 1
Statistical Analysis of DBRC Measures

Student	Analysis	Effect Size	P-Value	Analysis	Effect Size	Confidence Range
Student 1	SMS	.1201	.0414	IRD	.4017	.0605 - .6637
Student 2	SMS	.0449	.3202	IRD	.3750	.0070 - .6501
Student 3	Allison technique	.0907	.5651	NAP	.5227	

FIGURE 3
Student Two DBRC Data



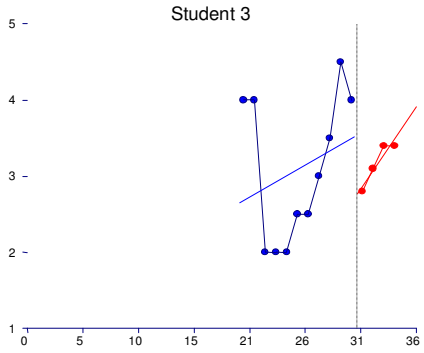
Visual Analysis

Visual analysis of student two's data indicates no intercept gap between baseline and intervention phase (see Figure 3). Further visual analysis indicates stable data throughout baseline and intervention. Variability during intervention decreases slightly, but not enough to derive meaningful change. The line of regression during intervention phase flattens slightly indicating no improvement, but neither trend line in either phase indicates substantial improvement or deterioration. From visual analysis alone, no improvement can be seen with this student.

Statistical Analysis

Again, because of no clear indication of positive baseline trend, an SMS and IRD analysis was conducted for student two. An SMS analysis produced and R^2 of .0449 with a P-value of .3202. This indicates we can be moderately sure of weak to no effects of intervention of behavior. There is a 37.5% IRD between phases, but confidence levels again indicate a wide range of possible effect sizes. Confidence levels at 90% indicate results between .0070 and .6501. Similar to student one, DBRC data indicates that little to no behavior change occurred during intervention phase (see Table 1).

FIGURE 4
Student Three DBRC Data



Visual Analysis

Visual analysis of student three's data is difficult to determine due to the high degree of variability and lack of intervention phase data (see Figure 4). The intercept gap indicates deterioration during intervention phase, but the change in the slope of the regression line indicates a progress after implementation of the intervention. Further statistical analysis is needed to make any conclusions from this data set.

Statistical Analysis

Because pronounced, credible positive improvement trend was noted in the baseline, the A vs. B phase contrast in data for student 3 had to be corrected. Positive baseline trend will tend to cause over-estimation of treatment effects, both in visual and statistical analysis. The correction method is originally by Allison & Gorman (1993), and improved by Parker, Cryer and Burns (2006). This "Allison" method, which can be carried out as "simple mean shift" or a "mean and trend shift", semi-partials positive

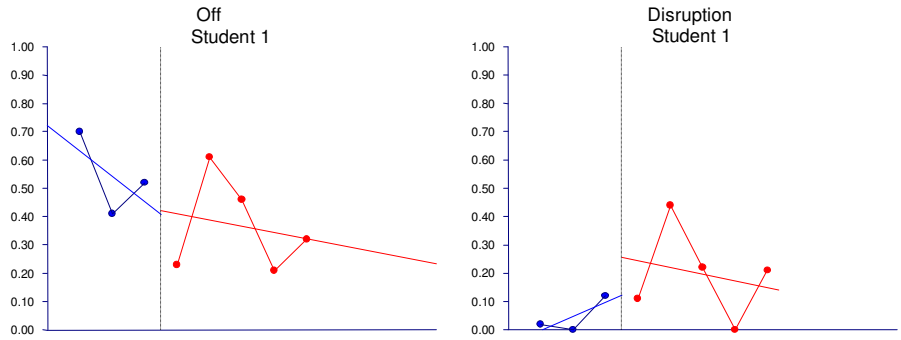
baseline trend out of both baseline and intervention phases. Thus, it transforms the entire dataset. The resulting data and analysis reflect what might have occurred had there been no positive baseline trend. The improvement by Parker et al. just minimized the amount of graphed data change, so the transformed data appear more like the original.

