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# Embedding Elements of Positive Behavioral Interventions and Supports (PBIS) in a Summer Program

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# Embedding Elements of Positive Behavioral Interventions and Supports (PBIS) in a Summer Program

Laura Ruberto, PhD

University of Connecticut, 2015

Summer programs are one of many out-of-school time opportunities offered to students. Out-of-school time programs are valuable to communities as they offer a supervised environment during times when risky behaviors can be prevalent and have potential to promote academic and socio-emotional growth in the nation's youth (Zief & Lauver, 2006). Although federal mandates highlight a multitude of academic, enrichment, and family engagement objectives, less emphasis is placed on behavioral needs of students in out-of-school time programs (Afterschool Alliance, 2012). Furthermore, evidence suggests that behavioral support is needed in out-of-school time programs (Connecticut Commissioner on Education, 2008); yet, staff are often unequipped with the training to effectively manage the behavior of program participants (Grossman, Campbell & Raley, 2007). This study utilized an intervention including an hour long training and performance feedback delivered by the researcher to teach out-of-school time staff how to implement core elements of positive behavioral interventions and supports. This training package was used to increase the use of specific staff behaviors including reinforcement, specific feedback, and reference to behavior expectations and to concurrently improve student behavioral outcomes. A single-subject multiple baseline design across five participants was employed to evaluate improvements in staff behaviors and changes in student disruptive behaviors. Results indicated moderate effects in staff behaviors including reinforcement to correction ratios, use of specific feedback, and reference to behavior expectations. Inconclusive results were observed

with regard to student disruptive behaviors. These results provide preliminary evidence for a training framework incorporating elements of positive behavioral interventions and supports to improve staff behaviors related to behavior management in summer programs. Implications for research and practice and future research directions in this area are discussed.

Embedding Elements of Positive Behavioral Interventions and Supports (PBIS) in a Summer  
Program

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B.A., Ohio University, 2010

M.A., University of Connecticut, 2011

A Dissertation

Submitted in Partial Fulfillment of the

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2015

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2015

APPROVAL PAGE

Doctor of Philosophy Dissertation

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## **Chapter I: Introduction**

### **Statement of the Problem**

Approximately six and a half million students participate in out-of-school time programming nationally (OST; Little, 2007). Although OST programs have the potential to positively affect students, research indicates mixed results on the actual impact of OST programs on youth (Zief & Lauver, 2006). Furthermore, the increase in funding and the expansion of programs over the past few years has highlighted the need to pinpoint the practices that make OST programs successful across a variety of domains.

OST programs are federally mandated to provide supports such as academic, enrichment, and recreational, yet limited emphasis is placed on behavioral needs of students in OST programs (Afterschool Alliance, 2012). Though little is known about behavior management in OST programs (Afterschool Alliance, 2012), the evidence that exists suggests that student behavior can affect program climate, and OST staff not only lack training, but also report desiring professional development in this area (Grossman, Campbell & Raley, 2007; Irwin, Tobin, Sprague, Sugai & Vincent, 2004). Therefore, effective training and support for OST staff in the area of behavior management is necessary in the pursuit of a high-quality program. Likewise, it is imperative that the training program be comprehensive and well-suited to meet the needs of OST programming, such as serving at-risk youth.

Positive behavioral interventions and supports (PBIS) is a possible framework to guide OST staff training. The flexibility of the PBIS framework, its evidence base in similar settings, and its potential to improve academic and behavior outcomes makes it well suited to meet the multifaceted objectives of OST settings (Sugai & Horner, 2009). Additionally, there is evidence for performance feedback (PF) as an effective tool to increase staff implementation of

intervention components (Pisacreta, Tincani, Connell & Axelrod, 2011; Reinke, Lewis-Palmer & Martin, 2007; Sutherland, Wehby, and Copeland, 2000).

### **Purpose of the Study**

The purpose of this study was to assess the extent to which OST staff members could implement core PBIS components in a summer program with researcher support, and whether consistent implementation of these strategies would result in a decrease in student disruptive behaviors. Results from this study also look to (a) provide support for use of PBIS components within OST settings, (b) further analyze the efficacy of the Positive BOOST manual and curriculum for use in OST settings, and (c) expand the limited literature base in the area of behavior management in OST settings.

It was hypothesized that the training program combined with PF would result in improved staff implementation of several practices encompassed within the PBIS framework including: a desired reinforcement to correction ratio, an increase in the rate per minute of specific feedback statements delivered to students, and an increase in the rate per minute participants referenced behavior expectations within their specific feedback statements. As a result of this implementation, it was hypothesized that average observed student disruption would decrease as well.

## **Chapter II: Review of the Literature**

### **Characteristics and Outcomes of OST Programs**

OST refers to the hours in which children are not participating in activities mandated by school attendance (National Institute on Out-of-School Time [NIOST], 2009; Lauer et al., 2006). During this time, children often attend OST programs that can include summer programs, youth development programs, mentoring opportunities, and afterschool programs, among others (NIOST, 2009); however, the most commonly attended OST programs are afterschool and summer programs (Lauer et al., 2006).

OST programs can be valuable to communities because they provide a safe environment for students during a time when risky behaviors are prevalent or adult supervision is not possible (Zief & Lauver, 2006). Additionally, OST programs have the potential to increase school attendance and engagement (Little & Harris, 2003), increase motivation and academic gains (Mahoney, Lord & Carryl, 2005; Zief & Lauver, 2006), and promote academic and socio-emotional growth (Zief & Lauver, 2006). OST programs have also resulted in an increase in prosocial behaviors and a decrease in aggression and conduct problems (Durlak & Weissberg, 2011). Although the potential for OST programs is vast, not all programs produce positive effects. In fact, some programs even yield null or negative results (Zief & Lauver, 2006). Accordingly, these mixed results, as well as increased public attention on OST programs, have drawn into further question the practices that make programs successful.

### **Focus of OST Programs**

Afterschool and summer programs have been around for many years; yet, the authorization of No Child Left Behind (NCLB) in 2001 focused greater public attention on OST activities. A result of this important legislation was the development of 21<sup>st</sup> Century Community

Learning Centers (21CCLCs). This initiative is dedicated solely to OST programming and provides grants to State Education Agencies across the country to support students in high-poverty, low-achieving areas (Afterschool Alliance, 2012). As of 2011, 21CCLCs provided over 4,000 grants serving nearly 1.6 million children in over 10,000 OST programs nationally (Afterschool Alliance, 2012).

The expansion of programs and the increased allocation of funding have placed greater accountability on programs to support youth in many areas. Specifically, federally funded OST programs are mandated to provide academic support to help students reach state testing standards and to offer additional services related to enrichment, recreation, drug prevention, counseling services, and literacy (Afterschool Alliance, 2012). They are also expected to provide a variety of activities to engage students and families (Afterschool Alliance, 2012). Clearly, OST programs take on many responsibilities and are expected to impact students on many different levels.

Federal legislation clearly designates OST programs as venues for academic support, but there is less emphasis placed on behavioral outcomes of students (Afterschool Alliance, 2012). However, the need for behavioral support in OST programs is apparent. Research suggests that students in OST programs may have more major behavior infractions such as suspensions, expulsions, and office discipline referrals, than the general population (Connecticut Commissioner of Education, 2008). Additionally, OST staff often report many challenges in effectively managing group behavior in OST programs (Grossman et al., 2007). In fact, OSTPs surveyed in Connecticut ranked “improving student behavior” as their third most important program goal (out of 10) below only “providing a safe place for youth” and “improving academic achievement” (Palmer, Johnson, Anderson, & Sabatelli, 2010). These results suggest



that problem behavior is occurring in OST programs, and OSTPs are reporting it as a top area of concern.

Aside from these demographic and survey findings, there has been little research conducted to measure the amount of problem behavior in OST programs; however, there are several fundamental characteristics of OST programs that lend themselves to foster problem behavior. First, there is an increased likelihood that OST programs serve students in at-risk groups who are more likely to experience behavior challenges (Farrell et al., 2012). Specifically, the federally funded OST programs (21CCLCs) serve only areas that are high-poverty and low-income as exemplified by students receiving free or reduced lunches (Afterschool Alliance, 2012). Research suggests that students from these demographics exhibit higher rates of challenging behavior (Duncan, Magnuson, Kalil, & Ziol-Guest, 2012).

Next, OST programs tend to be unstructured environments. Such unstructured settings are more likely to support problem behaviors (Newcomer, Colvin, & Lewis, 2009). Likewise, Fleming, Catalano, Mazza, Brown, Haggerty, and Harachi (2008) suggest that afterschool settings that are unsupervised and unstructured are related to more instances of problem behavior than adult supervised, structured settings.

There are several implications of problematic student behavior in OST programs. First, research suggests that problem behavior can have a significant impact on academic achievement for students of all ages (i.e. Lassen, Steele & Sailor, 2006; McIntosh, Chard, Boland, & Horner, 2006; Tobin & Sugai, 1999). For instance, McIntosh et al. (2006) found a relationship between problem behavior and student reading performance across elementary school grades, and Tobin and Sugai (1999) found that academic failure was related to the number of major office

discipline referrals received. Therefore, addressing the behavioral needs of students is a prerequisite to reaching the academic goals outlined by federal legislation.

Aside from academic impacts, problem behavior also affects the overall climate of the program (Irwin et al., 2004). This is an important consideration as creating a safe environment is often considered one of the traditional goals of OST programs (Little, Wimer & Weiss, 2008). Addressing the behavioral needs of students is crucial in improving overall program climate and making all students and staff feel safe (Han & Akiba, 2011). Furthermore, research suggests that students in positive climates have better academic and behavioral outcomes (Caldarella, Shatzer, Gray, Young & Young, 2011).

Although behavioral concerns likely exist in OST programs, and these concerns affect individual students as well as the program as a whole, OST staff are often unequipped with the training and skills necessary to effectively manage problem behaviors (Grossman et al., 2007). Dennehy and Noam (2005) assessed the OST workforce and reported a relationship between staff training and program quality. Although research suggests that the level of staff training affects program quality (Scott-Little, Hamann, & Jurs, 2002), OST staff are often from diverse educational backgrounds and training. Furthermore, the range of OST staff preparation spans from formal education to informal experience in a multitude of disciplines, such as social work, education, and psychology. This suggests that OST staff may need further education in specific areas related to OST programming.

One way to address the lack of training for staff and potentially increase retention and recruitment is to provide professional development and ongoing support in areas that are essential to a high-performing OST program. Research suggests that behavior management is one such area (Grossman et al., 2007); however, staff training in this area is often lacking or

nonexistent. Furthermore, there is no research to suggest that existing trainings involve evidence-based strategies. There is a need for an OST staff training package with a strong research base that provides a comprehensive and feasible approach to behavior management. PBIS is a possible framework to guide this training as it is a systems-based approach that can efficiently promote positive academic and behavioral outcomes for many students (Sugai & Horner, 2009).

### **Positive Behavior Interventions and Supports (PBIS)**

PBIS is a “decision making framework that guides selection, integration, and implementation of the best evidence-based academic and behavioral practices for improving important academic and behavior outcomes” (OSEP Technical Assistance Center on Effective Schoolwide Interventions, 2012, p. 1). Thousands of schools nationwide have used PBIS and have experienced positive student outcomes and improved educational climates. Specifically, research has shown that schools implementing PBIS consistently yield positive results such as improved academic outcomes, fewer discipline problems, and improved learning environments (Barrett, Bradshaw & Palmer, 2008; Sugai et al., 2000; Taylor-Greene et al., 1997).

PBIS is conducive to the OST program format for many reasons. First, it is a flexible framework. OST programs are often set-up in a variety of ways; therefore, the flexibility of PBIS would be well-suited to conform to any program structure while also providing room for adaptations. Besides being a flexible framework, PBIS is a way to create structure and consistency in programs (Farrell et al., 2012). As was previously established, OST programs are often unstructured environments which may support problem behavior; therefore, a strategy to increase the structure and predictability in programs would be beneficial.

Next, PBIS fosters positive relationships (Sugai et al., 2000) which are crucial in OST programs. Positive relationships between staff and students have been shown to enhance

learning, decrease behavior problems, and promote social development of students (Grossman et al., 2007). Likewise, research suggests that positive connections between staff and participants are an important quality of a successful OST program (Princiotta & Fortune, 2009). Furthermore, these positive relationships among students and adults are important in creating and sustaining a positive climate (Doll, 2010).

PBIS has also demonstrated decreases in problem behaviors for at-risk students (Hawken & Horner, 2003; Filter et al., 2007). Because OST programs often serve at-risk students (Farrell et al., 2012), it is important to use a strategy that is supported by evidence for this population. Aside from the many positive behavioral outcomes demonstrated by PBIS, there is also promising evidence for PBIS impacting academic outcomes (i.e. Lassen, Steele & Sailor, 2006; McIntosh, 2006; Tobin & Sugai, 1999). Because of the emphasis now being placed on OST programs to improve test scores and achievement, a program that is suited to concurrently address academic outcomes as well as behavioral ones is desired.

Next, some of the fundamental primary level practices that align with PBIS are well-supported within the behavior management literature as individual interventions to decrease problem behavior. Specifically, active supervision, a high reinforcement to correction ratio and the delivery of specific feedback to students have shown to improve student behavioral outcomes (De Pry & Sugai, 2002; Pisacreta et al., 2011; Reinke, Lewis-Palmer & Merrell, 2008; etc.).

Finally, there is some evidence for the use of PBIS in non-classroom settings. Because there are similarities in the nature of OST programs and non-classroom settings, such as the hall, cafeteria, and playground, the likelihood that these positive results would generalize to OST programs is promising.

**Support for PBIS in non-classroom settings.** Although much of the research on PBIS is conducted in classrooms or across schools, several studies have examined the effectiveness of PBIS in non-classroom settings. Lewis, Powers, Kelk and Newcomer (2002) tested the effect of direct teaching of playground behaviors and a group contingency on problem behavior during recess in a suburban elementary school. Results showed a decline in problem behaviors across three recess periods including students in Kindergarten through sixth grade.

Colvin, Sugai, Good and Lee (2001) identified active supervision and precorrection as two additional components of PBIS that are important in non-classroom settings. They examined these strategies during three major transition times in an urban elementary school: entering school, moving to the cafeteria and exiting school. Results suggested that active supervision and precorrection were used more frequently by school staff and disruptive student behaviors during these times decreased. Similarly, Lewis, Sugai and Colvin (1988) targeted disruptive behavior during recess, cafeteria and hallway transition. They implemented direct social skills lessons as well as active supervision, precorrection, and group contingency in specific settings. Results indicated a reduction in problem behavior across each target setting.

Leedy, Bates and Safran (2004) examined PBIS strategies in the hallway in a rural elementary school. They implemented clear and consistent behavior expectations, grade-level assemblies and reinforcement contingent on expectation following behavior. Results showed a substantial increase in appropriate hallway behavior from students.

Although some research conducted in non-classroom settings has yielded positive results, only several studies have examined PBIS components in OST programs. McKevitt, Dempsey, Ternus and Shriver (2012) conducted a study which took place in an eight week summer program for girls ages 5-12. The PBIS intervention included direct teaching of program

behavior expectations and reinforcement for rule following behavior via a token economy. Results showed decreases in behavior incidences; however, staff attrition and a non-experimental research design preclude these results from determining PBIS strategies as the causal factor of behavior change in participants. Additionally, Byrne (2015) examined the effects of direct training and consultation using Tier I PBIS strategies, including evidence-based classroom management techniques, in an alternative education extended school year program. Results indicated increases in adult implementation of strategies and student engagement. These studies provide a basis of examination of PBIS components in OST.

A demonstration project embedding elements of PBIS in OST programs was conducted in eight afterschool programs across Connecticut (Farrell & Collier-Meek, 2014). Project Positive BOOST (P-BOOST), in collaboration with the Connecticut State Department of Education, developed a training package including a curriculum manual, a training video, and an implementation manual outlining essential elements of PBIS to be implemented in OST programs. The P-BOOST team provided a professional development event to all participating programs as well as varying levels of technical assistance for staff. The levels of technical assistance delivered to programs by P-BOOST consultants included monthly program appraisals, bimonthly PF to staff and trimonthly coaching for staff.

Results of the demonstration project showed promising results (Farrell & Collier-Meek, 2014). Across the three levels of technical assistance, implementation of PBIS components increased according to data collected through validated PBIS measures that were adapted for the OST context (the System-wide Evaluation Tool [SET-OST; Sugai, Lewis-Palmer, Todd, & Horner, 2001]; Benchmarks of Quality [BOQ-OST; Kincaid, Childs, & George, 2010]). These measures examined program-wide systems, processes and preparation with regard to PBIS

including the development of expectations and reward systems, plans for implementation and evaluation, and documentation procedures.

In addition to data collected at the program-wide level using the BOQ-OST and the SET-OST, the P-BOOST team also developed a direct observation tool, the Measure of Active Supervision and Interaction in Out-of-School Time (MASI-OST), to examine implementation of several staff behaviors that were considered key within the PBIS framework (Farrell & Collier-Meek, 2014; Farrell, Collier-Meek & Johnson, 2014). Using the MASI-OST, data were collected on the staff's implementation of active supervision, reinforcement, correction, and reference to behavior expectations. Results indicated increases in active supervision, reinforcement and reference to behavior expectations and slight decreases in correction across most of the programs in the PF and coaching conditions.

The current study used the training materials developed by the P-BOOST team as well as the measure, the MASI-OST, to assess implementation of several core PBIS components taught in the manual and video. The target components are well known as integral within the PBIS framework, but also have a long history of support as individual practices.

**Components of PBIS.** PBIS is a framework that encompasses several defining interconnected elements related to systems, data, practices and outcomes (Sugai & Horner, 2006). Within this larger framework, a multi-tiered approach is utilized to deliver evidence-based practices based on student need (Sugai & Horner, 2009). At the primary level of prevention, there are several foundational strategies for staff, each with its own history of support in the behavioral research base across various settings. Several of these well-known practices, including high praise to correction ratios and use of specific feedback, were addressed specifically in the training and PF sessions and served as primary dependent variables for the

current study. Another primary dependent variable, reference to behavior expectations, is also a well-known component in PBIS, yet has been researched to a lesser degree. Thus, the focus of the current study is at the primary practices level of PBIS implementation.

One such Tier I intervention within PBIS practices includes a high praise to correction ratio. There is evidence that suggests that providing praise more frequently than correction can impact student behaviors. Trussell (2008) suggests that a 4:1 reinforcement to correction ratio decreases challenging student behaviors and creates an environment for ideal student learning. Sugai (2008) suggests that praise to correction ratios between 6:1 and 8:1 are optimal. Researchers have even supported as little as 1:1 praise to correction ratios to modestly decrease levels of student disruption (Pisacreta et al., 2011). A ratio of 5:1, which was used in the current study, is suggested in the P-BOOST curriculum manual and throughout other research on classroom management (Farrell & Collier-Meek, 2012; Reinke, Herman & Sprick, 2011). Though there is not an agreed upon ratio deemed sufficient to consistently impact behavior change, a high praise to correction ratio is generally considered best practice within research on behavior management (Pisacreta, 2011).

There is also much research to support the use of behavior specific praise statements, or statements that point to the exact appropriate behavior exhibited by the student, to decrease disruptive behaviors (i.e. Gable, Hester, Rock & Hughes, 2009; Moffat, 2011; Reinke, Lewis-Palmer & Merrell, 2008). For instance, Moffat (2011) displayed a decrease in aggressive student behaviors when teacher use of behavior specific praise was increased. Similarly, disruptive student behavior decreased and appropriate behaviors increased as a result of elevated levels of behavior specific praise statements for four elementary school students (Fullerton, Conroy, & Correa, 2009). Although providing behavior specific praise is a supported practice, the amount of



behavior specific praise needed to impact change is unclear. Slight decreases in student aggression were noted when behavior specific praise was delivered as little as twice per 20-minute observation (Moffat, 2011). Conversely, a study conducted by Haydon and Musti-Rao (2011) speculated that a rate of more than one behavior specific praise statement every four minutes (.25/minute) may be necessary to decrease rates of problem behavior. Although there is not a desired rate of behavior specific praise identified in the literature, this practice is consistently supported as a method to decrease student problem behavior.

Delivering reinforcement more frequently than correction and using behavior specific praise statements are common interventions involved in primary level PBIS implementation. They are also well-supported practices in decreasing student problem behavior; however, despite the support for these practices, research suggests that they occur at low rates without direct instruction or support for teachers (Gable et al., 2009; Landrum et al., 2003). Increasing treatment fidelity, or the extent to which interventions are implemented as planned, including intended quality and dose (Hagermoser Sanetti & Kratochwill, 2009), is important in achieving the most positive student outcomes (Noell et al., 2005). Although higher levels of treatment fidelity are often related to better student outcomes (Collier-Meek, Fallon, Sanetti & Maggin, 2013), existing research suggests that teachers often struggle to maintain desired levels of treatment fidelity (Collier-Meek et al., 2013; Hagermoser Sanetti, Fallon & Collier-Meek, 2013). One strategy that has shown to increase levels of treatment integrity is PF (i.e. Noell et al., 2002; Noell et al., 1997).