A Non-Overlapping of all Pairs analysis (NAP; Parker & Vannest, in press) was conducted on A versus B phase to measure percent of non-overlapping data between phases. As with IRD, NAP is also a marked improvement over the older PND index (Scruggs & Mastropieri, 1994) for similar reasons. In NAP analysis, data overlap is defined as a phase A score which is higher (in an improvement direction) than a phase B score. When all phase B data are higher than all phase A data, the results have 100% non-overlap.

Allison MTS calculations resulted in an effect size of .0907 with a P-value of .5651, which means chance-level results. This result indicates a substantially weak effect size, but with weak certainty of the accuracy of the effect size. NAP analysis resulted in an effect size of .5277 indicating little to no improvement between phases (see Table 1). As with both students above, DBRC data for student 3 indicates little to no behavior improvement during intervention phase.

Direct observation data was also collected on off –task and disruptive behaviors using a momentary time-sampling technique (see Appendix D). Behavior improvement would result in a decreasing trend as a result of less observed off-task or disruptive behavior.

FIGURE 5
Student One Time-Sampling Data



Visual Analysis

Visual analysis of student 1's off-task behavior shows an improving trend during baseline and intervention phase (see Figure 5). High variability during intervention phase makes visual analysis more difficult. Slope decreases slightly during intervention phase. Further analysis is needed to determine off-task behavior improvement for student 1. During baseline, disruptive behavior showed a deteriorating trend. A noticeable intercept gap occurred between phases with a subsequent improving trend during intervention phase. Visual analysis indicates improvement of disruptive behavior during intervention phase.

Statistical Analysis

To correct for improving baseline trend, an Allison MTS was conducted for off-task behavior data. The Allison MTS produced and substantially weak effect size of .0072 with a P-vale of .9821 meaning results most likely due primarily to chance. A NAP overlap analysis was also conducted producing an effect size of .8000. Because of

the likely-hood of chance results, this data does not allow us to determine the effectiveness of the intervention on off-task behavior.

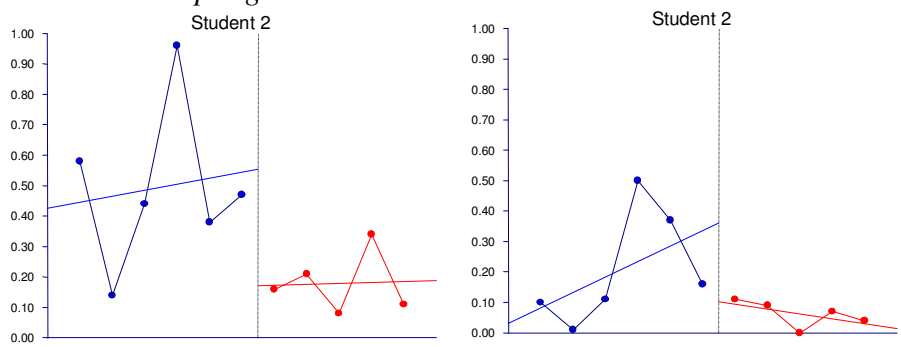
Because the intervention phase (B) for disruptive data showed clear and stable improvement trend, a Mean and Trend Shift (MTS) analysis was conducted (on A versus B phases). If that trend were not modeled (as in a simple mean shift model), the effect size would be substantially reduced. The point of using the MTS model is to give effect size credit for both a jump in level between phases, and for the improvement in trend line slope. The analysis was performed within the regression module of NCSS statistical package. Scores were designated the dependent variable (Y), and the two independent variables were Phase (input with letter codes) and Time. The MTS analysis fits trend lines to the two phases independently of one another. The analysis resulted in an R2 effect size (which ranges 0 to 1), and a p-value, which tells the probability of obtaining the effect size by chance alone. A NAP overlap analysis was also conducted to account for overlapping data.

The MTS analysis produced a small effect size of .2781 with a P-value of .4427. This indicates there was little behavior improvement between baseline and intervention phase. The P-value indicates that disruption data is not very reliable and has a high probability of being chance results. NAP analysis resulted in .2333 indicating that behavior did not improve between phases (see Table 2).