### **Performance Feedback**

PF has been defined in many ways; essentially, it is a process that involves notifying an individual or group of individuals about the quality of their performance of a certain behavior or

behaviors (Alvero et al., 2001; Prue & Fairbank, 1981; Sulzer-Azaroff & Mayer, 1991).

Research has shown that PF is most consistently effective when it is delivered by a supervisor, delivered daily or weekly, includes a visual representation of implementation data, and was combined with goal setting (Alvero et al., 2001; Balcazar et al., 1985).

PF has been shown to increase treatment fidelity across a number of school-based interventions and settings. It has also been used as a tool to increase the rate and specificity of praise, which are main intervention components in the current study. For instance, Sutherland, Wehby, and Copeland (2000), observed increases in teacher use of behavior specific praise and improved student outcomes following PF. Furthermore, Reinke, Lewis-Palmer and Martin (2007) reported increased use of behavior specific praise across all teacher participants following visual PF. Finally, the reinforcement to correction ratio for four teachers increased following a treatment phase containing graphic and verbal PF (Pisacreta et al., 2011). Because the consistent implementation of intervention components is key to producing positive student outcomes, PF was an additional component provided to OST staff in this study.

The frequency and schedule of PF delivery varies greatly across studies. Consequently, there is not a standard for how often or for how many consecutive sessions PF should be delivered to result in consistent and sustainable implementation. Maggin, Fallon, Hagermoser Sanetti, and Ruberto (2012), delivered PF to paraeducators until 80% fidelity was met for five consecutive sessions. Then, PF was withdrawn to see if staff could implement without this support from the researcher. If paraeducators fell below the designated criteria (80%) for three sessions, PF was reinstituted until they could reach the criteria for five consecutive sessions again. Results of this study indicated that all of the paraeducators were able to consistently

implement the intervention with at least 80% fidelity throughout the course of the study. The proposed study used the PF schedule outlined by Maggin et al. (2012) to deliver PF to OSTPs.

### **Statement of Purpose**

The current study sought to bolster the evidence base for several components of the P-BOOST packaged training program in OST as well as expand the OST literature base in several important ways. Specifically, this research represents the first attempt to use an experimental design to assess the impact of PBIS components in a summer program, to examine the effects of components of the P-BOOST training package combined with PF on individual staff behaviors, and to examine the impact of PBIS components on student behavior in OST programs in a systematic way.

Based on previous literature supporting the effectiveness of PBIS elements in non-classroom settings, this study asserted that this same framework may be an efficient process for improving behavioral outcomes in a summer program as well. Specifically, several of the core components measured in the current study have shown effectiveness as individual components in decreasing student problem behavior when implemented with fidelity. In order to address the need for implementation fidelity, PF was used as a training component as it has a rich history of support in improving levels of fidelity. The purpose of the current study was to provide summer program staff with training, resources, and support to effectively manage student behavior in a positive way. The primary research question was as follows:

Can implementation of a PBIS training package including a viewing of a training video, review of a curriculum manual, and ongoing performance feedback conducted by the researcher:

(a) increase reinforcement to correction ratios for participants during observed intervals,

- (b) increase the rate at which staff participants provide specific feedback to students during observed intervals,
- (c) increase the rate at which staff participants provide a reference to behavior expectations within their specific feedback statements to students during observed intervals, and
- (d) decrease the average number of student disruptions during observed intervals?

It was hypothesized that, following training and PF: (a) reinforcement to correction ratios for staff participants during observed intervals would increase, (b) the rate at which staff participants provided specific feedback to students during observed intervals would increase, (c) the rate at which staff participants provided a reference to behavior expectations within their specific feedback statements to students would increase, and (d) the average number of student disruptions during observed intervals would decrease.

The hypothesis that the reinforcement to correction ratios and amount of specific feedback delivered by staff would increase following the training package is supported by the evidence suggesting that when PF supplements training, these behaviors have consistently shown increases (Pisacreta et al., 2011; Reinke, et al., 2007; Sutherland, et al., 2000). Furthermore, although no known research exists on the impact of training and PF in increasing references to behavior expectations, literature on PF shows support across a range of school-based interventions (e.g. Noell et al., 1997, 2000, 2005); therefore, it is believed that the addition of PF will result in increased levels of implementation for this dependent variable as well. Finally, the hypothesis that student disruption will decrease as a result of implementation of these practices is supported by a large body of research within behavior management supporting a high reinforcement to correction ratio and specific feedback as interventions to decrease student disruption (i.e. Gable et al., 2009; Moffat, 2011; Reinke, et al., 2008; Sugai, 2008; Trussell,

2008). Again, although research to date has not examined the impact of referencing behavior expectations on student disruption, it is believed that this dependent variable is similar in nature to providing specific feedback to students and may have a similar impact.

## **Chapter III: Method**

### **Setting**

A 21CCLC summer program in the Northeast was the setting for the present study. The program was recruited through contact with the OST coordinator for the district. The coordinator expressed interest in participation in the current study and signed a letter of support for the researcher. According to most recent demographic information, the participating district is comprised of approximately 3,800 students ranging from Preschool to Grade 12. Approximately 61% of students in the district are ethnically diverse and about 70% are eligible for free or reduced lunch.

The summer program served approximately 200 students from Kindergarten to 8<sup>th</sup> grade. The five-week long program operated between July 1, 2013 and August 2, 2013 and ran daily from 8:30am to 3:30pm. The daily schedule consisted of breakfast, morning meeting, academic adventures, lunch, enrichment, and dismissal. Students were assigned to classrooms based on grade and each classroom had a theme for the summer (i.e. archeology, rockets, etc.). More structured activities often occurred in the morning, while the activities in the afternoon often varied and included more hands on activities, such as cooking, building, gardening, kickball, dancing, etc. It is also important to note that the operations and leadership of this particular summer program, including its consistency, planning, management, and ability to offer a variety of structured activities to students, may be unique in the realm of summer programing.

### **Participants**

**Staff participants.** Three females and two males served as staff participants. Experience in OST programming or education ranged from four to ten years ( $M=6.0$ ;  $SD=2.3$ ). All of the participants had heard of PBIS, yet they had varying levels of experience and training ranging

from “no formal training” to “annual training.” The OSTP who had received formal training every year estimated a total of 8-15 hours of training on PBIS. Another OSTP had taken several classes in behaviorism and reported that she had much training in techniques associated with PBIS, but never had formal training on PBIS specifically. The remaining OSTPs had exposure to PBIS through the summer program. This exposure included knowledge of the program expectations and BRIDGES token economy, which was the summer program’s system to reward appropriate student behaviors. Using this token system, students earned BRIDGES, or tickets, which indicated that they had displayed behaviors that followed the program-wide expectations. Other than that exposure, the remaining OSTPs had no formal training in PBIS; however, it is important to note that the extended school year coordinator and the district as a whole had been actively preparing for PBIS implementation across settings and though the summer program had the least exposure to those practices at the time of this study, the leadership team had been working at a systems level to get ready for program-wide implementation.

The only inclusion criterion for the present study was that staff members attend the program a minimum of four days per week. This criterion was set based on time constraints and the need to collect a certain number of data points for each participant over the five-week long time frame. Based on this criterion, the summer program coordinator suggested six potential participants for the study. The researcher met with the potential participants in June 2013 to provide an overview of the study and obtain informed consent. All six OSTPs consented to participation and received the training; however, insufficient data were collected from one participant due to a variable schedule and inconsistent room assignment. Therefore, the results of the present study are based on data collected from five OSTPs.

Each staff participant had a different themed classroom for the summer. OSTPs 1 & 2 had an “Invention Convention” classroom in which students learned about famous inventions and created a rocket as the culminating project. On July 19, 2013, OSTP2 was relocated to a classroom called LEAD which served 7<sup>th</sup> and 8<sup>th</sup> graders. The LEAD classroom worked on leadership qualities for students including public speaking. When OSTP2 moved classrooms, there was an aide relocated to the “Invention Convention” classroom. OSTP3 was in a dinosaur-themed classroom for Kindergarteners. OSTP3 also had an aide in her classroom for the duration of the study. The classroom led by OSTP4 was called the “Big Dig” in which students learned about archeology and related topics. There was an aide in this classroom, though his presence was inconsistent throughout the study. Finally, OSTP5 headed the “Monsters” classroom in which students learned about mythology.

**Student participants.** Student participants were enrolled in Kindergarten, third, fourth, fifth, sixth, seventh or eighth grades. Their classroom assignment was based on their grade. In OSTP1 and 2’s classroom, there were an average of 18 third and fourth graders (*range* 13-20; *SD*=2.1); in OSTP3’s classroom, there were an average of 24 Kindergarteners (*range* 19-28; *SD*=2.2); in OSTP4’s classroom, there were an average of 9 fourth and fifth graders (*range* 5-11; *SD*=1.5); in OSTP5’s classroom, there were an average of 14 fifth and sixth graders (*range* 12-16; *SD*=1.5); and in OSTP2’s reassigned classroom, where only four observations took place, there were an average of 18 seventh and eighth graders (*range* 14-24; *SD*=4.5).

## **Materials and Measures**

The materials used for this study were (a) a training video, (b) a curriculum manual, and (c) BRIDGES token economy.



**Positive behavior in out-of-school time (BOOST): Training video.** The training video was approximately 36 minutes in length and covered several strategies related to implementing key PBIS components in OST. Topics presented in the video included: proactive strategies, developing behavior expectations, teaching behavior expectations, creating and enforcing routines, and managing problem behavior, among others. Specifically, the video provided demonstrations of active supervision, reinforcement, correction, and referencing behavior expectations which were the staff behaviors assessed in the present study. Staff participants viewed the video during their respective training sessions, but did not have repeated access to the video beyond the training.

The training video was divided into four chapters: “Be Positive,” “Set the Stage,” “Teach Expectations,” and “Be Proactive.” “Be Positive” focused on adult behaviors for handling problem student behaviors. Topics covered throughout this chapter included: providing positive reinforcement more often than correction, using behavior specific praise, providing brief corrections when necessary, redirecting students, and ignoring nuisance behaviors. The next chapter, “Set the Stage,” focused on program wide procedures in preparing for PBIS implementation. Within this chapter, topics included: creating program expectations, establishing routines, developing a behavior matrix, and creating consistency among staff and students. “Teach Expectations” outlined a step-by-step process to teach program participants the behavior expectations. This included telling the students what the expectations were, modeling what the expectations look like across settings, and allowing students to practice the expectations on their own with feedback from staff. Finally, “Be Proactive” explained proactive adult behaviors that could be exhibited before problem behavior occurred including active supervision, precorrection, and providing reminders to students. The dependent variables in the current study were the focus

of Chapter One: Be Positive which also aligns with primary level strategies in PBIS implementation.

**Positive behavior in out-of-school time (BOOST): A curriculum.** The curriculum manual elaborated on topics presented in the video by providing more detailed examples, additional behavior management strategies, chapter summaries, and chapter quizzes to self-assess understanding of the material. Staff were provided with a curriculum manual during the training and kept it as a reference throughout the study.

**BRIDGES token economy.** Staff also had the option to distribute BRIDGES to students for appropriate behavior. The BRIDGES were part of a token economy which students could exchange for prizes. When students exhibited behaviors that followed the program-wide expectations (Be Respectful, Be Responsible, Be Safe), they could receive a BRIDGE, or paper ticket. BRIDGES could then be exchanged for prizes or rewards during a designated time. Although the use of BRIDGES was specific to the summer program, students across grade levels had similar token economies established in their schools during the academic year. Therefore, students and staff were familiar with the process around distribution and exchange of BRIDGES.

## **Measures**

The measures used in the present study assessed staff knowledge, staff behaviors, student behaviors and researcher implementation of performance feedback. Staff knowledge referred to the information attained from the training alone. The staff behaviors that were examined were related to implementation of core PBIS practices including reinforcement to correction ratio, specific feedback statements, and reference to behavior expectations. Average disruption was the target student behavior assessed. Finally, measures used for performance feedback included an observation summary, a protocol for implementation, and a treatment integrity form.

**Staff knowledge.** Staff knowledge of core PBIS practices was assessed once during the study through pre- and post-training quizzes. The pre- and post-training quizzes were 10 items long composed of multiple choice and true and false questions. Both versions of the quizzes had the same presentation and covered the same material, but items were worded differently. Both versions of the quizzes assessed content knowledge from the video and curriculum of reinforcement, correction, specific feedback, reference to behavior expectations, and active supervision. (See Appendix A for Pre- and Post-Training Quizzes).

**Staff behaviors.** Staff implementation data for each of the five OSTPs was collected using the MASI-OST. This measure was completed daily, when possible. The researcher also tried to collect data near the same time or activity each day. The researcher completed the MASI-OST for each OSTP individually in each classroom until all OSTPs had been observed.

The MASI-OST (Farrell & Collier-Meek, 2012) was adapted and used to assess active supervision and three of the primary dependent variables in this study: (a) reinforcement to correction ratio, (b) rate of specific feedback statements provided to students, and (c) rate of specific feedback statements including a reference to behavior expectations. The MASI-OST is a systematic direct observation tool that takes 10 minutes to administer. It was created specifically to assess treatment fidelity of active supervision, reinforcement, correction, reference to behavior expectations, and response to nuisance behavior for OSTPs. These constructs measured by the MASI-OST align with the essential strategies taught in the P-BOOST training video and curriculum manual. The present study did not track response to nuisance behavior, but used a frequency count to track precorrections and specific feedback statements, which are adaptations from the original MASI-OST. (See Appendix B for the adapted MASI-OST).

The MASI-OST was used in the P-BOOST demonstration project in eight afterschool programs across Connecticut. Eleven observations were conducted with two raters per observation. Interobserver agreement data suggests that the tool can be used reliably (Farrell et al., 2013). Furthermore, generalizability theory (G-theory) analyses yielded promising results suggesting that a high portion of the variance was attributed to observation rather than the rater (Farrell et al., 2013) (see Table 1).

The MASI-OST used a combination of momentary time sampling procedures and frequency counts to collect data on staff behavior. A 10 minute observation using 15-second intervals and a momentary time sampling procedure was used to assess active supervision. In other words, at the end of every 15-second interval a trained observer marked whether the OSTP was engaging in move, scan, or interact, the three components of active supervision. A frequency count was used simultaneously to examine the amount of reinforcement, correction, precorrections, specific feedback statements, and reference to behavior expectations the OSTPs provided program participants. Definitions and assessment methods for each behavior measured using the MASI-OST are detailed below (Farrell & Collier-Meek, 2012).

***Active supervision (move, scan, interact).*** Active supervision involved the OSTP actively moving throughout the space, scanning student behavior, or interacting with student(s). This behavior was measured using a momentary time sampling procedure with 15-second intervals for 10 minutes. This yielded the percent of intervals the OSTP engaged in active supervision. Although active supervision was tracked throughout the study, it was not a primary dependent variable because a significant change was not expected as a result of the training package. Baseline data collected on 13 OSTPs in a demonstration project utilizing the MASI-OST suggested that staff participants were implementing active supervision for about 86 percent

of observed intervals. Although the “dose” of active supervision that is necessary to produce a decrease in problem behavior is inconclusive in the research, Johnson-Gros, Lyons and Griffin (2008) found that teachers actively supervising students for an average of 63% of observed intervals led to decreases in problem behavior across two transition settings. Furthermore, Lewis, Colvin and Sugai (2000) reported decreases in student disruptive behavior when active supervision was implemented about 6.5 times per minute. Since results from the pilot study suggested that the implementation of active supervision was surpassing the preliminary data related to dosage of active supervision to cause a change in student behavior, it was believed that the staff in the current study would be able to consistently apply the strategy as well. If the percent of intervals the OSTPs engaged in active supervision had fallen below 80%, it would have been addressed in the PF sessions; however, staff participants in the study never fell below this criterion.

***Reinforcement to correction ratio.*** The reinforcement to correction ratio was a calculation of the rate of positive reinforcement or praise in comparison to the rate of correction or reprimands provided to students during a 10 minute observation period. Specifically, reinforcement involved the OSTP praising or acknowledging student(s) for desired behaviors. Correction involved the OSTP reprimanding or correcting student(s) when undesired behavior was exhibited. These behaviors were measured separately using event recording for a 10 minute period. At the end of the observation, the trained observer used the frequency counts of reinforcement and correction to calculate the reinforcement to correction ratio. The total number of reinforcement instances were divided by the total number of correction instances and this number was compared to one (i.e. total reinforcement/total correction:1). This ratio represented

the total number of reinforcement instances for every one correction for the 10 minute observation.

***Specific feedback.*** Specific feedback involved the OSTP providing specific information about what students did well or could improve upon in their reinforcement, correction and precorrection statements. Precorrections were any instance of an OSTP reminding students of expected behaviors before an activity, transition or routine. The rate of specific feedback statements per minute within reinforcement, correction and precorrection statements was calculated by dividing the total number of specific feedback statements for an observation by the length of the observation (10 minutes). This yielded the total number of specific feedback statements per minute across observed intervals.

***Reference to behavior expectations.*** A reference to behavior expectations was defined as an OSTP referencing any of the program's behavior expectations (Be Respectful, Be Responsible, Be Safe) when engaging with students. The trained observer recorded all references to behavior expectations using event recording during the 10 minute observation. Furthermore, they indicated whether the reference was included in a specific reinforcement, correction, or precorrection statement. The researcher used these data to calculate a rate of specific feedback statements per minute that included a reference to behavior expectations. This was calculated by dividing the total number of references to behavior expectations counted during the observation by the observation length (10 minutes).

***Student behavior.*** Observed student disruptive behavior served as the fourth primary dependent variable in the study and was assessed using systematic direct observation. Student disruption data was collected daily, when possible, simultaneously with the completion of the

MASI-OST. Student disruption data were not collected on individual students; rather, the researcher tracked the total number of disruptions by the class.

For the purposes of the study, disruptive behavior was defined as any action, verbal or nonverbal, exhibited by a program participant that interrupted a program routine or activity. This definition ranged from minor instances (i.e. talking out, leaving seat when not permitted, playing with materials that are not related to the activity) to major instances (i.e. physical aggression), though no major instances were noticed during observed sessions. A 10 minute frequency count was used to measure disruptive behavior. During the 10 minute observation, the observer marked any instance of disruptive behavior. This technique yielded the total number of disruptive behaviors for program participants across observed intervals (See Appendix C for the Student Disruption Data Collection Sheet).

**PF forms.** Three forms were completed to document the PF sessions: (a) PF Observation Summary, (b) PF Protocol, and (c) PF Treatment Integrity form (adapted from Farrell & Collier-Meek, 2012).

***PF observation summary.*** Immediately following the observation, the researcher completed the PF Observation Summary sheet in which she recorded the percentage of intervals staff members engaged in active supervision, the reinforcement to correction ratio, the percent of statements involving specific feedback, and the percent of specific feedback statements involving a reference to behavior expectations (See Appendix D for the PF Observation Summary). This form included a written representation of strategies that were implemented well and ones that could have benefited from improvement. Additionally, the form graphically presented the data collected from the MASI-OST and student disruption data. It also reiterated the static goals for subsequent observation sessions. Following the PF session, the researcher took a picture of the

document for her records and the OST staff member kept the PF Observation Summary for his/her records.

***PF protocol.*** To help guide the PF sessions and create consistency among sessions, the researcher used a protocol indicating the PF steps and outlining a script for the conversation (See Appendix E for the PF Protocol). There were ten steps involved in the PF meeting: (1) Greet OSTP and turn on tape recorder, (2) Evaluate intervention process, (3) Evaluate student responsiveness, (4) Evaluate strategies, (5) Review implementation strengths and weaknesses, (6) Review implementation data and strategies, (7) Review next goal, (8) Confirm OSTP understanding, (9) Confirm OSTP commitment to increasing implementation, and (10) Ask OSTP if they have additional questions. These steps incorporated several components that have been shown in the literature to make PF more effective: (a) discussion of strengths and weaknesses, (b) review of data, (c) data provided visually and (d) goal-setting (Alvero et al., 2001; Balcazar et al., 1985).

***PF treatment integrity form.*** Following the PF session, the researcher completed a PF Treatment Integrity (TI) form in which she indicated whether she completed each of the 10 PF steps (listed in the protocol) with each OSTP. This form indicated whether each of the steps was completed or skipped, as well as provided space for researcher notes or comments (See Appendix F for the PF TI Form).

## **Design**

A multiple baseline single-subject design across three groups of OSTPs was used to determine the effectiveness of the training package and PF on staff implementation and student outcomes. Using this design, target responses are measured across subjects, settings, or behaviors over time creating baselines to which changes can be compared when a treatment is introduced



(Baer et al., 1968). The strength of this design comes from the idea that changes are noted only when the treatment is applied to a target behavior, subject, or setting while the other baselines remain stable in the absence of the treatment (Kazdin, 2011).

Multiple baselines are often desired over other single subject designs when a treatment component cannot be reversed (Kazdin, 2011). Furthermore, multiple baseline designs are desired over alternate single case designs when the target behaviors, settings, or subjects are independent of one another and do not covary; that is, the introduction of the treatment in one baseline does not affect the data in the other baselines (Kazdin, 2011). In the current study, the baselines were independent of one another and the training component could not be withdrawn in subsequent phases; therefore, a multiple baseline design was deemed appropriate.