TABLE 2
Statistical Analysis of Momentary Time-Sampling Data

Student	Measure	Analysis	Effect Size	P Value	Analysis	Effect Size	Confidence Range
Student 1	Off-Task	Allison MTS	.0072	.9821	NAP	.8000	
	Disruption	MTS	.2781	.4427	NAP	.2333	
Student 2	Off-Task	SMS	.3987	.0372	IRD	.8167	.2739 - .9791
	Disruption	MTS	.3228	.2104	NAP	.8167	
Student 3	Off-Task	SMS	.7042	.0047	IRD	1.000	.4223 – 1.000
	Disruption	SMS	.6925	.0054	IRD	.7750	.1593 - .9740

FIGURE 6
Student Two Time-Sampling Data



Visual Analysis

During baseline phase, student 2 shows a deteriorating trend in both off-task and disruptive behavior (see Figure 6). Also for both off-task and disruptive behavior, student 2 shows substantial intercept gaps and reduced variability during intervention phase. For both behavior types, the deteriorating trend line seen in baseline phase changes to a flat or slightly improving trend line with improved means during

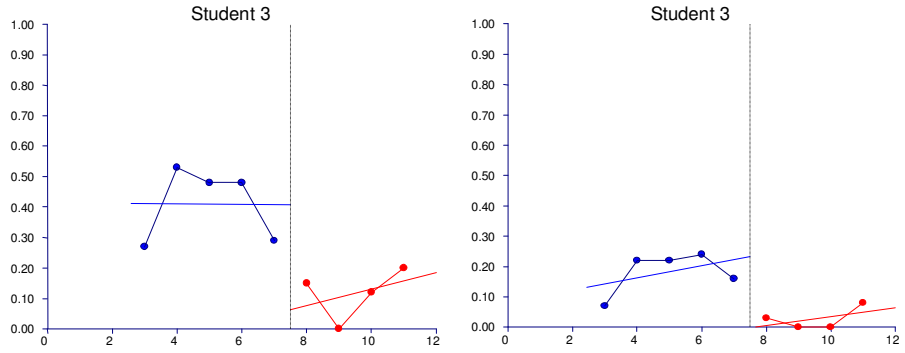
intervention phase. Visual analysis indicates behavior improvement during intervention phase for both off-task and disruptive behavior.

Statistical Analysis

Because no trend was detected during intervention phase of off-task behavior, SMS and IRD analyses were conducted. SMS analysis indicated and minimal R^2 effect size of .3987 with a P-value of .0372. This indicates some, but not substantial behavior improvement occurred during intervention phase with a high probability that those results were not due to chance alone. An IRD analysis indicated an effect size of .8167 with a confidence range of .2739 - .9791. An effect size of .8167 indicates substantial improvement during intervention phase, but the confidence range is large and makes that large effect size less believable. Because SMS produced a more reliable results, statistical analysis indicates and minimal to moderate behavior improvement.

Because visual analysis did indicate trend during intervention phase for disruptive behavior, MTS and NAP analyses were conducted. MTS analysis indicates an effect size of .3228 with a P-value of .2104. This indicates some, but not substantial behavior improvement occurred during intervention. The P-value indicates the results achieved would occur by chance in approximately 1 out of 5 cases. NAP analysis resulted in an effect size of .8167. The overlap analysis indicates a substantial behavior improvement during intervention phase when overlapping data is removed. Visual and statistical analyses indicate moderate improvement of behavior during intervention phase (see Table 2).

FIGURE 7
Student Three Time-Sampling Data



Visual Analysis

Visual analysis of student 3's off-task and disruptive behavior data indicates substantial improvement from baseline to intervention phase (see Figure 7). Bother sets of data have large intercept gaps between phases and little to no overlapping data points. During baseline and intervention phases, data is fairly stable, making visual interpretation more feasible.

Statistical Analysis

Because of the lack of improving trend during intervention phase, SMS and IRD analyses were conducted for both behavior types. SMS analysis on off-task behavior resulted in an effect size of .7042 with a P-value of .0047. This indicates substantial behavior improvement during intervention phase with an almost certain probability that results were not due to chance alone. IRD analysis resulted in an effect size of 1.000 with a confidence range of .4223 – 1.000 (see Table 2). This indicates that no data points were overlapping between phases. IRD confidence levels are large, but still indicate a

high likelihood of behavior change during intervention. SMS analysis of disruptive behavior resulted in an effect size of .6925 with a P-value of .0054. This indicates substantial behavior improvement during intervention phase with a very low probability that results were due to chance along. An IRD analysis produced an effect size of .7750 with a confidence range of .1593 - .9740 (see Table 2). This indicates a substantial behavior change during intervention, but the large confidence interval makes the data less certain. With all statistical information combined, student 3 likely had substantial behavior improvement during intervention phase.