According to Kazdin (2011), staggering of the treatment is crucial in determining an intervention effect using a multiple baseline design. Therefore, the following design procedures were followed for the current study: Baseline data were collected on OSTP1 and OSTP2 until five data points were collected. Once five data points were collected on the first two OSTPs, they received the training. The other four OSTPs remained in baseline during this time. Three additional data points were collected on the other four OSTPs. Once three more data points were collected for OSTPs in the second dyad, they received the training program. The OSTPs in the third dyad remained in baseline for three more data points before they received the training.

## **Procedures**

Although training took place in pairs, data collection and PF were conducted on an individual basis. Data collection procedures were consistent across baseline and intervention phases.

**Baseline.** During baseline, OSTPs performed typical daily routines and activities. The program expectations were: Be Respectful, Be Responsible, Be Safe. These expectations were consistent throughout the district, so students across all grade levels were taught the expectations during the school year. Although all staff and students were aware of these behavior expectations, they were not posted around the program. Staff also had the option to distribute BRIDGES to students for following behavior expectations, although none of the staff participants consistently used this method of reinforcement during baseline.

During baseline observations, the researcher also recorded the activity that was taking place. For OSTP1, about 60% of baseline observations were conducted while students were independently working on a worksheet. The remaining baseline observations were conducted while students were listening to a read aloud. All observations for OSTP1 during baseline were conducted in the morning between 9:33am and 10:13am. Baseline observations for OSTP2 were conducted immediately after OSTP1 between 9:44am and 10:25am each morning; therefore, the activities were the same as OSTP1. For OSTP3, baseline observations were conducted between 9:23am and 10:13am. The majority of observations (67%) were conducted during morning meeting. The other 33% of observations occurred while students were coloring or had free time. The majority of baseline observations (78%) for OSTP4 were conducted while students listened to a brief lesson then worked on a related activity either independently or within a group. For the remaining baseline observations, students were watching a movie. All baseline observations were conducted in OSTP4's classroom between 9:13am and 9:43am. Finally, baseline observations were usually conducted in OSTP5's classroom last between 9:54am and 11:19am, with one observation occurring in the afternoon due to schedule changes. The activities in OSTP5's classroom during baseline included watching a video or listening to a story and then

completing a worksheet on the topic (50% of baseline observations), listening to a lesson (25%), or having free time (25%).

**Training.** Participants were paired based on classroom assignment or were randomly paired together resulting in three dyads of OSTPs receiving the training package. OSTPs 1 and 2 co-taught in the same classroom at the beginning of the study, so they received the training package at the same time in order to counterbalance potential contamination effects. The four other participants were in separate classrooms and were therefore randomly assigned together.

The training was conducted by the researcher. It was held with each OSTP either individually or in respective pairs based on availability and staff coverage. OSTPs 1 & 2 received the training individually. The remaining OSTPs received the training within their respective dyads. All of the trainings were conducted in either the program coordinator's office or in an empty classroom in the summer program. The trainings lasted an average of 58.8 minutes (*range* 49.0 to 68.0, *SD*=7.2).

The training sessions began with the pre-test. OSTPs 1, 2, 3, and 5 received Version 1 as the pre-test and Version 2 as the post-test. Due to researcher error, Version 2 was administered to OSTP 4 as the pre-test and Version 1 was administered as the post-test.

Following the pre-tests, the curriculum manuals were distributed and the participants viewed the training video. After the viewing of the training video, the researcher provided a brief presentation reiterating the staff behaviors that were going to be assessed during systematic direct observations (i.e. reinforcement, specific feedback, and reference to behavior expectations). At this time the researcher also showed participants a blank PF summary sheet and outlined the procedures for the PF sessions, the behaviors being assessed, and the criteria for PF to be withdrawn. Participants were encouraged to ask any questions or express concerns. Lastly,

participants took the post-test following the training to assess knowledge gained from the training session alone. A summary of the schedule for baseline, training, and PF can be found in Table 2.

**Intervention.** Once staff participants received the training, they entered the intervention phase of the study. Before the first intervention observation and PF session for each OSTP following training, the researcher posted the program expectations (Be Respectful, Be Responsible, Be Safe) in their classroom. Aside from the posting of expectations, all activities, lessons and program routines were similar to those observed during the baseline phase. Likewise, observations were also conducted around the same times as baseline observations.

For OSTP1, observations during the intervention phase were conducted between 10:55am and 11:10am, with one observation conducted in the afternoon due to schedule changes. Observations occurred while students were listening to a lesson or story (37% of observations), completing a worksheet (13%), or doing an art project (50%). Observations conducted in the “Invention Convention” classroom for OSTP2 also included listening to a lesson (14% of observations), completing a worksheet (14%), or doing an art project (71%). The last four observations of the intervention phase for OSTP2 occurred in the LEAD classroom. During these observations, students were making posters for half of the observations and listening to a lesson for the other half of activities. All observations for OSTP2 occurred between 10:19am and 11:04am. Sixty-seven percent of observations during the intervention phase for OSTP3 were during morning meeting and the remaining observations were conducted during art or free time (33%). Observations for OSTP3 were conducted between 9:40am and 9:57am. For OSTP4, half of the observations conducted during the intervention phase took place during a class lesson. During the remaining observations, students were doing an art project (50%). All observations

during the intervention phase for OSTP4 were conducted between 9:28am and 9:38am. Finally, the activities during the observations in the intervention phase for OSTP5 included a read aloud or video followed by a worksheet (17% of observations), a class lesson (50%), or free time or art (33%). All observations conducted for OSTP5 during the intervention phase occurred between 10:05am and 11:27am.

Immediately following classroom observations, the researcher completed the PF summary sheet using the data collected from the MASI-OST and systematic direct observation. This sheet was used during PF sessions with each OSTP. The procedures for PF are explained in detail below.

***Performance feedback.*** PF sessions were held with each OSTP after each observation in the intervention phase following MASI-OST and student disruption data collection. Daily PF sessions were included in the current study for two reasons: (a) research suggests that daily PF sessions are more effective than weekly sessions (Mortenson & Witt, 1998) and (b) it was believed that daily feedback would be beneficial given the short length of the study. Given the support for daily PF and time constraints for this study, the plan was to implement daily PF until a desired criterion for staff behavior was met and researcher support could be faded.

Immediately after MASI-OST and student disruption data were collected for each OSTP, the researcher filled out the PF observation summary based on the results of the observation. After the observation, during the same day and when it was feasible for each OSTP, the researcher took the OSTP to a quiet room or hallway and provided a PF session to discuss implementation and review observation data. There were a total of 38 PF sessions performed across OSTPs. The average complete PF session lasted 4 minutes and 14 seconds (N=36, range

1:56 to 8:08, SD= 1:24). One session was not recorded, and one session was only partially recorded due to technological difficulties.

The PF sessions included written feedback and verbal feedback provided by the researcher. The written feedback was a one-page, double sided document listing strengths, areas for improvement, graphed data from the observation session and the predetermined goal for each target behavior (See Appendix D for the PF Observation Summary). Verbal feedback involved the researcher discussing barriers to implementation, reviewing the data, discussing strengths and weaknesses and reviewing the predetermined goal for subsequent sessions (See Appendix E for the PF Protocol that was used during verbal feedback). This process was repeated for each of the five participating OSTPs every day when they were in the PF phase of the study.

Following PF sessions, the researcher also completed the PF TI form. Once completed, this form was kept by the researcher and filed. Additionally, the PF sessions were recorded and saved for verification that the steps were completed. Because the researcher preformed the PF sessions and PF was a main component in the training, the researcher was required to meet 100% treatment integrity. In other words, the researcher was required to implement all 10 steps on the PF protocol for each session (See Appendix F for the PF TI form). Additionally, after two PF sessions throughout the study, each OSTP was asked to fill out the PF TI form based on the researcher's implementation of the PF session. The second observer who collected inter-observer agreement with the researcher distributed the form to participants. The researcher waited outside the room until the form was completed. This provided insight into how the OSTPs perceived the extent to which the researcher was providing PF. These forms were filled out by staff participants following PF sessions on July 18, July 25, August 1, and August 2, 2013. Each staff participant filled out a PF TI form following two PF sessions on two different days.

**PF criteria.** Prior to the study, performance criteria were set for (a) active supervision, (b) reinforcement to correction ratio, (c) percent of statements including specific feedback to students, and (d) percent of specific feedback statements involving a reference to behavior expectations in order to fade researcher support. It was anticipated that PF sessions would be held every day until the OSTP met a 5:1 reinforcement to correction ratio, an 80% criterion for percent of statements involving specific feedback, and a 50% criterion for percent of specific feedback statements including a reference to behavior expectations for five consecutive sessions (Maggin et al., 2012). Also, active supervision had to be maintained at 80% of observed intervals. If these criteria were met for five consecutive sessions, PF would have been withdrawn; however, none of the participants in the current study reached all of these criteria on any day. Therefore, despite initial intentions to fade researcher support and examine staff implementation without PF, PF was delivered daily throughout the study.

### **Inter-Observer Agreement (IOA)**

**Staff and student observations.** The researcher trained two experienced graduate students to collect staff and student observation data. Both graduate students had been data collectors on the P-BOOST pilot project; therefore, they had been previously trained on the MASI-OST and had experience using it during the demonstration project. Furthermore, both data collectors had taken classes and had experience collecting systematic direct observation data throughout their graduate coursework and assistantships. The trainings were conducted by the researcher individually with each graduate student prior to the start of the summer program.

In order to train the data collectors, the researcher provided a session that was approximately one-hour long. During respective sessions, the researcher outlined operational definitions of all staff and student behaviors, provided examples and non-examples of target staff

and student behaviors, and reviewed and practiced completion of the adapted MASI-OST and student disruption data collection sheet.

Following the training sessions, the data collectors used footage from an afterschool program to practice data collection and obtain 80% inter-observer agreement (IOA) on active supervision, reinforcement, correction, specific feedback, reference to behavior expectations, and student disruption. IOA was calculated using a point-by-point agreement ratio (Kazdin, 2011). Using this process, the number of agreements was divided by the total number of agreements plus disagreements and multiplied by 100. The result is the percent agreement between observers. Once 80% agreement was met using the training video, the observers were able to begin data collection for the study.

There were two training videos used to establish IOA. The first video took place in a gymnasium and was nine minutes in length. The second video took place during direct instruction and was eight minutes in length. The researcher and the two graduate students independently coded the videos using the MASI-OST. For Video 1, IOA was calculated at 100% for both observers and the researcher. For Video 2, IOA was calculated at 100% for observer 1 and 85.7% for observer 2. Average IOA across videos for observer 1 was 100% and for observer 2 was 91.0%. Because IOA met the 80% criteria, additional training was not required.

IOA data was collected on at least 20% of randomly selected observation sessions for each OSTP. IOA was required to meet an 80% criterion throughout the study. These criteria are in line with the What Works Clearinghouse (WWC) guidelines for single case design (Kratochwill et al., 2011). If the observers fell below this criteria, they would have had additional training and practice using the afterschool program videos until IOA reached 80% again; however, IOA did not drop below 80% during the study.



IOA was conducted on 23.1% of sessions for OSTP 1, 20.0% of sessions for OSTP 2, 26.7% of sessions for OSTP 3, 23.5% of sessions for OSTP 4 and 22.2% of sessions for OSTP 5. Using the point-by-point agreement ratio as described above, IOA was calculated at 89.6% for OSTP 1, 91.5% for OSTP 2, 89.9% for OSTP 3, 93.8% for OSTP 4, and 96.4% for OSTP 5.

**Performance feedback.** All PF sessions were recorded (with the exception of one missed session and one partial session) and IOA was conducted for 25% (9 sessions) of PF sessions across participants. The sessions chosen for IOA were done so using a random number generator. A second observer listened to these PF session recordings and independently completed the PF TI form. The form was then analyzed for agreement that the steps of PF were completed as indicated on the researcher's PF TI Form. The point-by-point agreement ratio discussed above was also used to calculate IOA for the PF sessions and a criterion of 80% agreement had to be met. If IOA fell below 80%, the researcher would have reviewed the missed steps with the second observer and met with the OSTP again to cover the missed steps; however, treatment integrity for performance feedback sessions never fell below this criterion during the course of the study.

## **Data Analysis**

Data were entered into a password-protected Excel spreadsheet by the student investigator. Since this study utilized a single-subject, multiple baseline design, data were evaluated via visual analysis of staff implementation and participant disruptive behavior data. The visual analysis procedures followed the guidelines outlined by the WWC for analyzing single case designs (Kratochwill et al., 2010). The WWC suggests a four step process to determine if data in single case designs are sufficient to attribute a change in outcome data to the implementation of the independent variable. The four steps are: (1) examine baseline data to

determine if there is a predictable pattern of data, (2) examine within-phase data to determine if there are a sufficient number of data points that depict a stable pattern, (3) compare adjacent phases to determine if there was an “effect” due to the implementation of the independent variable, and (4) analyze data from all phases of the study to determine if there were at least three demonstrations of effect.

For steps one through three, the WWC outlines six characteristics to assess the pattern of data (Kratochwill et al., 2011): (1) level, (2) trend, (3) variability, (4) immediacy of effect, (5) overlap (percent non-overlapping data; PND), and (6) consistency of data patterns across similar phases. Based on the visual analysis of these six features, the researcher determined if the data patterns were sufficient and three demonstrations of effect could be identified. According to the WWC (Kratochwill et al., 2010), if these criteria were met, the researcher could infer that any changes in the outcome variables could be attributed to the manipulation of the independent variable. Effect sizes were also calculated using the standard mean difference (Busk & Serlin, 1992). This procedure compares baseline and intervention means and divides the difference by the standard deviation of the baseline data.

Results from the pre- and post-training tests were also compared to provide qualitative information and make determinations on whether staff participants gained content knowledge from the training sessions alone. Finally, results from the researcher-completed PF TI forms were assessed to determine the fidelity of PF sessions.

## **Chapter IV: Results**

Systematic direct observation using the MASI-OST and researcher-created student disruption data collection sheet were used to assess changes in the dependent variables related to the primary research questions for the current study. The primary research questions were: Can implementation of a training package using components of PBIS including a viewing of a training video, review of a curriculum manual, and ongoing performance feedback conducted by the researcher (a) increase reinforcement to correction ratios for participants, (b) increase the rate at which staff participants provide specific feedback to students during observed intervals, (c) increase the rate at which staff participants provide a reference to behavior expectations within their specific feedback statements to students during observed intervals, and (d) decrease the average number of student disruptions during observed intervals?

The dependent variables within the primary research questions were categorized as adult behaviors and student behaviors. The dependent variables associated with adult behaviors included: praise to correction ratio, specific feedback statements, and reference to behavior expectations within specific feedback statements. The student behavior that was measured as a dependent variable was disruption. Results with regard to each of the primary dependent variables are discussed below.

### **Adult Behaviors**

**Reinforcement to correction ratio.** Visual analysis of data collected from each OSTP with regard to reinforcement to correction ratio indicates moderate treatment effects. Clear demonstrations of effect were noted for three OSTPs (1, 2 & 4). For the remaining two OSTPs (3 & 5), the treatment effect was less apparent due to more variable data. Slight increases in the average number of reinforcements per correction indicate small improvement from baseline to

intervention for OSTPs 3 and 5; however, clear demonstrations of effect could not be observed. An analysis of the data for each OSTP with regard to the first primary dependent variable is provided below (See Table 4 and Figure 1).

**OSTP 1.** During baseline, OSTP 1 provided an average of 1.55 reinforcement statements for every one correction (SD=0.55, range 1.25-2.5). Following training, the use of reinforcement statements steadily increased. During the intervention phase, OSTP1 provided an average of 3.38 reinforcement statements for every one correction (SD=3.12, range 0.50-10.0). This represents an average increase of 1.83 reinforcement statements per correction from baseline to intervention.

Visual analysis of the data indicates that a stable and predictable set of data were observed during baseline. Upon implementation of training and PF, there was a steady, though not immediate, increase in reinforcement statements per correction. Furthermore, the data became more variable during the intervention phase and there was some overlap between data points (Percent Non-Overlapping Data; PND= 50.0%); however, there was an overall increase in level and trend between phases.

**OSTP 2.** An average of 2.64 reinforcement statements per correction were observed during baseline for OSTP 2 (SD=2.21, range 0.67-5.0). An average increase of approximately 3.55 reinforcement statements per correction occurred following training and PF resulting in an average of 6.19 reinforcement statements per correction (SD=4.12, range 1.50-14.0) in the intervention phase for OSTP 2.

Visual analysis indicated fairly consistent and predictable data in the baseline phase for OSTP 2. An immediate treatment effect was observed following training. Although data in the intervention phase were somewhat variable and a slight descending trend was noted, there was

an overall increase in level between phases. There was some overlap of data as indicated by the percent of non-overlapping data (PND=45.0%).

**OSTP 3.** During baseline, OSTP 3 was utilizing an average of 4.75 reinforcement statements for every correction (SD=2.86, range .83-7.5). Her average use of reinforcement statements per correction nearly met the desired reinforcement to correction ratio of 5:1 before training even occurred. Furthermore, for half of the observations during baseline, OSTP 3 met or surpassed this criterion. Yet, a substantial increase of 3.66 reinforcement statements per correction was observed from baseline to intervention resulting in an average of 8.41 (SD=8.04, range 2.5-24) reinforcement statements per correction during the intervention phase for OSTP 3.

Visual analysis indicated a stable data set with minimal variability during the baseline phase; however, a slight increasing trend was detected. There was a spike in data following the training; however, there was not an immediate treatment effect. Following this sharp increase, the data declined to near baseline points and leveled out for the final four points of the set. Data indicated an overall increase in level between phases with no apparent trend in the intervention phase. Percent non-overlapping data was approximately 63.0%.

**OSTP 4.** During baseline, OSTP 4 was providing an average of .84 reinforcement statements per correction (SD=.73, range 0.2-2.0). Following training and PF, OSTP 4 provided an average of 4.25 reinforcement statements per correction (SD=3.02, range 0.5-10.0) which represents an average increase of about 3.41 reinforcement statements per correction during the intervention phase.

A stable and consistent set of data were indicated in the baseline phase for OSTP 4. Visual analysis of the data also indicated an immediate treatment effect as exemplified by a spike in data following training. Although data in the intervention phase were variable, an overall

increase in level was apparent. No apparent trend was noted in the intervention phase.

Furthermore, 63.0% of data were non-overlapping in the intervention phase.

**OSTP 5.** During baseline, OSTP 5 provided an average of 1.44 reinforcement statements per correction (SD=1.22, range 0.5-5.0). Following training and PF, the average number of reinforcement statements per correction she provided increased slightly by about 1.21 statements. This increase resulted in an average of 2.65 reinforcement statements per correction (SD=1.65, range 1.6-6.0) during the intervention phase for OSTP 5.

Baseline examination for visual analysis indicated an overall stable and predictable data set with the exception of one point. An immediate treatment effect was detected following training. There appeared to be an overall increase in level between phases with no apparent trend during the intervention phase. Furthermore, aside from one point, data were stable and consistent in the intervention phase. Finally, the percent of non-overlapping data was insignificant at approximately 17.0%, potentially due to the outlier in the baseline phase.

**Rate of statements including specific feedback.** Visual analysis of data collected from each OSTP with regard to rate of statements including specific feedback indicates moderate treatment effects. Data from three OSTPs (1, 2, &3) showed convincing treatment effects. OSTP5's data were slightly less clear in determining an intervention effect, though the overall level increased between phases indicating some change in behavior following the intervention. For OSTP4, a demonstration of effect could not be detected with intervention levels only slightly increased from baseline. An analysis of the data for each OSTP with regard to the second primary dependent variable is provided below (See Tables 5-6 and Figure 2).

**OSTP 1.** Prior to training and PF, OSTP 1 was providing specific feedback in his reinforcement, correction, and precorrection statements, on average, at a rate of 0.26 statements

per minute during observed intervals ( $SD=0.09$ , range 0.20-0.40). Following training and PF, OSTP 1 provided specific feedback at an average rate of 0.69 statements per minute during observed intervals ( $SD=0.35$  range 0.40-1.40) which represents an average increase of about 0.43 specific feedback statements per minute.

A total of 13 specific feedback statements ( $M=2.60$ ,  $SD=0.89$ , range 2.0-4.0) were counted during the five baseline observations for OSTP 1. Of these specific statements, about 15.4% ( $n=2$ ) were used in a reinforcement statement and the remaining 84.6% ( $n=11$ ) were used to correct student behavior. No precorrections were provided to students during baseline for OSTP 1. Following training, a total of 55 specific feedback statements ( $M=6.88$ ,  $SD= 3.56$ , range 4.0-14.0) were reported across eight observations in the intervention phase. Of the 55 specific feedback statements utilized during the intervention phase, 38.2% ( $n=21$ ) were used to provide reinforcement to students, 12.7% ( $n=7$ ) were used as a precorrection, and the majority of statements ( $n=27$ ; 49.1%) were used to correct student behavior.

Visual analysis indicated a stable and consistent set of data in the baseline phase for OSTP 1. An immediate treatment effect was not detected following training, but there was an overall increase in level between phases. Intervention phase data were fairly stable and consistent with no apparent overall trend. Percent non-overlapping data was 62.5%.