Research Question 2

Do teacher-rated DBRCs agree with direct observation data of on-task or disruptive behavior? When comparing dependent measures of behavior improvement, agreement between the behavior profiles is lacking (see Table 3). Lack of agreement can be partly accounted for by the lack of reliability during direct observation time sampling data. Weak reliability reduces the strength of comparison due to untrustworthy data, regardless of the level of agreement. Beyond weak reliability, p-values for both sets of dependent measures are frequently within chance levels. Again, the weak p-value levels make data comparison inconclusive regardless of data agreement.

Despite reliability and chance-level results, DBRC data during this study indicated drastically lower behavior improvement on all students as compared to direct observation time-sampling data. Both measures have different, but equally confounding flaws. Time-sampling data has low reliability and few data points, making the visual and statistical analysis questionable. DBRC data has low fidelity of implementation and

chance-level results. Because of flaws in data measurement and results, the answer to research question 2 is inconclusive.

TABLE 3
Effect Size Differences between Measures

Student	Measure	Time Sample Effect Size	DBRC Effect Size
Student 1	Off-Task	.0072	.1201
	Disruption	.2781	
Student 2	Off-Task	.3987	.0449
	Disruption	.3228	
Student 3	Off-Task	.7042	.0907
	Disruption	.6925	

Research Question 3

Does behavior improvement lead to an increased in reading acquisition? DIBELs Oral Reading Fluency (ORF) measures were conducted to look for improvement in reading acquisition rates. Available historical data was gathered from three benchmark administrations prior to intervention. One ORF probe was conducted after the intervention as a post measure to evaluate reading improvement.

Reading data for all three students showed little progress across time (see Table 4). Although only few data points are available because of the nature of a pre-post measure, student 2 and three had deteriorating trends in reading acquisition. All three students showed an increase in ORF data after intervention phase, but the increase was minimal and unlikely to be significant. Student reading fluency did not increase at a rate to keep students reading acquisition rates similar to their average developing peers and further did not increase at a rate to make up for any pre-existing gaps in reading

performance. Overall, DIBELs ORF data did not indicate any significant reading improvement during this study.

TABLE 4
DIBELs ORF Scores

Student	Spring '08	Fall '08	Winter '08	Spring '09
Student 1	110	111	118	120
Student 2	Not Available	59	50	61
Student 3	96	95	98	101

CHAPTER IV

SUMMARY

The purposed of this student was to determine the effects of a CICO/DBRC behavior intervention on student behavioral performance and reading acquisition. The study was also intended to compare the results of DBRC and direct observation data. Using a multiple-baseline A/B design, students were provided with a mentor teacher who met with each student twice daily as well as frequent and explicit behavioral feedback throughout the day delivered by the classroom teacher. Positive reinforcement was also provided when student's met their daily goals.

Reliability

During this study, lack of reliability in direct observation measures greatly affected the ability to answer all research questions. Reliability was difficult to obtain for direct observation data due to the participation of four different outside-observers during the time-sampling reliability data collection. With the exception of data collected for reliability purposes only, direct observation data was collected by one observer during the entire study. The primary data-collector had substantially more experience in data collection processes than the reliability collectors, which allows for the possibility that direct observation data is more accurate that reliability measures would indicate.

Effectiveness of Intervention

Many factors likely effected intervention outcomes. Prior to intervention, student selection was based on a multitude of factors, but the weight of some factors outweighed others in the eyes of the team. During discussion, the team considered teacher opinion

above other factors. By minimizing the use of data for decision-making, some students who were selected for intervention were possible less appropriate candidates for intervention. Teachers indicated frustration with the student as a major factor for needing intervention. This allows student selection to be based on teacher tolerance level instead of student need. Increased used of data-driven processes could lead to more appropriate student selections.