**OSTP 2.** OSTP 2 included specific feedback in his reinforcement, correction, or precorrection statements at an average rate of 0.24 statements per minute during observed intervals ( $SD=0.22$ , range 0.00-0.60) prior to training and PF. Following intervention, the rate of statements including specific feedback increased by an average of 0.78 statements per minute for OSTP 2. In other words, during the intervention phase, OSTP 2 included specific feedback in his

reinforcement, correction, or precorrection statements at a rate of 1.02 statements per minute during observed intervals (SD=0.44, range 0.60-2.10).

Twelve total specific feedback statements (M=2.4, SD=2.19, range 0.0-6.0) were noted across the five baseline observations for OSTP 2. The percent of specific statements involving reinforcement and correction were similar at 41.7% (n=5) and 50.0% (n=6) of statements, respectively. One of the twelve statements (8.3%) included a precorrection. Following training, the majority of the 112 specific feedback statements (M=10.2, SD=4.35, range 5.0-21.0) reported across intervention observations were used to reinforce students (n=69; 61.6%). About 30% of specific feedback statements (n=33; 29.5%) offered during the intervention phase were used as corrections and the final 8.9% of total specific feedback statements included precorrections (n=10).

Visual analysis indicated a stable and predictable data set in baseline for OSTP 2. Additionally, an overall decreasing trend was detected in baseline, though it was minor. An immediate treatment effect was also detected following training. Data in the intervention phase were very stable and predictable, and there appeared to be a slight increasing trend. Overall level appeared to increase between phases as well. Percent non-overlapping data was 81.8% which suggests moderate treatment effectiveness.

**OSTP 3.** During baseline, OSTP 3 included specific feedback in her reinforcement, correction, and precorrection statements at an average rate of 0.98 statements per minute during observed intervals (SD=0.43, range 0.20-1.60). Following training and PF, there was a 0.86 increase in average rate of statements including specific feedback per minute. This increase resulted in an average of 1.84 statements including specific feedback per minute (SD=0.60, range 1.00-2.40) during the intervention phase for OSTP 3.



OSTP 3 used a total of 78 specific feedback statements ( $M=9.75$ ,  $SD=4.27$ , range 2.0-16.0) across baseline phases. The majority ( $n=49$ ; 62.8%) of those specific feedback statements provided reinforcement to students. About 31.0% ( $n=24$ ; 30.8%) of statements were used to correct students and the remaining 6.4% of specific statements ( $n=5$ ) contained precorrections. The number of specific feedback statements used by OSTP 3 increased greatly to 129 total statements ( $M=18.4$ ,  $SD=6.02$ , range 10.0-24.0) following training. She continued to use a high percentage of specific feedback statements to reinforce students ( $n=100$ ; 77.5%) during the intervention phase. Eighteen percent of specific statements ( $n=23$ ) involved corrections, while the remaining 4.7% of specific statements contained precorrections ( $n=6$ ).

Baseline data contained some variability and inconsistency with no apparent trend. There was an immediate treatment effect following training, and overall level increased between phases. Although there was no apparent trend in intervention data, there was little overlap ( $PND=71.4\%$ ) which suggested moderate treatment effectiveness. There was some variability in intervention data, but it was fairly predictable.

**OSTP 4.** During baseline, OSTP 4 included specific feedback in her reinforcement, correction, and precorrection statements at an average rate of 0.26 statements per minute ( $SD=0.16$ , range 0.0-0.5) during observed intervals. In the intervention phase, she increased her average rate slightly by 0.15 specific feedback statements per minute resulting in an overall average rate of 0.41 statements including specific feedback per minute ( $SD=0.16$ , range 0.2-0.7) during observed intervals following training.

OSTP4 provided a total of 23 ( $M=2.56$ ,  $SD=1.59$ , range 0.0-5.0) specific feedback statements throughout baseline. Of these statements, the majority were used to correct students ( $n=14$ ; 60.9%). Five of the total specific feedback statements (21.7%) used during baseline were

praise statements, and the final four statements (17.4%) were precorrections. Following training, OSTP 4 used slightly more specific feedback statements for a total of 33 statements ( $M=4.13$ ,  $SD=1.64$ , range 4.0-16.0) across data points during intervention. Of these statements, the majority included precorrections ( $n=19$ ; 57.6%). Ten of the total specific feedback statements (30.3%) used during intervention were praise statements and the final four statements (12.1%) were used to correct students.

Overall, visual analysis did not indicate significant changes in rate of statements including specific feedback between baseline and intervention phases for OSTP 4. Baseline data were stable and consistent with a neutral trend. There was an immediate treatment effect, though it was very small. Although intervention data were stable and appeared to have a slight increasing trend, the overall level did not significantly change between phases. Furthermore, percent non-overlapping data was 25.0%.

**OSTP 5.** OSTP 5 provided reinforcement, correction, and precorrection statements including specific feedback at an average rate of 0.38 statements per minute ( $SD=0.27$ , range =0.1-0.9) during observations conducted in the baseline phase. Following training and PF, the rate at which she provided specific feedback statements increased by 0.30 statements per minute during observed intervals. Overall, she provided specific feedback statements at an average rate of 0.68 statements per minute ( $SD=0.41$ , range 0.2-1.3) in the intervention phase.

OSTP 5 used a total of 45 specific feedback statements ( $M=3.75$ ,  $SD=2.73$ , range 1.0-9.0) during baseline observations. The majority of specific feedback statements offered during baseline observations included a correction ( $n=32$ ; 71.1%). About 26.7% of specific feedback statements ( $n=12$ ) were used to reinforce students and the remaining 2.2% ( $n=1$ ) were used as precorrections. Following training, OSTP 5 used a total of 41 specific feedback statements

( $M=6.83$ ,  $SD=4.07$ , range 6.0-13.0) across the six intervention observations. The majority of specific feedback statements ( $n=25$ ; 61.0%) were used to provide reinforcement to students. Another 34.1% ( $n=14$ ) of statements were used as corrections and the final two specific feedback statements (4.88%) were precorrections.

Visual analysis indicated fairly consistent and predictable baseline data without an apparent trend for OSTP 5. There was not an immediate treatment effect following training, though intervention data were relatively consistent. Overall level slightly increased between phases, and a trend was not detected for the intervention phase. Finally, percent non-overlapping data was 16.7%.

**Rate of specific feedback statements including a reference to behavior expectations.**

Visual analysis of data collected from each OSTP with regard to rate of specific feedback statements including a reference to behavior expectations indicates moderate treatment effects. OSTPs 1, 2 and 3 showed promising changes in behavior from baseline to intervention and demonstrations of effect were noted for each participant. Aside from an immediate treatment effect for OSTP4, intervention data were near baseline levels indicating minimal effectiveness. Data from OSTP5 indicate a modest treatment effect with an overall change in level. An analysis of the data for each OSTP with regard to the third primary dependent variable is provided below (See Table 7-8 and Figure 3).

**OSTP 1.** OSTP 1 did not reference behavior expectations during any observations conducted in the baseline phase. Following training and PF, OSTP 1 included a reference to behavior expectations, on average, at a rate of 0.16 statements per minute ( $SD=0.13$ , range 0.00-0.40) during observed intervals which is a substantial increase from baseline levels.

OSTP 1 referenced behavior expectations in specific feedback statements thirteen times ( $M=1.63$ ,  $SD=1.30$ , range 0.00-4.00) over the course of intervention observations. Of these, the majority of behavior expectation references were used to correct student behavior ( $n=10$ ; 77.0%). About 23.1% of references to behavior expectations ( $n=2$ ) were included in precorrections, and none of the references to behavior expectations were contained in reinforcement statements during the intervention phase.

Because baseline data were at zero, the data set was stable and predictable with no trend. There was not an immediate treatment effect as the first data point after the training was also zero; however, there was a steady increase in the data over the course of the intervention phase. The overall level increased between phases and there was an increasing trend in the intervention phase. Intervention data were sufficiently consistent and percent non-overlapping data was 75.0% which suggests moderate treatment effectiveness.

**OSTP 2.** During baseline, OSTP 2 did not reference behavior expectations in any of his specific reinforcement, correction, or precorrection statements. After the implementation of training and PF, the rate at which OSTP2 included a reference to behavior expectations in his specific feedback statements increased to 0.21 statements per minute during observed intervals ( $SD=0.23$ , range 0.00-0.38) which indicates a substantial increase from baseline levels.

Twenty-three ( $M=2.09$ ,  $SD=2.26$ , range 0.0-6.0) of OSTP 2's specific feedback statements included a reference to behavior expectations across intervention observations. About half ( $n=12$ ; 52.2%) of these references to behavior expectations during intervention were used to correct student behavior. The remaining references to behavior expectations were used to praise students ( $n=5$ ; 21.7%) or as precorrections ( $n=6$ ; 26.1%).

Similar to OSTP 1, baseline data for OSTP 2 were stable and without trend as all data points were at zero. Furthermore, there was not an immediate treatment effect since the first data point following the training was also at zero. Overall, the data in the intervention phase were variable. There was an overall change in level between phases, and there was no trend in the intervention data; furthermore, half of the data points were non-overlapping (PND=50.0%).

**OSTP 3.** For OSTP 3, she included a reference to behavior expectations in her specific feedback statements at an average rate of 0.05 statements per minute (SD=0.08, range 0.0-0.20) during observed intervals in the baseline phase. Following training and PF, she included a reference to behavior expectations at an average rate of 0.23 statements per minute during observed intervals (SD=0.21, range 0.00-0.60) which represents an average increase of about 0.18 specific statements including a reference to behavior expectations per minute from baseline to intervention.

OSTP 3 referenced behavior expectations in her specific feedback statements a total of four times (M=0.50, SD=0.76, range 0.0-2.0) during baseline observations. Three of these references (75.0%) were used to correct student behavior and one reference to behavior expectations (25.0%) was used as a reinforcement statement. Behavior expectations were not referenced in any precorrections during baseline. Following training, OSTP 3 referenced behavior expectations in a total of 16 specific feedback statements (M=2.29, SD=2.14, range 0.0-6.0) across observations during the intervention phase. Most of the references to behavior expectations were included in reinforcement statements to students (n=9; 56.3%). Behavior expectations were referenced during five specific correction statements (31.3%) and two precorrection statements (12.5%) across observations in the intervention phase.

Visual analysis indicated a stable and predictable data set in the baseline phase. There was no immediate treatment effect following training; however, there was a slow, consistent increase and an overall ascending trend in the intervention phase. Furthermore, the level slightly increased between baseline and intervention phases. The percent non-overlapping data was 57.1%.

**OSTP 4.** During baseline, OSTP 4 included a reference to behavior expectations in her specific reinforcement, correction, and precorrection statements at an average rate of 0.03 statements per minute (SD=0.07, range 0.0-0.20) during observed intervals. A slight increase of about 0.06 references to behavior expectations within specific feedback statements per minute occurred following training and PF. This resulted in OSTP4 providing a reference to behavior expectations at an average rate of 0.09 statements per minute (SD=0.11, range 0.0-0.30) during observed intervals in the intervention phase.

OSTP 4 used a total of three references to behavior expectations (M=0.33, SD=0.71, range 0.0-2.0) across observations during baseline. OSTP 4 referenced a behavior expectation within a precorrection twice (66.7%) and once (33.3%) she referenced a behavior expectation while providing a behavioral correction to a student. She did not reference behavior expectations while reinforcing students at all during baseline observations. Following training, OSTP 4 referenced behavior expectations within seven of her specific feedback statements (M=0.33, SD=1.13, range 0.0-3.0). All seven references to behavior expectations occurred within a precorrection statement (n=7; 100.0%).

Visual analysis indicated a slight decrease in baseline data for the first three points, followed by consistent scores of zero for the remainder of the phase. There was an immediate treatment effect followed by a slight decline in data in the intervention phase. Overall, there was

a relatively consistent, neutral trend in the intervention phase with a slight increase in level between phases. Percent non-overlapping data suggested no significant treatment effects (PND=12.5%).

**OSTP 5.** In the baseline phase, OSTP 5 included a reference to behavior expectations within her specific reinforcement, correction, and precorrection statements at an average rate of 0.02 statements per minute (SD=0.04, range 0.0-0.1) during observed intervals. The rate of reference to behavior expectations within specific statements per minute increased by 0.21 statements per minute following training and PF resulting in an overall average rate of 0.23 references to behavior expectations within specific feedback statements per minute (SD0.34, range 0.0-0.9) during observed intervals in the intervention phase.

OSTP 5 referenced behavior expectations twice (M=0.17, SD=0.39, range 0.0-1.0) within her specific feedback statements during baseline observations. Both of the behavior expectations were referenced while correcting student behavior (n=2; 100.0%). Following training, OSTP 5 referenced behavior expectations a total of fourteen times (M=2.33, SD=3.39, range 0.0-9.0) across intervention observations. Half of the references to behavior expectations (n=7; 50.0%) were included in praise statements to students. The other half were either included in correction statements (n=5; 35.7%) or precorrections (n=2; 14.3%).

Overall, baseline data for OSTP 5 were very stable and predictable. There was not an immediate treatment effect, but there was a sharp increase in the few data points following training. Intervention data were relatively consistent and predictable with the exception of one data point. There was no apparent trend in intervention data, but the overall level did appear to increase between phases. Finally, only half of the data points in the intervention phase were non-overlapping (PND=50.0%).

## Student Behavior

**Student disruption.** Visual analysis of data collected from each OSTP with regard to student disruption indicates treatment effects that are not as clear when compared to the dependent variables related to adult behaviors. Data collected from OSTPs 1 and 4 showed moderate treatment effects following intervention; however, data from OSTPs 2, 3 and 5 had some overlap and variability suggesting a less substantial treatment effect. OSTPs 2 and 5 did, however, exhibit a decreasing trend following intervention which follows the hypothesized direction. An analysis of the data for each OSTP with regard to the fourth primary dependent variable is provided below (See Table 9 and Figure 4).

**OSTP 1.** During the baseline phase for OSTP 1, there were an average of 6.2 student disruptions (SD=1.79, range 4.0-9.0) during observed intervals. Following training, this number decreased by an average of about 1.45 student disruptions per observation yielding an average of 4.75 student disruptions (SD=2.60, range 1.0-8.0) during observed intervals in the intervention phase.

Visual analysis indicated a fairly stable and consistent set of data in the baseline phase. Following training, a sharp decrease in student disruptions per observation occurred signifying an immediate treatment effect; however, data slowly increased after this effect for most of the phase until the final data point which sharply decreased again. Overall, the level decreased between phases, but the data were variable in the intervention phase and no apparent trend was detected. Percent non-overlapping data was 37.5%.

**OSTP 2.** An average of 4.6 student disruptions per observation (SD=3.29, range 0.00-9.00) were noted for OSTP 2 during the baseline phase. Following training, the average number of student disruptions decreased by a little over one disruption (1.24) per observation yielding an



average of 3.36 student disruptions (SD=2.16, range 0.00-7.00) during observed intervals in the intervention phase.

Visual analysis of student disruptions indicated variable baseline data without a trend for OSTP 2. There was not an immediate treatment effect following training, but data slowly declined for the remainder of the intervention phase resulting in a slight decreasing trend. Additionally, the overall level decreased between phases. Because a data point of zero existed in the baseline phase, the percent non-overlapping data was calculated to be 0.0%.

**OSTP 3.** Student disruption was calculated at an average of 5.0 disruptions per observation (SD=2.14, range 2.0-9.0) for OSTP3 during baseline. A minor decrease (0.29 average disruptions per observation) occurred following training and PF. Therefore, in the intervention phase, there was an average of 4.71 student disruptions (SD=3.50, range 1.0-9.0) during observed intervals for OSTP 3.

Overall, visual analysis showed variable and unpredictable student disruption data patterns across both phases for OSTP 3. Data leveled out for the final four points in baseline, but in general the data were inconsistent without a trend. Additionally, there was a sharp increase following training, which is opposite of the hypothesized treatment effect. Data points in the intervention phase yielded much variability and only two data points were non-overlapping (PND= 28.6%).

**OSTP 4.** An average of 3.0 student disruptions (SD=2.18, range 0.0-6.0) per observation were reported during baseline for OSTP 4. A moderate decrease of 1.63 student disruptions per observation occurred following training and PF yielding an average of 1.38 student disruptions (SD=1.19, range 0.0-3.0) during observed intervals in the intervention phase for OSTP 4.

Visual analysis of student disruptions for OSTP 4 indicated variable baseline data with a slight increasing trend near the end of the data set. There was no immediate treatment effect, though intervention data did appear more consistent than baseline data and an overall decrease in level occurred between phases. Furthermore, although overall there did not appear to be a trend in the intervention phase, the final four points suggested a descending trend. As with OSTP 2, data points at zero during baseline subdued the percent non-overlapping data calculation (PND=0.0%).

**OSTP 5.** For OSTP 5, there were about 4.08 average student disruptions (SD=2.31, range 0.0-7.0) during observed intervals in the baseline phase. Following intervention, the average number of student disruptions per observation decreased by an average of 1.25 disruptions per observation resulting in an average of 2.83 student disruptions (SD=2.48, range 0.0-7.0) during observed intervals in the intervention phase for OSTP 5.

Baseline student disruption data were variable for OSTP 5. The trend in baseline appeared to be neutral or slightly increasing and an immediate treatment effect was detected following training. Aside from one data point in the intervention phase, the data set was fairly consistent and predictable. Furthermore, intervention data represented an overall descending trend and a change in level from baseline. On the other hand, percent non-overlapping data indicated lack of treatment effect (PND=0.0%) due to baseline points at zero.

### **Active Supervision, Adult Knowledge and Treatment Integrity**

In addition to adult and student behavior results related to the primary dependent variables, data were also collected and analyzed on (a) active supervision, (b) adult knowledge, and (c) treatment integrity. Results are presented below.

**Active supervision.** Although active supervision, or Move, Scan, Interact (MSI), was not a primary dependent variable in the study, data were collected to ensure participants did not implement this strategy less than 80% of the time. As hypothesized, the OST participants were able to MSI consistently throughout baseline and intervention phases. Specifically, OSTP1 engaged in MSI for an average of 99.0% of observed intervals (SD=2.24%, range 95.0% - 100.0%) during baseline. Similarly, OSTP2 engaged in MSI for an average of 99.5% of observed intervals (SD=1.11%, range 97.5%-100.0%) and OSTP 3 for an average of 98.9% of observed intervals (SD=2.53%, range 92.5%-100.0%) during their respective baseline phases. OSTP4 engaged in MSI during baseline slightly less with an average score of 96.4% of observed intervals (SD=9.11%, range 72.5%-100.0%). Finally, OSTP5 engaged in MSI for an average of 99.6% of observed intervals (SD=1.44%, range 95.0%-100.0%) in the baseline phase. All five OSTPs engaged in MSI for an average of 100.0% of observed intervals during their respective intervention phases.

**Adult knowledge.** Results from the pre- and post-tests were used to examine knowledge change by participants from the training alone. As indicated above, OSTPs 1, 2, 3, and 5 received Version 1 of the quiz as the pre-test and Version 2 as the post-test. Version 2 of the quiz was administered to OSTP 4 as the pre-test and Version 1 was administered as the post-test due to researcher error. The average percent of correct responses on the pre-test across participants was 82.0% (range 70.0% to 100.0%, SD=13.0%). On the post-test, the average percent of correct responses was 86.0% (range 80.0% to 90.0%, SD=5.0%). This indicates a slight average increase of about 4.0% from pre- to post-test which is not indicative of a significant knowledge change following the training alone.

A closer examination of the tests suggests that four out of five participants all answered one item incorrectly which may have impacted overall results: “Which of the following is not one of the key parts in the definition of reinforcement (Version 2, Item 3; See Appendix A)?” With the removal of this item, the scores increased from 86% to 94%, which is a more substantial increase. These results suggest that the wording or format of that item could have potentially impacted responding and may not have yielded an accurate estimate of participant understanding of the material assessed in that item.

**Treatment integrity.** The researcher completed a total of 38 treatment integrity forms, one for each PF session throughout the study. According to the self-assessment, the researcher implemented all ten PF steps for 100% of sessions. A second observer listened to nine randomly chosen sessions (25.0% of total PF sessions) and indicated that all ten steps were implemented for each selected session as well. Furthermore, all five staff members indicated that the researcher implemented 100% of steps during their two randomly selected PF sessions.

## **Chapter V: Discussion**

Overall, results partially supported PBIS components combined with PF as an intervention to increase staff implementation behaviors and decrease student disruptive behaviors. Specifically, active supervision levels remained at or above the hypothesized criteria and adult knowledge increased slightly as suggested by pre- to post-training tests for all staff participants. Average increases from baseline to intervention were observed for each primary dependent variable related to adult behaviors including rates of specific feedback, references to behavior expectations and reinforcement to correction ratios. Additionally, the average number of student disruptions decreased following training for each OSTP. Furthermore, promising patterns regarding the nature of specific feedback statements delivered to students following training emerged.

Several clear demonstrations of effect were noted across all dependent variables related to adult behaviors. Although some demonstrations of effect were less apparent, changes in level from baseline to intervention were generally noted across all dependent variables related to adult behaviors as well. Clear demonstrations of effect were less consistently observed for student disruption due to variable and overlapping data. Further discussion of these results across the four primary dependent variables related to adult behaviors (reinforcement to correction ratio, rate of specific feedback statements, rate of specific feedback statements including a reference to behavior expectations) and student behaviors (student disruption) are presented below.

### **Adult Behaviors**

Results suggested that each participant had modest increases in the average number of reinforcement statements per correction they provided from baseline to intervention. Clear demonstrations of effect were observed for OSTPs 1, 2, and 4. For OSTPs 3 and 5, less substantial demonstrations of effect were noted; however, overall level was increased for both

OSTPs indicating some change occurred after the intervention was introduced. Additionally, OSTP3 was already near the 5:1 goal during baseline, and thus, a smaller effect would be expected. Furthermore, four of the five participants had effect sizes that were large for this primary dependent variable. Finally, during baseline, none of the OSTPs reached the desired 5:1 ratio of reinforcement to correction, but during intervention two of the five OSTPs met and surpassed this criterion on average.

Similar to participants' reinforcement to correction ratios, each OSTP also increased the average rate at which they provided specific feedback to students following the intervention. Clear demonstrations of effect were observed for OSTPs 1, 2, and 3 with regard to this dependent variable. OSTPs 4 and 5 exhibited less apparent demonstrations of effect; however, the overall level increased following intervention as well and stable and consistent data were observed in this phase.

Furthermore, a large effect size was observed for each OSTP on this dependent variable and the treatment was deemed fairly effective based on PND results for two of the five OSTPs. Promising results were also observed with regard to the types of specific feedback statements provided to students following training. Across all five OSTPs, increases in the percent of total specific feedback statements including reinforcement and decreases in the percent of total specific feedback statements including corrections were observed. Results with regard to the use of precorrections were variable across participants.

Similar to the previous two primary dependent variables, each OSTP also increased the average rate at which they provided specific feedback including a reference to behavior expectations to students following the intervention. Specifically, OSTPs 1, 2 and 3 all showed promising results and solid demonstrations of effect following intervention. OSTP 4 had an

immediate effect after the intervention was introduced, but then data returned to near baseline levels making the effect less convincing than the previous three OSTPs. OSTP 5 also had a less prominent demonstration of effect, but the overall level increased following baseline levels which were near zero.

The types of statements including a reference to behavior expectations were somewhat variable across participants. OSTPs 1 and 2 followed a similar pattern. They both had significant increases in behavior expectations being referenced in correction statements following intervention and slight increases in precorrections containing behavior expectations. OSTP 2 also had a slight increase in reinforcement statements including a reference to behavior expectations. These similarities could potentially have to do with the fact that OSTPs 1 and 2 co-taught for the majority of the study. OSTPs 3, 4 and 5 followed a similar pattern with regard to correction and precorrection statements including a reference to behavior expectations. Decreases were observed in the percent of correction statements including a reference to behavior expectations and increases were noted in the percent of precorrections following baseline for each of these OSTPs. Increases in reinforcement statements containing a reference to behavior expectations were noted for OSTPs 3 and 5, but remained at zero from baseline to intervention for OSTP 4.

### **Student Behavior**

The final primary dependent variable assessed the impact of the intervention on student outcomes. Following intervention, the average number of student disruptions decreased from baseline to intervention for each OSTP; however, the data were less conclusive compared to the dependent variables related to adult behaviors. Clear demonstrations of effect were noted for OSTPs 1 and 4. More modest effects were noted for OSTPs 2 and 5. There was substantial overlap of data due to the variability in intervention data, but the decline in trend and decrease in

level for both of these OSTPs is promising. Data for OSTP 3, in which the immediate effect was opposite of the hypothesized direction and data were variable and overlapping, appeared to lack a treatment effect.

### **Further Interpretations**

In addition to the overall results determined using visual analysis of data, additional interpretations were explored related to the factors that may have influenced the dependent variables and unique data patterns or trends that may provide a better understanding of these changes. Several qualities were examined to potentially have impacted the dependent variables related to adult and student behaviors in the current study: (a) co-teaching assignment, (b) student grade, and (c) classroom structure. Each of these will be discussed in detail below including the perceived impact on the dependent variables and recommendations for future research based on observations from the current study.

**Co-teaching assignment.** An interesting dynamic and data patterns emerged from the co-teaching assignment of OSTPs 1 and 2 during the study. First, they were the only two participants whose data consistently demonstrated an effect across dependent variables related to adult behaviors. This could potentially be due to the fact that they received the training first, so they had the opportunity to have a greater “dose” of the intervention during the study. Another possible explanation is that their behaviors impacted one another. This hypothesis could be supported by examining the types of statements they delivered that were specific or referenced behavior expectations.

Following training, the amount of specific feedback statements they delivered in the form of reinforcement increased for both participants. This was common among all participants, however, so it may not point to room assignment as an influence. However, they were the only



two participants whose reference to behavior expectations in the form of corrections increased significantly following training. Again, this is merely an observation and does not point to a causal relationship, but it does provide some information with regard to the impact of co-teaching assignments. Anecdotally, during several observations, OSTPs 1 and 2 suggested to the researcher that they had a competition to see who could perform better on their PF sheets. Peer influence may have impacted their motivation to engage in more of the targeted staff behaviors as compared to participants in classrooms alone.

Research suggests that similar results were found with regard to increasing praise statements by staff in a summer program. In a study conducted by Smith, Bicard, Casey and Bicard (2013), an interdependent group contingency was used to organize staff into two “teams” who were challenged to obtain a certain goal of praise statements per day. During an additional treatment phase, PF was also delivered by the researcher during a meeting with the teams each afternoon and graphs of the praise statements delivered by each staff member were posted in the program. The winning team was rewarded by having ice cream with the researcher. Results suggested that the interdependent group contingency combined with PF was effective in increasing the praise statements delivered by all of the six participating staff members. Staff members in this study also noted that they enjoyed the “game” of competing to deliver the most praise statements to students.

Although the current study did not explicitly outline a contingency for reinforcement for the two OSTPs in the co-assigned classroom, it appears that a similar structure to the Smith et al. (2013) study emerged naturally. Future research may more systematically examine the effects of a group contingency to increase staff implementation of intervention components in OST settings. Similarly, future research might use group PF as a means to increase staff treatment

integrity. Though the research base is limited, several studies have been conducted in which PF was delivered at the group level to increase adult implementation behaviors in a school setting (Duhon, Mesmer, Gregerson, and Witt, 2009; Pellechia et al., 2011). Results suggest that group PF is “an efficient and effective method of improving intervention fidelity by both individual teachers and teaching teams (Pellechia et al., 2011, p. 426).” Because OST programs often lack time and staff resources, the group PF model may be an improvement over the traditional, individually delivered PF format. Future research in this area should aim to strengthen the literature base and examine whether the support for group PF used within schools can be replicated in OST settings.

**Student grade.** The current study utilized student participants from a variety of grades including Kindergarten and third through eighth grades. In order to determine if the training program and components of PBIS were better suited to specific student age(s) or grade(s) in the OST program setting, data were analyzed for unique patterns. Visual analysis suggests that the most consistent positive outcomes for adult implementation behaviors following training were for OSTPs 1, 2 and 3, which were the classrooms for third and fourth graders and Kindergarteners, respectively. These were also the groups with the youngest average student participants. Based on this information, a possible hypothesis is that the training package may be implemented with better fidelity in classrooms with younger students.

This assertion can be analyzed in several ways. First, a closer examination of the second baseline can allow for comparison of results between OSTPs. Because the implementation of the intervention was consistent across both OSTPs (i.e. time of training, amount of PF, etc.), it can be assumed that differences in results might be impacted by other variables, like classroom or personal characteristics, as opposed to timing or dose of the treatment. That said, OSTP3 who

worked with Kindergarten students throughout the study, exhibited more promising results across all of the adult implementation behaviors as compared to OSTP4 who worked with 4<sup>th</sup> and 5<sup>th</sup> graders.

For the reinforcement to correction dependent variable, although OSTP4's effect size was larger than OSTP3's (4.70 and 1.28, respectively), it is important to remember that OSTP3 was already near the 5:1 praise to correction goal during the baseline phase. Therefore, we would expect a smaller change following baseline as compared to OSTP4 whose average reinforcement to correction ratio was below 1:1 during baseline. In other words, OSTP4 had more room for improvement from baseline to intervention. Even though the effect size for OSTP3 was smaller than OSTP4's, she still showed growth in the average number of reinforcement statements she delivered per correction during the intervention phase and nearly doubled the average number of reinforcements per correction exhibited by OSTP4 (8.41:1 for OSTP3; 4.25:1 for OSTP4) during intervention.

For the remaining two adult dependent variables, rate of specific feedback delivered and rate of behavior expectations delivered within specific feedback statements, the effect is more clearly in favor of OSTP3 whose effect sizes and average rate of delivery were higher than OSTP4 during intervention (see tables 5 and 7). Overall, these results may support the hypothesis that the training and PF may be more effective when staff members are working with a younger age group, specifically Kindergarteners, in OST programs as compared to fourth and fifth graders.

Another way to analyze the impact of student grade on results is to examine OSTP2 more closely as he was the only staff participant to work with both elementary (grades 3 and 4) and middle school (grades 7 and 8) students throughout the course of the study. Again, because

treatment components were the same for OSTP2 as he is being compared to himself at different time points in the study, it can be postulated that differences in results may possibly be attributed to other external factors such as student grade.

Results with regard to reinforcement to correction ratio were more favorable when OSTP2 was working with younger students. When OSTP2 was in the classroom for 3<sup>rd</sup> and 4<sup>th</sup> graders, his praise to correction ratio was 4.6 to1. In the classroom for 7<sup>th</sup> and 8<sup>th</sup> graders, his praise to correction ratio was about 3.1 to1, suggesting that OSTP2 provided an average of 1.5 more reinforcements per correction when working with the elementary age students. Furthermore, slightly more favorable results were also observed for the rate at which OSTP2 delivered specific feedback statements with a reference to behavior expectations. When working with younger students, OSTP2 provided a specific feedback statement referencing a behavior expectation at a rate of .22 per minute. A rate of .17 specific feedback statements with a reference to behavior expectations per minute was observed when OSTP2 was working with 7<sup>th</sup> and 8<sup>th</sup> graders. The results for these two dependent variables are also consistent with the comparison of younger and older students in the second baseline with OSTPs 3 and 4.

The final adult behavior, rate of specific feedback statements delivered per minute, was slightly higher when OSTP2 was working with middle school students as compared to elementary school students (.86 per minute with elementary students; 1.47 with middle school students). Specifically, OSTP2 delivered more specific praise and specific corrections when he was working with older students. On the other hand, when he was working with younger students, he provided more general correction and general praise. This is contradictory to the analysis of the second baseline in which OSTP3 had a higher rate of specific feedback statements, including praise and correction, delivered to Kindergarteners as compared to OSTP4

who was working with 4<sup>th</sup> and 5<sup>th</sup> graders and delivered less average specific feedback per minute to students in her classroom.

Based on the analysis of OSTPs 3 and 4 in the second baseline, the comparison of OSTP2's results when working with elementary and middle school students, and overall results being more favorable for OSTPs working in the classrooms with the youngest average students (OSTPs 1, 2 and 3), it appears that slightly better results using the current intervention package with regard to adult implementation behaviors can be observed when working with younger students in OST programs, specifically Kindergarteners, third graders, and fourth graders. A review of literature examining PBIS and behavior-specific praise across grades was conducted to potentially provide more insight and meaning into the analysis of these results.

In a meta-analysis conducted by Solomon, Klein, Hintze, Cressey and Peller (2012), outcomes of PBIS implementation were examined across grade levels. Overall, more promising effect sizes were shown in middle school environments. However, there was also a much smaller sample size for this population of students (3 studies in middle schools vs. 13 in elementary schools). Furthermore, when analyzing the effect sizes for adult behaviors following the intervention, results were mixed. Data from only five studies could be used to calculate effect sizes for adult behaviors (i.e. treatment integrity, specific praise) as many of the studies did not report adult behaviors as outcome variables. Of those studies, only two, one which was conducted in a middle school and one which was conducted in an elementary school, had a large effect size for treatment integrity or delivery of specific praise respectively following intervention. Effect sizes from the other three studies, two in elementary schools and one in a middle school, were minimal. The study with the largest effect size for adult behavior was the one conducted in an elementary school and was related to staff implementation of specific praise.

These results more closely align with the findings from the current study. A further analysis of treatment integrity of delivering specific praise statements may provide more parallels to the current results.

A review of the literature using an intervention similar to the one used in the current study (i.e. training and PF) to increase delivery of praise statements by teachers yields positive results across many grade levels including Preschool students to secondary students (i.e. Briere, Simonsen, Sugai, & Myers, 2015; Duchaine, Jolivet, & Fredrick, 2011; Moffat, 2011; Pisacreta et al., 2011). In most of the studies, the intervention was provided to teachers working with students in the same grades or across grades, but within the same school settings (i.e. elementary, middle school, high school). Only one study could be found in which the same intervention was offered to teachers across elementary and middle school students as in the current study.

Allday, Hinkson-Lee, Hudson, Neilsen-Gatti, Kleinke, and Russel (2012) examined the impact of teacher training and performance feedback on delivery of specific praise statements to student participants in Kindergarten, first, second, and sixth grades. Results indicated that all teachers increased their usage of specific praise statements following intervention; however, the largest effect size was for the teacher working with the sixth grade students suggesting that the intervention may be implemented with more fidelity when working with middle school students. Although the current study postulates that more positive results with regard to adult implementation behaviors were observed with younger students, a parallel was also noticed between the current study and the results presented by Allday et al.

Baseline levels of praise statements delivered were lower for middle school students across both studies. Additionally, a larger effect size for delivery of praise statements or praise to correction ratio was observed for the teacher working with the sixth graders and one of the

OSTPs working with middle school students, respectively. However, the teachers or OSTPs working with younger students delivered more average praise during baseline and also delivered praise at a higher rate than their middle school counterparts following intervention in both studies. Therefore, based on analysis of these two studies, it appears that praise may naturally be delivered to middle school students less frequently than elementary school students prior to and following intervention. Thus, a larger effect may be noticed for adult behaviors from baseline to intervention for individuals working with middle school students, but overall praise during baseline and intervention appear to be higher for individuals working with elementary level students.

It is important to note that the observations related to the impact of student grade on adult implementation behaviors in OST programs were investigatory and preliminary. Due to the small number of data points within each student grade and the other possible influencing factors in the current study, concrete assumptions about the impact of student grade on adult implementation cannot be made; however, these observations do postulate questions to potentially be answered by future research. Specifically, future research may look to expand this research by more systematically examining the impact of the current training package across student grades. Furthermore, the current study did not have student participants represented from grades 1 and 2. Future research may examine the effects of the intervention package on this population of students as well. Lastly, most of the research conducted in this area takes place in a school setting. It will be important to examine the impact of the training package further in OST settings. Specifically, future research may look to replicate the current study in a similar OST program ranging several grades so the impact of student grade on adult implementation behaviors can be examined further.

**Classroom structure.** OST programs are often embedded with a mix of activities, some of which are structured, teacher-led activities and some that are unstructured, student-led activities. A closer analysis of the structure of activities in the current study and the outcomes of the dependent variables provides insight into the type of setting that may be better suited to the current training program. Activities that were considered structured were teacher-led, followed a predetermined lesson plan and involved constant teacher-student interactions, whether at the group or individual level (i.e. worksheet completed as a whole class, whole class read along, etc.). Activities that were considered unstructured were often student-led and involved an initial directive from the teacher, followed by students working in groups or individually on an activity with limited direction from the teacher (i.e. craft project, Kinnects, practicing for a group performance, etc.).

During the intervention phase, with regard to reinforcement to correction ratio, the majority of OSTPs (1, 2, 3, and 5) provided more average praise per correction when the activity was structured. In other words, it appears that staff participants implemented this component of the intervention with more fidelity when the activities were more structured and teacher-led as opposed to when they were less structured and student-led. One possible hypothesis for this result is that staff participants were regularly involved with and interacting with students throughout the activity, and thus may have observed more positive behaviors increasing their opportunities to provide praise to students.

Another possible hypothesis is that less problem behavior was observed during structured activities as compared to non-structured activities suggesting that there was less need for correction during structured activities and more opportunities for praise. This assertion would also be supported by past research suggesting that problem student behaviors occur more often in



unstructured settings (i.e. Colvin et al., 1997; Newcomer et al., 2009). However, an analysis of student disruption in the current study suggests outcomes contradictory to the literature base in this area; for the majority of OSTPs (2, 3 and 5), higher average rates of student disruption were observed during structured activities.

Again, several possible hypotheses can be postulated for the inconsistency with the current findings and past research with regard to student disruption in structured vs. unstructured settings. First, the current study has a small sample size as compared to previous research across studies in this area. Thus, these results only represent a snapshot in this area of research. Furthermore, past research examining student disruption in structured vs. unstructured settings generally examines non-classroom settings within the school hours, such as recess, lunch, hallway, etc. (Colvin et al., 2001; Leedy et al., 2004; Lewis et al., 2002). Although the unstructured activities in the current study have similarities to these non-classroom settings, the fact that this study was conducted outside of school hours may have impacted results. Finally, the definition of student disruption used in the current study may have led to higher identified rates of student disruption during structured activities.

In the current study, student disruption was defined as any action, verbal or nonverbal, exhibited by a program participant that interrupted a program routine or activity. The nature of structured, teacher-led activities innately allowed for more opportunities for student disruption to be observed. In other words, because there was a specific lesson plan to be followed during structured activities and the expectation was generally for students to remain quiet, there were more cases in which student behavior would meet the definition for disruption. Conversely, during unstructured activities, there was not necessarily a routine or plan that was being followed at the time, and thus students were less likely to behave in ways that interrupted the activity. For

example, a call out from a student might be considered a disruption during a whole group read along (structured activity) when the expectation was for a quiet classroom, but likely would not be considered a disruption during a student-led craft project (unstructured activity) when many students were permitted to talk. This nuance in the operational definition may be attributable to the higher rates of student disruption seen in structured settings.

Future research may aim to build upon the literature base regarding rate of student disruption during structured and unstructured activities in OST programs. A similar definition of student disruption as used in the current study could be adopted in future research studies to examine if results would be replicated in terms of rate of student disruption and praise to correction ratios in structured and unstructured settings. Another possibility for future research is to use prosocial student behaviors as a dependent measure as opposed to or in addition to problem student behavior in OST settings. Tracking instances of positive student behaviors that align with program expectations could ostensibly be less influenced by structure of the activity as opposed to student disruption which, based on the definition in the current study, may have been influenced by activity structure. Furthermore, since one objective of PBIS is to create a positive climate (Bradshaw, Koth, Thornton, & Leaf, 2009), increasing positive student behaviors aligns with that goal.

Several studies have attempted to increase the rate of positive student behaviors. For instance, several studies have attempted to increase positive peer reporting, or complimenting others (i.e. Nelson, Caldarella, Young & Webb, 2008; Skinner, Cashwell & Skinner, 2000) and have tracked this behavior using student reports. Other studies have attempted to increase student greetings (Edwards & Johnston, 1977), appropriate use of “please,” “thank you,” etc. (Kelley, Goetz, & Schilmoeller, 1976), sharing (Close, & Kreitzer, 1998) and helping behaviors

(Marzullo-Kerth, Reeve, Reeve, & Townsend, 2011). Future research could attempt to use any of these prosocial behaviors as a measure of student behavior in OST programs or could explore additional prosocial behaviors to measure.

Patterns were less apparent and appeared more arbitrary when analyzing rates of specific feedback statements and references to behavior expectations delivered to students during structured vs. unstructured activities. For specific feedback statements, the majority of OSTPs (2, 3 and 5) delivered statements at a higher average rate when the activity was more structured. A closer analysis of the types of specific feedback statements delivered adds insight into this conclusion.

OSTPs 2, 3 and 5 delivered the most average specific praise to students during structured activities and overall. This assertion aligns with the previous hypothesis for reinforcement to corrections ratio; perhaps the nature of structured activities allows for better teacher recognition of positive student behaviors and allows more opportunities for praise. In terms of specific corrections and precorrections, OSTPs 2, 3 and 5 delivered these types of specific feedback statements in moderation and within one statement or less of each other during unstructured activities and overall. In other words, their pattern of delivering specific feedback statements in structured and unstructured settings and overall was similar to each other.

Conversely, OSTPs 1 and 4 had unique patterns of delivery and had average rates in one type of specific feedback statement that were outliers when compared to the rest of the group which likely contributed to results opposite of the majority. For instance, OSTP 1 delivered the most specific corrections during unstructured activities at an average rate of about five per observation. The OSTP who delivered the next highest average rate of specific corrections delivered them at a rate of about 3.5 per observation which is an average of about 1.5 less per

observation compared to OSTP 1. Similarly, OSTP 4 delivered about three specific precorrections per observation during unstructured activities while the next highest average rate was less than one. These discrepancies and unique patterns for OSTPs 1 and 4 likely increased their overall average rate of specific feedback in unstructured settings. Although this appears to be a plausible explanation for higher rates of specific feedback statements being detected during unstructured activities for OSTPs 1 and 4, it is unclear if this pattern would emerge in similar studies.