Fidelity of implementation could also be a factor on intervention outcomes. No fidelity checklist was conducted as a part of this study. Although frequent visits to the classroom occurred, there is no measure of how accurately the intervention was implemented on a daily basis. Based on informal observations, implementation fidelity varied depending on teacher mood, student behavior and classroom activities. Fidelity of implementation should be considered when viewing the results of this student.

The rating scale used as part of the DBRC had substantial influence on student outcomes. As the campus team developed the scale, participants created a comprehensive definition of each behavior in the REACH acronym. In order to be comprehensive, the team minimized the need for a concise and clear definition. The length and breadth of the intervention likely cause less dependence on the scales definition and more dependence of highly varied teacher perceptions and expectations.

Teacher Feedback

During informal discussion with teachers, all three teachers indicated moderated to substantial improvement in student behavior. Teachers indicated the intervention was easy to implement and that time requirements were minimal and doable in a small

amount of time. One teacher indicated that student behavior occurred primarily in unmeasured settings such as lunch and recess, so behavior improvement may not be included in the measure used during this study. During reliability collection, many teachers indicated rating differently than the outside observer "because it was a good day for that student" instead of rating based on the scale. Comparing the student's behavior to previous behavior leads to inaccurate ratings, as many times good behavior for a struggling student is not the same as good behavior for the average student.

Variability of Results Between Measures

The drastic difference between DBRC data and Time-sampling data can be explained by a few key factors. First, time sampling data depended on concise operational definitions of very specific behaviors whereas DBRC used a more comprehensive scale to define six abstract and interpretable behaviors. It is possible that the two measures were in fact measuring different behaviors. Most likely, DBRC data is the less accurate measure partly because of the scaling factors mentioned previously. Because of the length of the scale, teachers were resistant to reading and using the scale on a daily basis. The delineation of points on the scale was not always clear.

Another factor in the varying results between dependent measures is the skill level of the teacher. During most intervention, Special Education teachers participated in intervention development and measurement. During this study, General Education teachers were the primary participants in intervention. Special Education teachers have frequent and specific training on the skills needed to correctly implement and measure DBRC interventions, but for General Education teachers, intervention implementation

and measurement is a new of infrequently practiced skill. More training and support was needed for the General Education teachers to be able to understand the importance of consistency, fidelity and preciseness of intervention in order for it to be effective.

Reading Acquisition

Reading improvement that can be reasonable correlated to the intervention is not determinable due to the lack of clear behavioral effects subsequent to intervention. Regardless of the results of the behavioral intervention, the reading data for all three students showed little to no progress. This may be partially due to some of the students participating in the intervention were not significantly below grade level. The measurement probes used to indicate reading progress were also not sensitive enough measures to indicate reading improvement in a limited period of time. More sensitive measures and more frequently probing of student progress would be needed to accurately measure student improvement. It is still likely that if behavioral interventions decrease off-task and disruptive behavior, that academic improvements would also follow, but further research is needed to determine how quickly and to what extent improvement is due to behavioral interventions.

Implications to Field

Much research has already been conducted on the accuracy of DBRCs as behavior measures for specific and individual student behaviors. Currently some research has indicated similar behavior profiles from DBRC and direct observation measures. These studies have been conducted exclusively with individual, tier-3 type behaviors, usually within a Special Education setting. This study indicates that

agreement between DBRC and direct observation measures may be more difficult to obtain when working with less severe behaviors because the level of skill and training required defining and scaling more general school-wide expectations. The increased scaling and measurement errors may be due in part to the skill set and knowledge base of general education teachers. Though Special Education teachers receive training and practice in intervention development, implementation and measurement, many general education teachers are infrequently exposed to such processes. More training and support may be required for implementing DBRCs with general education teachers or students falling within the tier-2 level of support.

This study has also uncovered the need to further investigate the integration and systemization of DBRC measuring performance of school-wide expectations with at-risk students. Using school-wide expectations as a basis for feedback and reinforcement allows campuses to fully align their behavioral systems of support at all tiers. This alignment allows students to freely move up and down the pyramid of intervention as needed while providing appropriate continuity of support through transitions between tiers.