In terms of reference to behavior expectations, the majority of OSTPs referenced behavior expectations within specific feedback statements at a higher average rate during unstructured activities. However, this conclusion should be interpreted with caution as there were very few overall references to behavior expectations across all OSTPs during intervention and all OSTPs referenced behavior expectations at a similar average rate (range of .88 to 2.3 average references per observation). In other words, although the majority of OSTPs referenced slightly more behavior expectations during unstructured times, average rates were similar and there were no outlying data for any OSTP to explain the results as with specific feedback; the data patterns across OSTPs were similar for this dependent variable. Therefore, a pattern could not be detected and conclusions could not be drawn for this dependent variable. A hypothesis for results related to specific feedback statements and references to behavior expectations is that personal characteristics and preferences for delivering these specific feedback statements may have had an impact on outcomes. Since the patterns for both specific feedback statements and behavior expectations are dubious and inconsistent for the current study with regard to overall delivery and delivery in different activity structures, future research may aim to explore this paradigm

further and determine if a consistent pattern can be detected or if personal characteristics impact outcomes.

Results for each of the dependent variables were closely examined to determine if certain characteristics within the program could be associated with more positive outcomes. Based on results from the current study, the intervention package resulted in: (1) the most consistent demonstrations of effect for adult behaviors when staff participants were in a co-assigned classroom, (2) the most consistent positive outcomes for adult implementation behaviors when staff participants were working with students in Kindergarten, third or fourth grades, and (3) higher overall praise to correction rates and average rates of specific praise delivered to students during structured activities. Future research may aim to strengthen these conclusion statements by replicating results in a similar OST program setting.

### **Limitations and Recommendations for Research**

According to pbis.org, PBIS is “a framework or approach for assisting school personnel in adopting and organizing evidence-based behavioral interventions into an integrated continuum... it is NOT a packaged curriculum, scripted intervention, or manualized strategy.” This statement implies that implementation of PBIS is fluid, malleable and customizable. The current study applied several components typically associated with PBIS in an OST setting; however, the question remains: Based on findings and limitations from the current study, what recommendations can be made about components that are integral in a behavior management intervention package that is optimal for OST programs? The following section will address this question by examining limitations in the current study and providing further recommendations in the following areas: (1) use of a token economy, (2) role of referencing behavior expectations, (3) performance feedback and (4) use of Positive BOOST materials.

**Token economy.** A token economy, including delivery of BRIDGES for expectation-following student behavior, was developed at the OST program in the current study prior to researcher involvement; however, throughout the study, it was apparent that this system was used sporadically and procedures for implementation were inconsistent. In fact, only two OSTPs delivered BRIDGES to students during two separate observations across the whole study. Clearly, the token economy was not a consistent strategy for staff participants to manage student behavior. Furthermore, delivery of tokens was not a highlight during the training and was not addressed during PF sessions. Rather, training and PF focused around implementation of the adult dependent variables which included providing high rates of verbal praise, specific feedback, and referencing behavior expectations. Because positive outcomes were noted for the majority of OSTPs with regard to adult implementation behaviors in the current study when the token economy was not enforced, it may not be a necessary component to the intervention; however, it would be interesting to see how consistent implementation of a token economy might have impacted results.

Token economies are largely regarded in the literature base as an effective strategy to decrease disruptive student behavior (i.e. Filcheck, McNeil, Greco & Bernard, 2004; Higgins, William & McLaughlin, 2001; Shook, Labrie, Vallies, McLaughlin & Williams, 1990). Likewise, there is much research to support specific praise as an effective intervention to decrease student disruptive behavior (i.e. Gable, Hester, Rock & Hughes, 2009; Moffat, 2011; Reinke, Lewis-Palmer & Merrell, 2008). However, limited research is available analyzing the impact of these strategies combined as compared to their effectiveness in isolation in decreasing challenging student behavior. This is an important consideration when determining necessary components of the current intervention and recommendations for future studies.

Although many studies mention verbal praise being utilized in combination with delivery of tokens, few studies could be found in which the strategies were systematically and explicitly compared to one another. One study (Stevens, Sidener, Reeve & Sidener, 2011) examined the use of tokens in isolation compared to use of tokens combined with specific praise as an intervention to increase student responding. Results indicated that both methods were effective, and there were negligible differences between the two strategies, suggesting that tokens alone may be sufficient in changing behavior. However, there is also research to suggest (Baine, 1972) that tokens alone are not a sustainable method of behavior change. Rather, Baine suggests that tokens in combination with specific praise have a more long-lasting impact. In other words, tokens and specific praise may be similarly effective in producing an immediate behavior change, but behavior specific praise appears to be necessary for lasting results. Thus, based on results of the current findings and a review of literature, behavior-specific praise appears to be a necessary component in the current intervention to maintain positive results. Yet, it is not likely that the addition of a token economy would cause adverse effects, so future research might combine a token economy system with specific praise to see if results from the current study could be bolstered with the addition of this strategy.

**Behavior expectations.** While there is evidence from the current study and a review of research to suggest that behavior specific praise may be a necessary component in the current intervention package to promote positive outcomes, the necessity of referencing behavior expectations is less clear. Because the implementation of specific feedback statements and referencing behavior expectations occurred simultaneously in the current study, determinations could not be made about their individual impact on student behavior. Furthermore, while development and posting of program behavior expectations is often recommended (Sugai &

Horner, 2009), there is limited research specifically on the verbal reference of behavior expectations and the impact on student outcomes.

Based on the limited research base and inconclusive findings in the current study, it is unclear if referencing behavior expectations alone can sufficiently impact positive student outcomes. Rather, it appears that the strategy of referencing behavior expectations can be used and is often used as an extension of a token economy or specific praise. For instance, a behavior expectation may be “checked off” on a token to signify appropriate student behavior in that area. Or, a verbal reference to a behavior expectation could be considered a smaller subset in the broad area of specific praise statements. Regardless, it may be true that the organizational or structural benefits of behavior expectations may outweigh their effectiveness as a discreet intervention component.

Further research in this area might attempt to support this assertion. Specifically, it would be beneficial to examine verbal reference to behavior expectations as opposed to specific verbal feedback in a systematic way, such as using an ABC or alternating treatments single subject design. If this hypothesis can be supported, it may have implications for future intervention. As was exhibited in the current study, staff participants were more successful in increasing their specific praise statements as opposed to their behavior expectation references following intervention. If referencing behavior expectations is not believed to be more effective than providing behavior-specific praise, training and PF resources could be focused on increasing behavior-specific praise, a behavior that appears to be easier to impact, while behavior expectations could serve as a way to organize program rules and provide a visual reminder to students and staff.



**Performance feedback.** In the current study, static criteria were set for each of the adult dependent variables which had to be met and sustained for PF to be faded for each of the OSTPs. However, the goals were so high for each of the staff dependent variables that they could not be obtained by any of the staff participants throughout the course of the study. This is a potential limitation to the current study as PF was not withdrawn for any of the participants and thus conclusions could not be drawn about the ability of staff to implement target behaviors without researcher support. Future research may seek to adjust the criteria for fading of PF so that staff participants still receive an adequate dose of PF, but are better able to attain their daily goals within the short timeframe often found in summer programs.

Future research may aim to model the delivery and fading of PF presented in Myers, Simonsen & Sugai (2011). This study used a three tiered approach for increasing teachers' rates of specific praise statements to students. At the highest, most intensive level of intervention, staff participants were required to meet or surpass a 4:1 praise to correction ratio and provide six behavior-specific praise statements per 15-minute observation for three consecutive sessions before they were moved to a maintenance phase (i.e. fading of PF). This format may be better suited to the current intervention in the future as the criteria are lower and more attainable, but still produced positive outcomes as suggested by Myers et al. (2011). A recommended criterion for the final adult dependent variable, reference to behavior expectations, could not be informed by past research as the current study is the first known attempt to track references of behavior expectations. Therefore, results from the current study, suggesting most staff participants successfully referenced behavior expectations about twice per 15-minute observation following training, can be used as an exploratory criterion for future investigations.

**Positive BOOST materials.** Another limitation is that the Positive BOOST curriculum and materials were only used for the second time in the current study, and thus do not have a solid research base yet to support their use as an evidence-based behavior management curriculum in OST. However, as mentioned previously, many behavior management techniques taught in the curriculum are heavily supported by research as independent interventions. Furthermore, results from the pilot study (Farrell & Collier-Meek, 2014) and results from the current study provide promising evidence for this curriculum to be used in OST settings as evidenced by improvements in treatment fidelity and average decreases in student disruption. Further investigations may aim to expand the literature base for these materials by implementing the training package across OST settings.

One specific area for re-evaluation in the current curriculum could focus on the pre- and post-tests for Chapter 1. Following training, scores on the researcher-developed assessments increased from 82.0% correct to 86.0% correct; these results do not represent a significant increase in knowledge from pre- to post-training. However, with the removal of an outlying item (Version 2, Item 3), the scores increased from 85.5% to 93.6%, which is a more substantial increase. These results suggest that the pre- and post-tests used in the current study may not have accurately estimated the amount of knowledge gained in all areas through training alone. Being able to identify if the training package without ongoing researcher support (PF) can impact staff content knowledge will be important information for future researchers to better understand. In a setting where professional development is often lacking and resources are minimal, a professional development opportunity that is feasible, time efficient, and can increase content knowledge, such as the Positive BOOST curriculum and video, may be desired by OST programs.

## **Conclusion**

OST programs are attended by millions of students nationally and are responsible for addressing aspects of the whole child, including socio-emotional and behavioral needs. Although OST programs are expected to address these areas, staff are often unequipped to do so. Furthermore, little research exists on the existence or impact of behavior management professional development on staff and student behavior in OST settings. The current study looked to expand this research by providing a professional development opportunity to five OST staff members in a five-week long summer program. The training package included an hour long training and ongoing researcher support. The intervention was hypothesized to increase reinforcement to correction ratios across participants, increase rates of specific feedback statements delivered to students per minute, increase the rate of behavior expectations included in specific feedback statements delivered to students per minute, and decrease the number of student disruptions.

Overall, average increases from baseline to intervention occurred for reinforcement to correction ratios, rate of specific feedback provided and rate of references to behavior expectations provided, as well as average decreases in student disruption across participants. Furthermore, clear demonstrations of effect were identified for several OSTPs across behaviors. Additionally, the patterns of specific feedback statements for OSTPs was promising; the majority of staff participants included more specific feedback and behavior references in reinforcement to students during the intervention phase and decreased their use in corrections. A closer analysis of results suggested that the intervention may have been implemented with better fidelity in co-teaching rooms, with younger students including grades Kindergarten, third and fourth, and during more structured activities.

These results provide important additions to the literature base, inform decisions about which components may be essential in the current intervention package, and provide recommendations for future research directions. First, the current study bolstered the evidence base for Positive BOOST, a feasible and time efficient training program for OST programs that could increase staff knowledge in PBIS strategies and increase treatment fidelity of target adult behaviors when combined with PF. These data also add to a very limited database with regard to behavior management and OST, specifically summer programs. Further, the current study helps provide a baseline for several staff behaviors that have little research, such as specific feedback and reference to behavior expectations within OST settings; the data provides preliminary information about the amount of these behaviors staff are currently implementing with and without intervention. Future research directions can include adding a token economy to the intervention package, examining the impact of verbal references to behavior expectations, changing PF criteria to allow for withdrawal of researcher support, and replications of the current study to increase the evidence base for the curriculum and video. Furthermore, results of this study provide promising and exciting opportunities for OST programs with regard to staff development and student success.

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**Table 1****Schedule of Phase Implementation, Training and Data Collection for Each OSTP**

| OST Participant | Baseline                  | Training | Data Collection & PF            |
|-----------------|---------------------------|----------|---------------------------------|
| OSTP 1          | July 1-9: 5 data points   | July 9   | July 15-July 26: 9 data points  |
| OSTP 2          | July 1-9: 5 data points   | July 9   | July 10-July 25: 11 data points |
| OSTP 3          | July 1-12: 8 data points  | July 15  | July 16-July 26: 7 data points  |
| OSTP 4          | July 1-12: 8 data points  | July 15  | July 16-July 26: 9 data points  |
| OSTP 5          | July 1-19: 12 data points | July 19  | July 22-Aug. 2: 6 data points   |

**Table 2****Percent of Correct Responses on Pre- and Post-Training Tests for Each OSTP**

| OSTP   | <i>% Correct</i> |      |
|--------|------------------|------|
|        | Pre              | Post |
| OSTP 1 | 90%              | 80%  |
| OSPT 2 | 70%              | 90%  |
| OSTP 3 | 100%             | 90%  |
| OSTP 4 | 70%              | 90%  |
| OSTP 5 | 80%              | 80%  |

Note: OSTPs 1, 2, 3 and 5 received Version 1 of the quiz for their pre-test and Version 2 of the quiz for their post-test. OSTP4 received Version 2 as her pre-test and Version 1 of the quiz as her post-test.

**Table 3**

**Average Percent of Observed Intervals Participants Engaged in Move, Scan, Interact During Baseline and Intervention Phases**

|        | <i>Mean (SD)</i> |               |
|--------|------------------|---------------|
|        | Baseline         | Intervention  |
| OSTP   |                  |               |
| OSTP 1 | 99.0% (2.24%)    | 100.0% (0.0%) |
| OSTP 2 | 99.5% (1.11%)    | 100.0% (0.0%) |
| OSTP 3 | 98.9% (2.53%)    | 100.0% (0.0%) |
| OSTP 4 | 96.4% (9.11%)    | 100.0% (0.0%) |
| OSTP 5 | 99.6% (1.44%)    | 100.0% (0.0%) |

**Table 4****Average Number of Reinforcement Statements per Correction for Each OSTP During Baseline and Intervention Phases**

|        | <i>Mean (SD)</i> |              | Effect Size | PND   |
|--------|------------------|--------------|-------------|-------|
|        | Baseline         | Intervention |             |       |
| OSTP   |                  |              |             |       |
| OSTP 1 | 1.55 (0.55)      | 3.38 (3.12)  | 3.28        | 50.0% |
| OSTP 2 | 2.64 (2.21)      | 6.19 (4.12)  | 1.77        | 45.0% |
| OSTP 3 | 4.75 (2.86)      | 8.41 (8.04)  | 1.28        | 28.6% |
| OSTP 4 | 0.84 (0.73)      | 4.25 (3.02)  | 4.70        | 63.0% |
| OSTP 5 | 1.44 (1.22)      | 2.65 (1.65)  | -0.00       | 17.0% |

**Table 5**

**Average Rate of Specific Feedback Statements Delivered Per Minute for Each OSTP During Baseline and Intervention Phases**

|        | <i>Mean (SD)</i> |              | Effect Size | PND   |
|--------|------------------|--------------|-------------|-------|
|        | Baseline         | Intervention |             |       |
| OSTP   |                  |              |             |       |
| OSTP 1 | 0.26 (0.90)      | 0.69 (0.35)  | 4.78        | 62.5% |
| OSTP 2 | 0.24 (0.22)      | 1.02 (0.44)  | 3.51        | 81.8% |
| OSTP 3 | 0.98 (0.43)      | 1.84 (0.60)  | 2.03        | 71.4% |
| OSTP 4 | 0.26 (0.16)      | 0.41 (0.16)  | 0.99        | 25.0% |
| OSTP 5 | 0.38 (0.27)      | 0.68 (0.41)  | 1.08        | 16.7% |

**Table 6****Total Number of Specific Feedback Statements by Category for Each OSTP During Baseline and Intervention Phases**

|        |     | Category of Specific Feedback Statements |        |               |        |            |        |
|--------|-----|--|--------|---------------|--------|------------|--------|
|        |     | Precorrections                           |        | Reinforcement |        | Correction |        |
|        |     | Baseline                                 | Int.   | Baseline      | Int.   | Baseline   | Int.   |
| OSTP 1 | N   | 0.0                                      | 7.0    | 2.0           | 21.0   | 11.0       | 27.0   |
|        | (%) | (0.0)                                    | (12.7) | (15.4)        | (38.2) | (84.6)     | (49.1) |
| OSTP 2 | N   | 1.0                                      | 10.0   | 5.0           | 69.0   | 6.0        | 33.0   |
|        | (%) | (8.3)                                    | (8.9)  | (41.7)        | (61.6) | (50.0)     | (29.5) |
| OSTP 3 | N   | 5.0                                      | 6.0    | 49.0          | 100.0  | 24.0       | 23.0   |
|        | (%) | (6.4)                                    | (4.7)  | (62.8)        | (77.5) | (30.8)     | (18.0) |
| OSTP 4 | N   | 4.0                                      | 19.0   | 5.0           | 10.0   | 14.0       | 4.0    |
|        | (%) | (17.4)                                   | (57.6) | (21.7)        | (30.3) | (60.9)     | (12.1) |
| OSTP 5 | N   | 1.0                                      | 2.0    | 12.0          | 25.0   | 32.0       | 14.0   |
|        | (%) | (2.2)                                    | (4.9)  | (26.7)        | (61.0) | (71.1)     | (34.1) |

**Table 7**

**Average Rate of Specific Feedback Statements Including a Reference to Behavior Expectations Delivered Per Minute for Each OSTP During Baseline and Intervention Phases**

|        | <i>Mean (SD)</i> |              | Effect Size | PND   |
|--------|------------------|--------------|-------------|-------|
|        | Baseline         | Intervention |             |       |
| OSTP   |                  |              |             |       |
| OSTP 1 | 0.0 (0.0)        | 0.16 (0.13)  | N/A         | 75.0% |
| OSTP 2 | 0.0 (0.0)        | 0.21 (0.23)  | N/A         | 50.0% |
| OSTP 3 | 0.05 (0.08)      | 0.23 (0.21)  | 2.36        | 57.1% |
| OSTP 4 | 0.03 (0.07)      | 0.09 (0.11)  | 0.77        | 12.5% |
| OSTP 5 | 0.02 (0.04)      | 0.23 (0.34)  | 5.57        | 50.0% |



**Table 8**

**Total Number of Specific Feedback Statements Including a Reference to Behavior Expectations by Category for Each OSTP During Baseline and Intervention Phases**

|        |     | Category of Specific Feedback Statements |         |               |        |            |        |
|--------|-----|--|---------|---------------|--------|------------|--------|
|        |     | Precorrections                           |         | Reinforcement |        | Correction |        |
|        |     | Baseline                                 | Int.    | Baseline      | Int.   | Baseline   | Int.   |
| OSTP 1 | N   | 0.0                                      | 2.0     | 0.0           | 0.0    | 0.0        | 10.0   |
|        | (%) | (0.0)                                    | (23.1)  | (0.0)         | (0.0)  | (0.0)      | (77.0) |
| OSTP 2 | N   | 0.0                                      | 6.0     | 0.0           | 5.0    | 0.0        | 12.0   |
|        | (%) | (0.0)                                    | (26.1)  | (0.0)         | (21.7) | (0.0)      | (52.2) |
| OSTP 3 | N   | 0.0                                      | 2.0     | 1.0           | 9.0    | 3.0        | 5.0    |
|        | (%) | (0.0)                                    | (12.5)  | (25.0)        | (56.3) | (75.0)     | (31.3) |
| OSTP 4 | N   | 2.0                                      | 7.0     | 0.0           | 0.0    | 1.0        | 0.0    |
|        | (%) | (66.7)                                   | (100.0) | (0.0)         | (0.0)  | (33.3)     | (0.0)  |
| OSTP 5 | N   | 0.0                                      | 2.0     | 0.0           | 7.0    | 2.0        | 5.0    |
|        | (%) | (0.0)                                    | (14.3)  | (0.0)         | (50.0) | (100.0)    | (35.7) |

**Table 9****Average Number of Student Disruptions During Observed Intervals for Each OSTP During Baseline and Intervention Phases**

|        | <i>Mean (SD)</i> |              | Effect Size | PND   |
|--------|------------------|--------------|-------------|-------|
|        | Baseline         | Intervention |             |       |
| OSTP   |                  |              |             |       |
| OSTP 1 | 6.2 (1.8)        | 4.8 (2.6)    | -0.81       | 37.5% |
| OSTP 2 | 4.6 (3.3)        | 3.4 (2.2)    | -0.36       | 0.0%  |
| OSTP 3 | 5.0 (2.1)        | 4.7 (3.5)    | -0.13       | 28.6% |
| OSTP 4 | 3.0 (2.2)        | 1.4 (1.2)    | -0.74       | 0.0%  |
| OSTP 5 | 4.1 (2.3)        | 2.8 (2.5)    | -0.54       | 0.0%  |

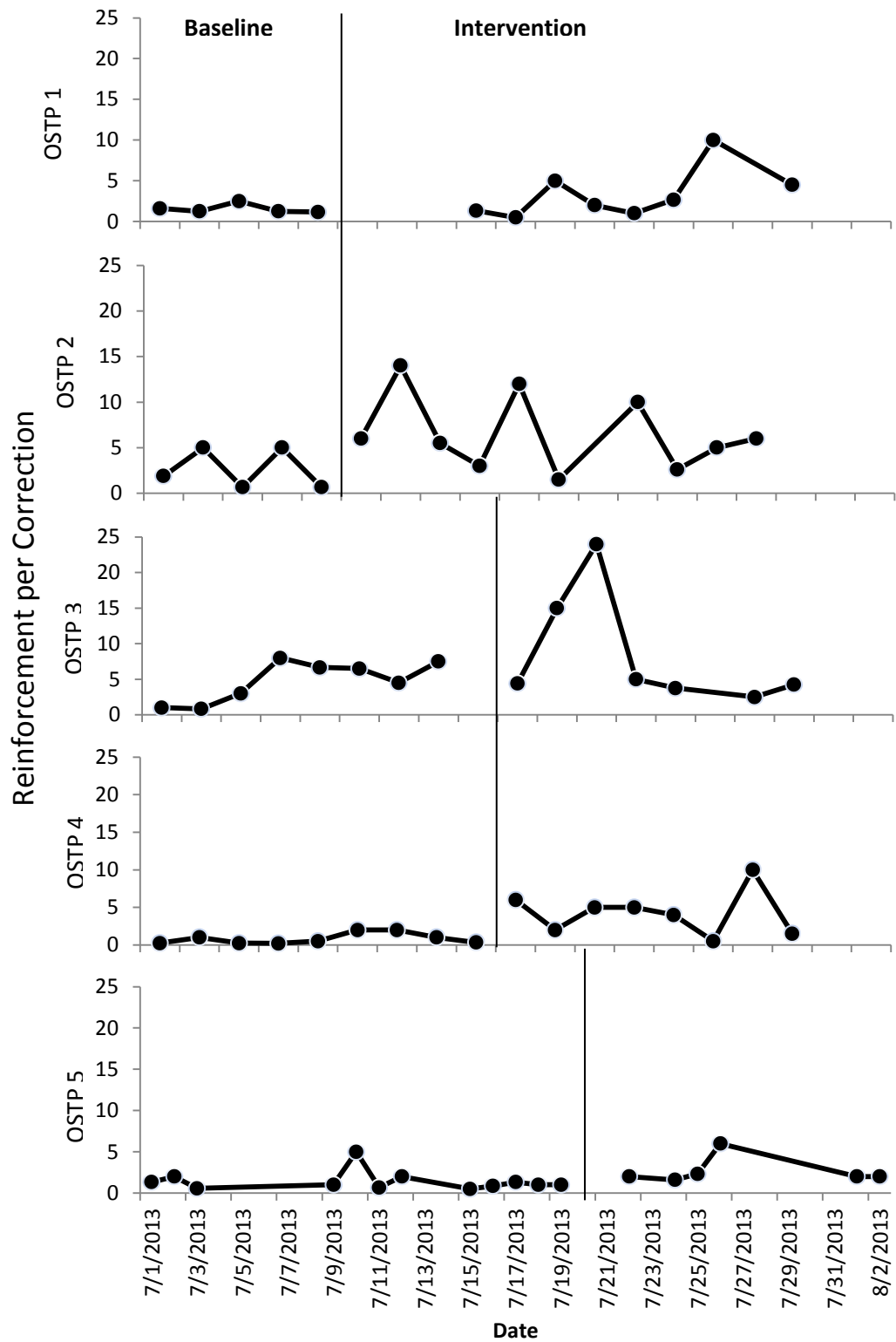


Figure 1. Number of reinforcement statements per correction for each OSTP during observed intervals.

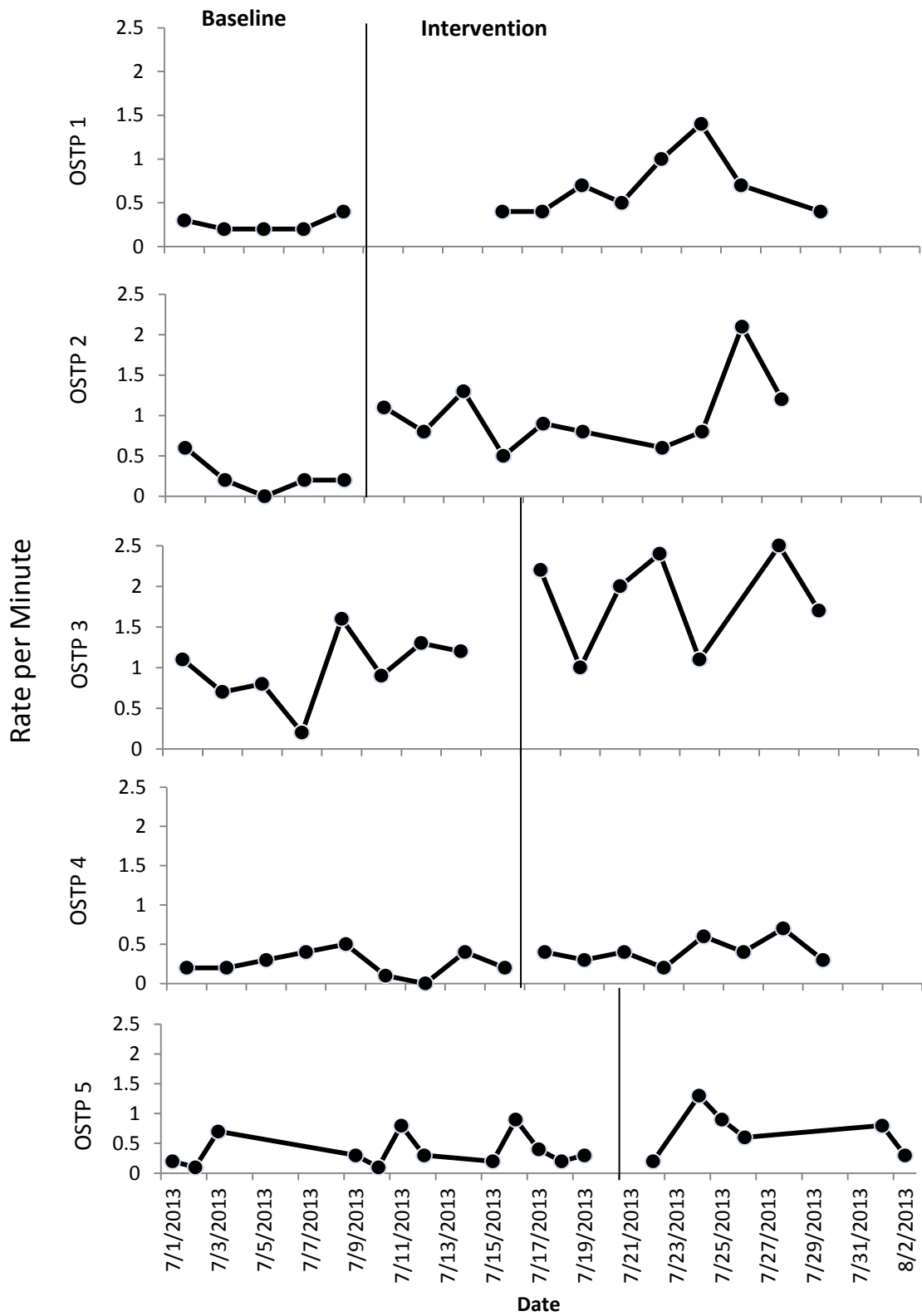


Figure 2. Rate of specific feedback statements delivered to students per minute during ten-minute observations.

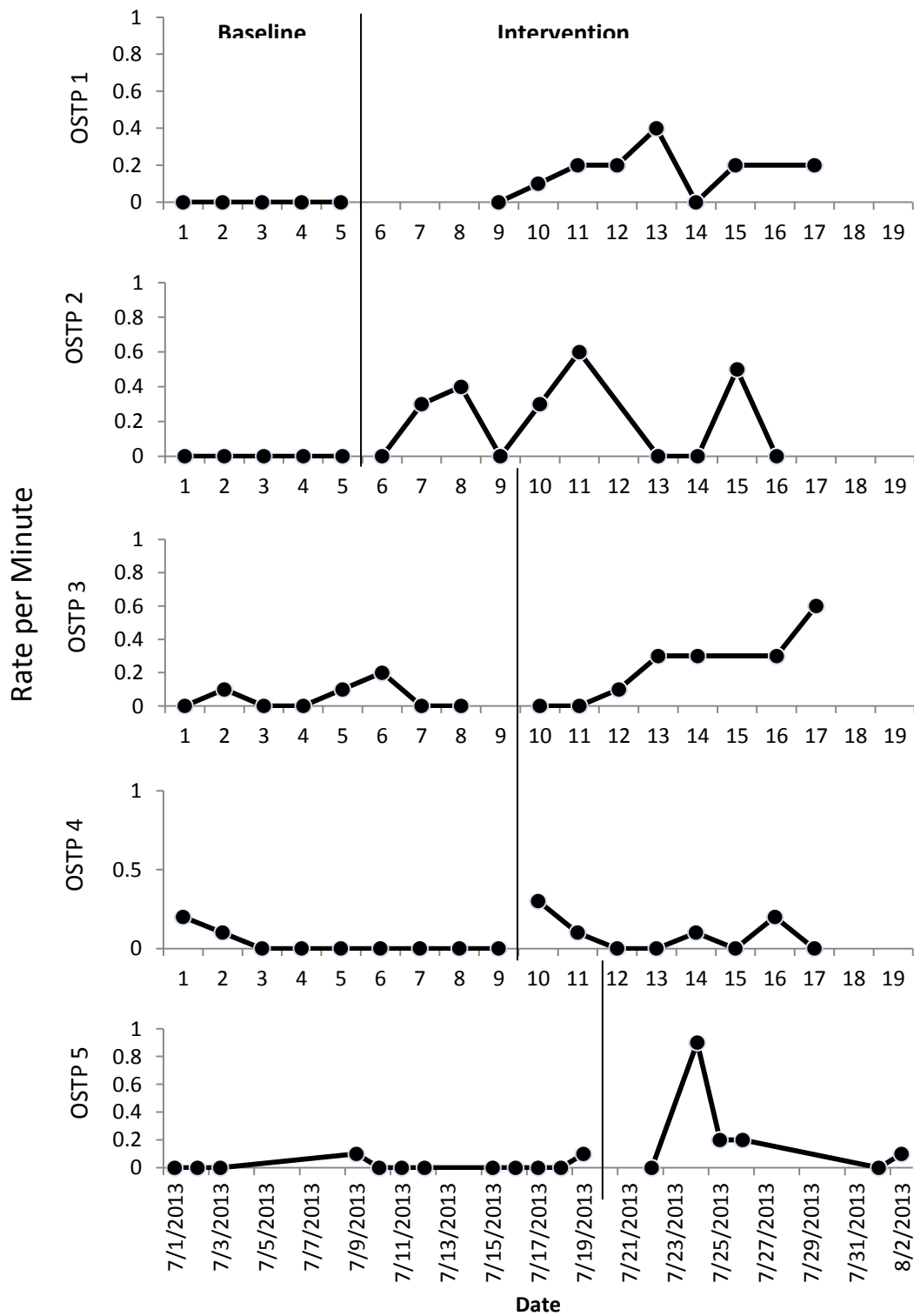


Figure 3. Rate of specific feedback statements including a reference to behavior expectations delivered to students per minute during ten-minute observations.

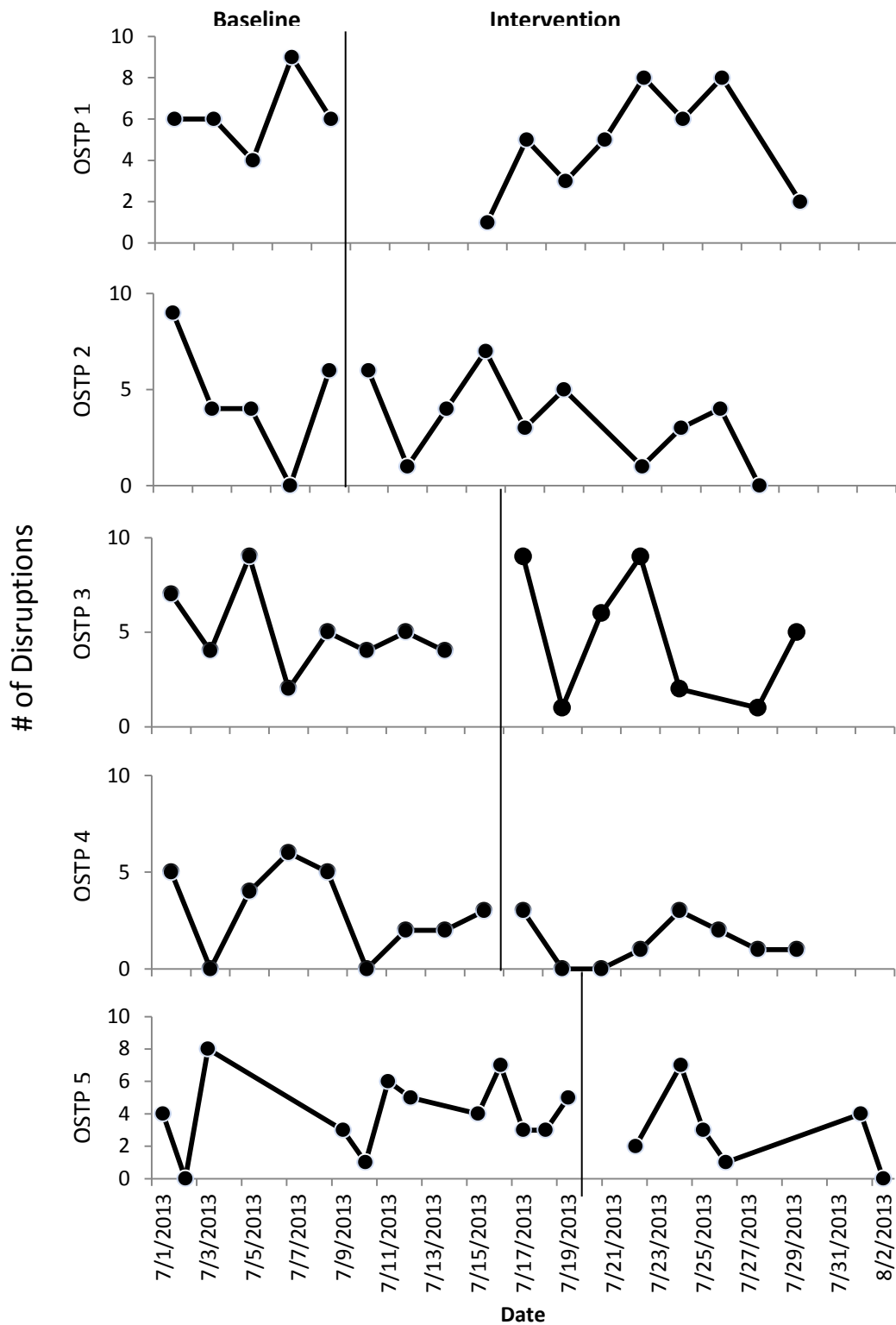


Figure 4. Total number of student disruptions during ten-minute observations.

## Appendix A

Pre-Training Quiz

Version 1

OSTP \_\_\_\_\_

1. One way to create a pleasant, comfortable out-of-school time environment is to interact \_\_\_\_\_ with participants.

- (a) Positively
- (b) Infrequently
- (c) Energetically
- (d) Negatively

2. Labeling behavior means being \_\_\_\_\_ when you deliver praise.

- (a) Vague
- (b) Positive
- (c) Specific
- (d) Strict

3. Reinforcement increases the likelihood that a participant will exhibit a desired behavior again in the future.

- (a) True
- (b) False

4. What is the suggested ratio of reinforcement to correction (i.e. how many positive interactions for every one correction)?

- (a) 3:1
- (b) 2:1
- (c) 5:1
- (d) 8:1

5. Which of the following is a problem behavior--*not* a nuisance behavior?

- (a) Tripping other participants on the playground
- (b) Blurting out answers during group discussion
- (c) Humming during quiet homework time
- (d) Tapping a pencil during independent reading time

6. The second step in ignoring nuisance behavior is praising other participants who are engaged in appropriate behavior.

- (a) True
- (b) False

7. Mr. Murphy sees a participant take a crayon out of another participant's hand while he is using it. Which of the following responses shows Mr. Murphy using correction most effectively:

- (a) "Please don't do that."
- (b) "Please don't take that crayon out of your friend's hand while he is still using it. Wait until he is done or ask if you can borrow it."
- (c) Later in the day he tells the participant: "I saw you take a crayon out of your friend's hand earlier while he was still using it. Please don't do that again."
- (d) All of the above.

8. \_\_\_\_\_ involves reminding participants what appropriate behavior they should be engaging in and then giving them the opportunity to return to that behavior. This step follows correction.

- (a) Feedback
- (b) Prompting
- (c) Redirection
- (d) Praise

9. Which of the following is *not* an element in active supervision?

- (a) Interact
- (b) Tell
- (c) Scan
- (d) Move

10. Scanning the area allows you to see participants who are about to engage in inappropriate behavior and may need redirecting.

- (a) True
- (b) False



1. Interacting positively with students helps create a pleasant, comfortable out of-school time environment.

(a) True

(b) False

2. The out-of-school time professional sees Lisa helping a struggling classmate with a geometry problem. This is part of one of the afterschool program's expectations—"Help Others." Which option below is the best way to praise Lisa by labeling her behavior?

(a) "Way to go, Lisa. That's part of 'Help Others.'"

(b) "Nice job, Lisa. Thanks for helping your classmate with that geometry problem. You really know how to 'Help Others.'"

(c) "Way to go, Lisa."

(d) "You are great at Math, Lisa."

3. Which of the following is not one of the key parts in the definition of reinforcement?

(a) It involves presenting the reinforcement immediately before the desired behavior.

(b) It involves providing a pleasant consequence.

(c) It increases the likelihood of a behavior being exhibited again.

(d) It involves presenting the reinforcement immediately after the desired behavior.

4. 5:1 is the suggested ratio of \_\_\_\_\_ to \_\_\_\_\_.

(a) Remind to reinforce.

(b) Reinforcement to correction.

(c) Move to scan.

(d) Ignore to interact.

5. Which of the following is true about nuisance behaviors?

(a) Nuisance behaviors are an annoyance, but not a significant problem.

(b) Nuisance behaviors do not necessarily require an immediate response.

(c) Nuisance behaviors are mildly disruptive.

(d) All of the above.

6. \_\_\_\_\_ nuisance behavior will make the behavior less likely to occur, or even stop, in the future.

(a) Correcting

(b) Ignoring

(c) Responding to

(d) Praising

7. When using correction, it is important to specifically label the behavior you want participants to change.

(a) True

(b) False

8. Redirection involves reminding participants what appropriate behavior they should be engaging in and then giving them the opportunity to return to that behavior. This step follows correction.

(a) True

(b) False

9. Move, scan and interact are a part of what strategy?

(a) Active supervision

(b) Ignoring nuisance behavior

(c) Remind and reinforce

(d) None of the above

10. Which of the following is true regarding the third element in active supervision, interact?

(a) Out-of-school time professionals should know all of their participants and call them by name frequently.

(b) Positive interactions can be verbal or non-verbal.

(c) Out-of-school time professionals should strive to interact positively with all participants during an activity.

(d) All of the above are true regarding interacting with participants.