As schools across the nation move towards and Response to Intervention model of support, much of the data gathered throughout the intervention process can and should be used to make high-stakes decisions such as disability entitlement and special education placement. In order for campuses to make such high-stakes decisions, staff must have reasonable assurance that the data used to make eligibility or placement decisions is reliable and valid. This study helps begin the discussion of reliability and

validity issues within behavioral data collection. Unlike academic probes in reading or math, behavior data has a tendency to be value-laden, biased and emotionally driven. Subjective data tools that allow for quick and concise behavior screening and progress-monitoring are needed for behavior support to be implemented within a true RtI model.

Further Research

Because DBRCs have been shown as effective interventions in prior research, more research is needed to discover all the ways in which DBRCs can be effective as an intervention and as a measurement tool. Using DBRCs as a Tier 2 intervention within and RtI model of tiered support shows promise, but requires more information on effective approaches and appropriate data collection tools. Lastly, more research is needed to discover the ways in which behavior and academics, specifically reading acquisition, intertwine.

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APPENDIX A

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Benchmark 3

DIBELS Oral Reading Fluency

When I say "begin", start reading aloud at the top of the page (point). **Read across the page** (point). **Try to read each word. If You come to a word you don't know, I'll tell it to you. Be sure to do your best reading. Ready, begin.** At the end of 1 minute, place a bracket(]) after the last word read and say "**Stop**".

Ice Cream

It's so hot. Ice cold ice cream cools me off. I like	12
strawberry the best, but rocky road is good, too. My brother	23
likes bubble gum and vanilla.	28
The ice cream man comes down our street in the	38
summer. He has drumsticks, ice cream bars, and bonbons. I	48
like bonbons best.	51
When he gets close he toots his horn. All the kids hear	63
the horn. They get some money and go outside to wait. They	75
sit on the sidewalk until he comes. They want to buy	86
something to eat. His ice cream tastes good.	94
But the best ice cream of all you can't buy. My mother	106
makes it. She uses our old ice cream freezer. She puts milk,	118
sugar and eggs inside.	122
I get to turn the handle. She puts lots of ice inside. My	135
hand gets cold. It takes a long time. My arm gets very tired	148
turning the handle. But then it is ready to eat. And my mom	161
lets me lick the dasher. I think the very first taste is the best.	175
Yum! That's the best part of all.	182

TOTAL: _____

APPENDIX B

Daily Behavior Report Card

Date _____	Breakfast	Language / Writing	Math	Lunch	Recess	Read Aloud / Writing	Specials	Snack / Social St. /Science	Pack-up
Respect									
Responsibility									
Eagerness to Learn									
Awesome Attitude									
Caring & Cooperative									
Honest Always									

Today I forgot to:	Today I remembered to:
Please talk to me tonight and **practice with me.**	Please talk to me tonight and **praise me.**

Teacher Signature: _____

Parent Signature: _____

Check in/out Initials:

In _____

Out _____

Adapted from Vannest, Soares, Adiguzel, *e-DBRC* (2006).

APPENDIX C

	4	3	2	1	0
REACH	Exceeding expectations		Meeting expectations		Not meeting expectations
Responsibility The students will have necessary materials and be on time	All work completed on time Has necessary materials Uses materials appropriately Following directions the first time		Most of the work completed on time Follows directions given between 1-2 prompts Has most materials needed Uses materials appropriately when prompted		Must be asked 3 or more times to comply with directions Does not comply Stops instruction to obtain assistance in locating materials Repeatedly does not complete work Missing most materials Doesn't use materials appropriately
Respect The student's words and actions are fair and polite	Allows others to speak, share, and work uninterrupted Uses polite language such as "please" and "thank you" Allows others to work with out distraction Keeps whole self and all objects to themselves Uses "I messages" Keeps grades, book levels, and other personal information to themselves		Uses polite phrases such as "please" and "thank you" and "I messages" when prompted Occasionally interrupts others Keeps whole self and all objects to themselves Allows others to work with out distraction but may need to be prompted		Refuses to use polite phrases Utilizes a sarcastic tone Frequently interrupts Calls people names Doesn't keep whole self and all objects to themselves Doesn't allow others to work with out distraction Brags about grades and book levels. Displays rude body language such as eye rolling and huffing
Eagerness to Learn The student will	Raises hand to participate Contributes to class Promptly begins work Uses active listening strategies		Occasionally volunteers to answer Contributes when prompted Stays on task and uses		Does not respond when called on Off task Doesn't participate Doesn't attend to instruction

actively listen and participate	⁜ Actively seeks knowledge ⁜ Stays on task ⁜ Contributes and enriches the lesson		active listening strategies when prompted		
Awesome Attitude Students will always do your best	⁜ Continues to work even with a difficult task ⁜ Actively seeks solutions before asking teacher for assistance ⁜ Responds appropriately to correction and feedback. ⁜ Sees failure as a learning opportunity ⁜ Positive (up beat)		⁜ Asks teacher for assistance before trying to problem solve on their own ⁜ Requires encouragement when faced with a difficult task		⁜ Gives up ⁜ Doesn't seek or accept help ⁜ Doesn't respond well to feedback (shuts down / throws a fit)
Caring Cooperative The student's words and actions are caring, helpful and kind	⁜ Offers help to others ⁜ Encourages others ⁜ Willingly includes others ⁜ Shows empathy ⁜ Is a good sport ⁜ Wins and looses gracefully		⁜ When prompted: encourages others includes others shows good sportsmanship		⁜ Doesn't participate in groups ⁜ Fights / Argues with others ⁜ Poor sport ⁜ Calls others names ⁜ Excludes others ⁜ Bullies others
Honest Always The student will be truthful in words and actions	⁜ Admits mistakes and is truthful ⁜ Completes own work ⁜ Takes ownership for actions and words		⁜ Takes ownership for actions and words when prompted ⁜ Completes own work ⁜Admits mistakes when prompted		⁜ Blames others ⁜ Makes excuses ⁜ Doesn't take ownership for actions and words ⁜ Doesn't complete own work ⁜ Shares answers with others

APPENDIX D

Behavior Observation Form

Student: M/F: Grade: Date:
Observer: Class Activity: Teacher:

Directions: For each box, complete a 10-second, partial interval recording process. Observe target student and a peer of the same gender, changing peer each 3 minutes. Indicate the presences of the behaviors described below with the appropriate code. Collect a full 15 minutes of data on target student.

Target																		
Peer																		
Target																		
Peer																		
Target																		
Peer																		
Target																		
Peer																		
Target																		
Peer																		

<u>Operational Definitions:</u>

Off-Task Codes: (O)

- Eyes not on task or teacher
- Playing with items on desk
- Out of desk
- Doing activity other than assigned task

Disruption: (d)

- Making faces at peers
- Making noises
- Throwing items
- Talking with peers

APPENDIX E

Mentor Checklist

Check-in

- € Obtain parent-signed DBRC from the night before (if applicable
- € Ask student about the night before and the morning
  - o "How was your evening last night? What did you do after you got home from school yesterday?" OR "How was your morning this morning? What have you done before you came to school this morning?"
  - o If student is already displaying signs of struggling, talk through situation with student
- € Check student's supplies, make sure they have pencils, paper and are prepared for school
- € Give student their new DBRC
- € Talk over behavior expectations for the day
  - o "Remember, today we are working on being prepared and being respectful. Can you tell me what being prepared in class would look like? What does being respectful to others look like? Sound like?"
- € Discuss student's behavioral goal(s) for the day
  - o "Today our goal is to get 30 points. I know you can do that" OR "Today our goal is to get above a 2 in every class. "

Check-out

- € Ask for student's DBRC
- € Input teacher ratings into the system
- € Discuss with students the areas where they met expectations (4 or 5s)
  - o "I saw you got a 5 in Math. What things did you do that caused you teachers to give you a 5?"
- € Reflect with students areas where they did not meet expectations (1 or 2s)
  - o "I saw you got a 2 in English. What happened during that class? What can you do tomorrow?"
- € If student has met their daily goal, provide them with praise the tangible reinforcer of their choice.
  - o "Great job today. I was so proud of your when I saw you got a 3 or above in every class! You are doing so well. Also, here is the pencil you picked out if you met our goal for today!"
- € Remind students to get their sheet signed and bring it back the next day (if applicable)

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