## Appendix B

### MEASURE OF ACTIVE SUPERVISION AND INTERACTION in Out-of-School Time (MASI-OST)

|   |              |                     |
|---|--------------|---------------------|
| <b>OST Program:</b>   | <b>Date:</b> | <b>Observer(s):</b> |
| <b>Purpose</b>  |              |                     |
| <p>The Measure of Active Supervision and Interaction in Out-of-School Time (MASI-OST) is a tool to evaluate the extent to which certain behavior support principles are implemented by staff. The consistent implementation of positive, program-wide support helps to promote a more pleasant environment, which is beneficial to students and staff alike. Implementation data from the MASI-OST can be used to evaluate the extent to which certain positive supports are present within your program. This measure is not appropriate for high-stakes individual staff evaluation; rather, it should be used repeatedly over time to understand adherence to specific program practices and contribute to an understanding of the program climate as a whole. Data from the MASI-OST may also be used to plan for staff professional development.</p>   |              |                     |
| <b>Directions</b>   |              |                     |
| <ol style="list-style-type: none"> <li>1. Complete the background information at the top of each page. Review behaviors on page 2. Prepare timer or stopwatch.</li> <li>2. Record the presence of Move, Scan, and Interact (MSI) through momentary time sampling in 15-second intervals. That is, if the OST professional is demonstrating MSI at exactly the end of each 15-second interval, then code the interval as 1; if it is absent, code as 0. Repeat this process for each interval for a 10-minute observation period.</li> <li>3. Throughout the 10-minute observation period, record each instance when “reinforcement”, “correction”, “precorrection,” and “behavior expectations” behaviors are observed by making a tally in the provided box.</li> <li>4. At the end of the observation period, write any clarifying narrative notes about your observation.</li> <li>5. Repeat this observation process for the second OSTP.</li> <li>6. After both observations, summarize observations on page 5.</li> </ol> |              |                     |

| <b>MEASURE OF ACTIVE SUPERVISION AND INTERACTION in Out-of-School Time (MASI-OST)</b> |   |   |
|---|---|---|
| <b>Behaviors</b>  | <b>Definitions, Examples, and Non-Examples</b>  | <b>Assessment Method</b>  |
| Move, Scan, and Interact  | Out-of-school time professional (OSTP) actively moving throughout the space, scanning student behavior, or interacting with student(s).<br><i>Examples:</i> OSTP walking through classroom chatting with students. OSTP actively looking throughout room monitoring student behavior.<br><i>Non-examples:</i> OSTP talking with other staff. OSTP reading a book. | Momentary time sampling at 15-second intervals. Place mark when present at end of interval. |
| Precorrection   | OSTP reminds students of a behavior expectation before an activity, transition or routine.<br><i>Examples:</i> OSTP stating “Remember to walk quietly down the hall” before walking down hall with students.<br><i>Non-examples:</i> OSTP telling students to walk quietly while in the hall.   | Frequency during 10 minute observation period. Mark when present.                           |
| Reinforcement   | OSTP praises or acknowledges student(s) for desired behaviors.<br><i>Examples:</i> OSTP stating “Nice job on your homework” or “I like how you helped Johnny with that art project”.<br><i>Non-examples:</i> OSTP stating neutral or negative statements.   | Frequency during 10 minute observation period. Mark when present.                           |
| Correction  | OSTP reprimands, corrects student(s) when undesired behavior is exhibited.<br><i>Examples:</i> OSTP stating “Next time, don’t run into the classroom” or “Stop yelling”.<br><i>Non-examples:</i> OSTP stating neutral or positive statements.   | Frequency during 10 minute observation period. Mark when present.                           |
| Behavior Expectations   | OSTP references behavior expectations when engaging with student(s).<br><i>Examples:</i> OSTP stating “You brought all your books- that’s Be Prepared” or “Next time, please Be Respectful and be quiet when entering the library”.<br><i>Non-examples:</i> OSTP stating “Keep it up” or “That’s not acceptable”.   | Frequency during 10 minute observation period. Mark when present.                           |

| MASI-OST / Observation of OST Professional (OSTP)   |      |      |      |  |      |      |      |   |      | OSTP #1 / Code: |      |   |      |               |      |            |      |      |      |  |  |  |  |
|---|------|------|------|--|------|------|------|---|------|-----------------|------|---|------|---------------|------|------------|------|------|------|--|--|--|--|
| OST program:  |      |      |      | Setting:   |      |      |      | Observer 1:   |      |                 |      |   |      |               |      |            |      |      |      |  |  |  |  |
| # of students present at start:   |      |      |      | Activity:  |      |      |      | Observer 2:   |      |                 |      |   |      |               |      |            |      |      |      | (n/a)  |  |  |  |
| Complete above background information. Review behaviors and definitions. For 10 consecutive minutes, (a) complete momentary time sampling of MSI in 15 sec intervals, and (b) take a frequency count of precorrections, reinforcement, correction, and behavior expectations. In the precorrection, correction, or reinforcement boxes, place a "+" if the statement provided specific feedback to the student and a "-" if the statement provided general feedback to the student. Write any clarifying narrative notes. Summarize observations on page 4. |      |      |      |  |      |      |      |   |      |                 |      |   |      |               |      |            |      |      |      |  |  |  |  |
| <b>SYSTEMATIC DIRECT OBSERVATIONS</b>   |      |      |      |  |      |      |      |   |      |                 |      |   |      |               |      |            |      |      |      | Start Time:  |  |  |  |
| <b>MOVE, SCAN, INTERACT (MSI):</b> OSTP actively moving throughout the space, scanning student behavior, or interacting with student(s). Place mark when present at end of interval.  |      |      |      |  |      |      |      |   |      |                 |      |   |      |               |      |            |      |      |      |  |  |  |  |
| Interval  | 0:15 | 0:30 | 0:45 | 1:00   | 1:15 | 1:30 | 1:45 | 2:00  | 2:15 | 2:30            | 2:45 | 3:00  | 3:15 | 3:30          | 3:45 | 4:00       | 4:15 | 4:30 | 4:45 | 5:00   |  |  |  |
| MSI   |      |      |      |  |      |      |      |   |      |                 |      |   |      |               |      |            |      |      |      |  |  |  |  |
| Interval  | 5:15 | 5:30 | 5:45 | 6:00   | 6:15 | 6:30 | 6:45 | 7:00  | 7:15 | 7:30            | 7:45 | 8:00  | 8:15 | 8:30          | 8:45 | 9:00       | 9:15 | 9:30 | 9:45 | 10:00  |  |  |  |
| MSI   |      |      |      |  |      |      |      |   |      |                 |      |   |      |               |      |            |      |      |      |  |  |  |  |
| <b>FREQUENCY OBSERVATIONS</b>   |      |      |      |  |      |      |      |   |      |                 |      |   |      |               |      |            |      |      |      |  |  |  |  |
| <b>Precorrection:</b> OSTP reminds students of expected behavior prior to activity.   |      |      |      | <b>Reinforcement (Reinforce/Be positive):</b> OSTP praises or acknowledges student(s) for desired behaviors. |      |      |      | <b>Correction:</b> OSTP reprimands, corrects student(s) when undesired behavior is exhibited. |      |                 |      | <b>Behavior Expectations (BE):</b> OSTP references behavior expectations when engaging with student(s). |      |               |      |            |      |      |      |  |  |  |  |
| Frequency 10 mins.  |      |      |      | Frequency 10 mins.   |      |      |      | Frequency 10 mins.  |      |                 |      | Precorrection   |      | Reinforcement |      | Correction |      |      |      |  |  |  |  |
|   |      |      |      |  |      |      |      |   |      |                 |      |   |      |               |      |            |      |      |      |  |  |  |  |
|   |      |      |      |  |      |      |      |   |      |                 |      |   |      |               |      |            |      |      |      |  |  |  |  |
|   |      |      |      |  |      |      |      |   |      |                 |      |   |      |               |      |            |      |      |      |  |  |  |  |
|   |      |      |      |  |      |      |      |   |      |                 |      |   |      |               |      |            |      |      |      |  |  |  |  |
|   |      |      |      |  |      |      |      |   |      |                 |      |   |      |               |      |            |      |      |      |  |  |  |  |
|   |      |      |      | <input type="checkbox"/> <i>Specific:</i> identifies skill/behavior student exhibited.                       |      |      |      | <input type="checkbox"/> <i>Specific:</i> identifies skill/behavior student exhibited.        |      |                 |      | <input type="checkbox"/> <i>BE posted</i> in area of activity (if indoors).                             |      |               |      |            |      |      |      |  |  |  |  |
|   |      |      |      | <input type="checkbox"/> <i>Immediate:</i> provided asap following desired behavior.                         |      |      |      | <input type="checkbox"/> <i>Immediate:</i> provided asap following desired behavior.          |      |                 |      | <input type="checkbox"/> <i>Adherence</i> reinforced: students praised for adherence.                   |      |               |      |            |      |      |      |  |  |  |  |
|   |      |      |      | <input type="checkbox"/> <i>Appropriate:</i> to student, setting, behavior exhibited.                        |      |      |      | <input type="checkbox"/> <i>Redirection:</i> Accompanied by redirection.                      |      |                 |      | Notes:  |      |               |      |            |      |      |      |  |  |  |  |
|   |      |      |      | <input type="checkbox"/> <i>Delivered</i> across many students in program.                                   |      |      |      | <input type="checkbox"/> <i>Brief duration:</i> Correction is less than 30 seconds.           |      |                 |      |   |      |               |      |            |      |      |      |  |  |  |  |
|   |      |      |      | <input type="checkbox"/> <i>Refers</i> to behavior expectations and/or routines.                             |      |      |      | <input type="checkbox"/> <i>Praise</i> follows shift to desired behavior.                     |      |                 |      |   |      |               |      |            |      |      |      | <input type="checkbox"/> <i>Refers</i> to behavior expectations and/or routines. |  |  |  |

| MASI-OST / Observation of OST Professional (OSTP)   |      |      |           |   |      |             |      |  |       | OSTP #2 / Code: |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
|---|------|------|-----------|---|------|-------------|------|--|-------|-----------------|------|--|------|------|-------------|---------------|------|---------------|------|--|--|--|--|--|--|--|--|---|--|--|--|
| OST program:  |      |      | Setting:  |   |      | Observer 1: |      |  |       |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
| # of students present at start:   |      |      | Activity: |   |      | Observer 2: |      |  | (n/a) |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
| Complete above background information. Review behaviors and definitions. For 10 consecutive minutes, (a) complete momentary time sampling of MSI in 15 sec intervals, and (b) take a frequency count of precorrections, reinforcement, correction, and behavior expectations. In the precorrection, correction, or reinforcement boxes, place a "+" if the statement provided specific feedback to the student and a "-" if the statement provided general feedback to the student. Write any clarifying narrative notes. Summarize observations on page 4. |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
| SYSTEMATIC DIRECT OBSERVATIONS  |      |      |           |   |      |             |      |  |       |                 |      |  |      |      | Start Time: |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
| MOVE, SCAN, INTERACT (MSI): OSTP actively moving throughout the space, scanning student behavior, or interacting with student(s). Place mark when present at end of interval.   |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
| Interval  | 0:15 | 0:30 | 0:45      | 1:00  | 1:15 | 1:30        | 1:45 | 2:00   | 2:15  | 2:30            | 2:45 | 3:00   | 3:15 | 3:30 | 3:45        | 4:00          | 4:15 | 4:30          | 4:45 | 5:00   |  |  |  |  |  |  |  |   |  |  |  |
| MSI   |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
| Interval  | 5:15 | 5:30 | 5:45      | 6:00  | 6:15 | 6:30        | 6:45 | 7:00   | 7:15  | 7:30            | 7:45 | 8:00   | 8:15 | 8:30 | 8:45        | 9:00          | 9:15 | 9:30          | 9:45 | 10:00  |  |  |  |  |  |  |  |   |  |  |  |
| MSI   |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
| FREQUENCY OBSERVATIONS  |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
| Precorrection: OSTP reminds students of expected behavior prior to activity.  |      |      |           | Reinforcement (Reinforce/Be positive): OSTP praises or acknowledges student(s) for desired behaviors. |      |             |      | Correction: OSTP reprimands, corrects student(s) when undesired behavior is exhibited. |       |                 |      | Behavior Expectations (BE): OSTP references behavior expectations when engaging with student(s). |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
| Frequency 10 mins.  |      |      |           | Frequency 10 mins.  |      |             |      | Frequency 10 mins.   |       |                 |      | Frequency 10 mins.   |      |      |             | Precorrection |      | Reinforcement |      | Correction   |  |  |  |  |  |  |  |   |  |  |  |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             | Notes:        |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      | <input type="checkbox"/> <i>Specific: identifies skill/behavior student exhibited.</i> |  |  |  | <input type="checkbox"/> <i>Specific: identifies skill/behavior student exhibited.</i> |  |  |  | <input type="checkbox"/> <i>BE posted in area of activity (if indoors).</i>           |  |  |  |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      | <input type="checkbox"/> <i>Immediate: provided asap following desired behavior.</i>   |  |  |  | <input type="checkbox"/> <i>Immediate: provided asap following desired behavior.</i>   |  |  |  | <input type="checkbox"/> <i>Adherence reinforced: students praised for adherence.</i> |  |  |  |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      | <input type="checkbox"/> <i>Appropriate: to student, setting, behavior exhibited.</i>  |  |  |  | <input type="checkbox"/> <i>Redirection: Accompanied by redirection.</i>               |  |  |  |   |  |  |  |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |      |             |               |      |               |      | <input type="checkbox"/> <i>Delivered across many students in program.</i>             |  |  |  | <input type="checkbox"/> <i>Brief duration: Correction is less than 30 seconds.</i>    |  |  |  |   |  |  |  |
|   |      |      |           | <input type="checkbox"/> <i>Refers to behavior expectations and/or routines.</i>                      |      |             |      | <input type="checkbox"/> <i>Praise follows shift to desired behavior.</i>              |       |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |
|   |      |      |           |   |      |             |      | <input type="checkbox"/> <i>Refers to behavior expectations and/or routines.</i>       |       |                 |      |  |      |      |             |               |      |               |      |  |  |  |  |  |  |  |  |   |  |  |  |

| MASI-OST / Observation of OST Professional (OSTP)   |      |      |           |   |      |             |      |  |       | OSTP #3 / Code: |      |  |      |               |      |            |      |             |      |       |
|---|------|------|-----------|---|------|-------------|------|--|-------|-----------------|------|--|------|---------------|------|------------|------|-------------|------|-------|
| OST program:  |      |      | Setting:  |   |      | Observer 1: |      |  |       |                 |      |  |      |               |      |            |      |             |      |       |
| # of students present at start:   |      |      | Activity: |   |      | Observer 2: |      |  | (n/a) |                 |      |  |      |               |      |            |      |             |      |       |
| Complete above background information. Review behaviors and definitions. For 10 consecutive minutes, (a) complete momentary time sampling of MSI in 15 sec intervals, and (b) take a frequency count of precorrections, reinforcement, correction, and behavior expectations. In the precorrection, correction, or reinforcement boxes, place a "+" if the statement provided specific feedback to the student and a "-" if the statement provided general feedback to the student. Write any clarifying narrative notes. Summarize observations on page 4. |      |      |           |   |      |             |      |  |       |                 |      |  |      |               |      |            |      |             |      |       |
| SYSTEMATIC DIRECT OBSERVATIONS  |      |      |           |   |      |             |      |  |       |                 |      |  |      |               |      |            |      | Start Time: |      |       |
| MOVE, SCAN, INTERACT (MSI): OSTP actively moving throughout the space, scanning student behavior, or interacting with student(s). Place mark when present at end of interval.   |      |      |           |   |      |             |      |  |       |                 |      |  |      |               |      |            |      |             |      |       |
| Interval  | 0:15 | 0:30 | 0:45      | 1:00  | 1:15 | 1:30        | 1:45 | 2:00   | 2:15  | 2:30            | 2:45 | 3:00   | 3:15 | 3:30          | 3:45 | 4:00       | 4:15 | 4:30        | 4:45 | 5:00  |
| MSI   |      |      |           |   |      |             |      |  |       |                 |      |  |      |               |      |            |      |             |      |       |
| Interval  | 5:15 | 5:30 | 5:45      | 6:00  | 6:15 | 6:30        | 6:45 | 7:00   | 7:15  | 7:30            | 7:45 | 8:00   | 8:15 | 8:30          | 8:45 | 9:00       | 9:15 | 9:30        | 9:45 | 10:00 |
| MSI   |      |      |           |   |      |             |      |  |       |                 |      |  |      |               |      |            |      |             |      |       |
| FREQUENCY OBSERVATIONS  |      |      |           |   |      |             |      |  |       |                 |      |  |      |               |      |            |      |             |      |       |
| Precorrection: OSTP reminds students of expected behavior prior to activity.  |      |      |           | Reinforcement (Reinforce/Be positive): OSTP praises or acknowledges student(s) for desired behaviors. |      |             |      | Correction: OSTP reprimands, corrects student(s) when undesired behavior is exhibited. |       |                 |      | Behavior Expectations (BE): OSTP references behavior expectations when engaging with student(s). |      |               |      |            |      |             |      |       |
| Frequency 10 mins.  |      |      |           | Frequency 10 mins.  |      |             |      | Frequency 10 mins.   |       |                 |      | Precorrection  |      | Reinforcement |      | Correction |      |             |      |       |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |               |      |            |      |             |      |       |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |               |      |            |      |             |      |       |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |               |      |            |      |             |      |       |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |               |      |            |      |             |      |       |
|   |      |      |           |   |      |             |      |  |       |                 |      |  |      |               |      |            |      |             |      |       |
|   |      |      |           | <input type="checkbox"/> <u>Specific:</u> identifies skill/behavior student exhibited.                |      |             |      | <input type="checkbox"/> <u>Specific:</u> identifies skill/behavior student exhibited. |       |                 |      | <input type="checkbox"/> <u>BE posted</u> in area of activity (if indoors).                      |      |               |      |            |      |             |      |       |
|   |      |      |           | <input type="checkbox"/> <u>Immediate:</u> provided asap following desired behavior.                  |      |             |      | <input type="checkbox"/> <u>Immediate:</u> provided asap following desired behavior.   |       |                 |      | <input type="checkbox"/> <u>Adherence</u> reinforced: students praised for adherence.            |      |               |      |            |      |             |      |       |
|   |      |      |           | <input type="checkbox"/> <u>Appropriate:</u> to student, setting, behavior exhibited.                 |      |             |      | <input type="checkbox"/> <u>Redirection:</u> Accompanied by redirection.               |       |                 |      | Notes:   |      |               |      |            |      |             |      |       |
|   |      |      |           | <input type="checkbox"/> <u>Delivered</u> across many students in program.                            |      |             |      | <input type="checkbox"/> <u>Brief duration:</u> Correction is less than 30 seconds.    |       |                 |      |  |      |               |      |            |      |             |      |       |
|   |      |      |           | <input type="checkbox"/> <u>Refers</u> to behavior expectations and/or routines.                      |      |             |      | <input type="checkbox"/> <u>Praise</u> follows shift to desired behavior.              |       |                 |      |  |      |               |      |            |      |             |      |       |
|   |      |      |           | <input type="checkbox"/> <u>Refers</u> to behavior expectations and/or routines.                      |      |             |      |  |       |                 |      |  |      |               |      |            |      |             |      |       |

## Appendix C

| Systematic Direct Observation (SDO) Form<br>Student Disruptive Behavior  |    |    |    |    |                       |    |    |    |    |    |    |    |
|--|----|----|----|----|-----------------------|----|----|----|----|----|----|----|
| <p>Operational Definition:</p> <p><b>Disruptive Behavior:</b> Any action, verbal or nonverbal, exhibited by a program participant that interrupts a program routine or activity.</p> <p><u>Examples:</u> talking out, leaving seat when not permitted, playing with materials that are not related to the activity, physical aggression, cursing</p> <p>Directions for Data Collection:</p> <p>A momentary time sampling procedure with 15-second intervals will be used for ten minutes. At the end of each 15-second interval, the observer will randomly select a program participant and record whether they were engaged in disruptive behavior in the spaces provided below.</p> |    |    |    |    |                       |    |    |    |    |    |    |    |
|  |    |    |    |    |                       |    |    |    |    |    |    |    |
| Disruptive Behavior  | 1  | 2  | 3  | 4  | 5                     | 6  | 7  | 8  | 9  | 10 | 11 | 12 |
|  |    |    |    |    |                       |    |    |    |    |    |    |    |
|  |    |    |    |    |                       |    |    |    |    |    |    |    |
| Disruptive Behavior  | 13 | 14 | 15 | 16 | 17                    | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|  |    |    |    |    |                       |    |    |    |    |    |    |    |
|  |    |    |    |    |                       |    |    |    |    |    |    |    |
| Disruptive Behavior  | 25 | 26 | 27 | 28 | 29                    | 30 | 31 | 32 | 33 | 34 | 35 | 36 |
|  |    |    |    |    |                       |    |    |    |    |    |    |    |
|  |    |    |    |    |                       |    |    |    |    |    |    |    |
| Disruptive Behavior  | 37 | 38 | 39 | 40 | Observation Complete! |    |    |    |    |    |    |    |
|  |    |    |    |    |                       |    |    |    |    |    |    |    |

| Summary Scores  |
|---|
| Total # of intervals disruptive behavior present: _____                                   |
| Total # of intervals observed: _____  |
| Total % of observed intervals disruptive behavior present (present/observed X 100): _____ |



## Appendix D

### Performance Feedback: Observation Summary

|  |                    |                  |
|--|--------------------|------------------|
| <b>Date:</b>   | <b>Consultant:</b> | <b>OSTP ID#:</b> |
| Thank you for allowing me to be a part of your program activities today. |                    |                  |

**Strengths: You implemented some strategies very well today**

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**Areas for Improvement: Areas and/or skills**

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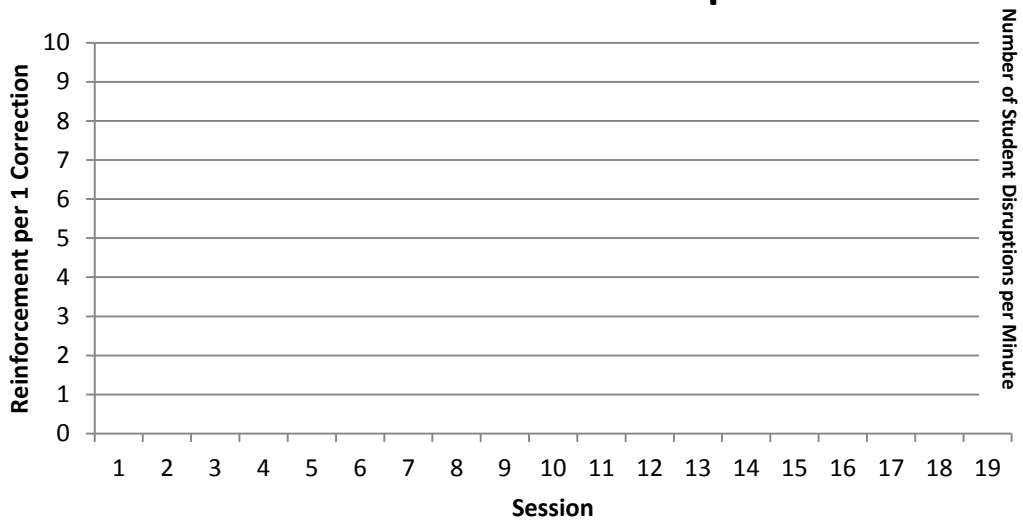
---



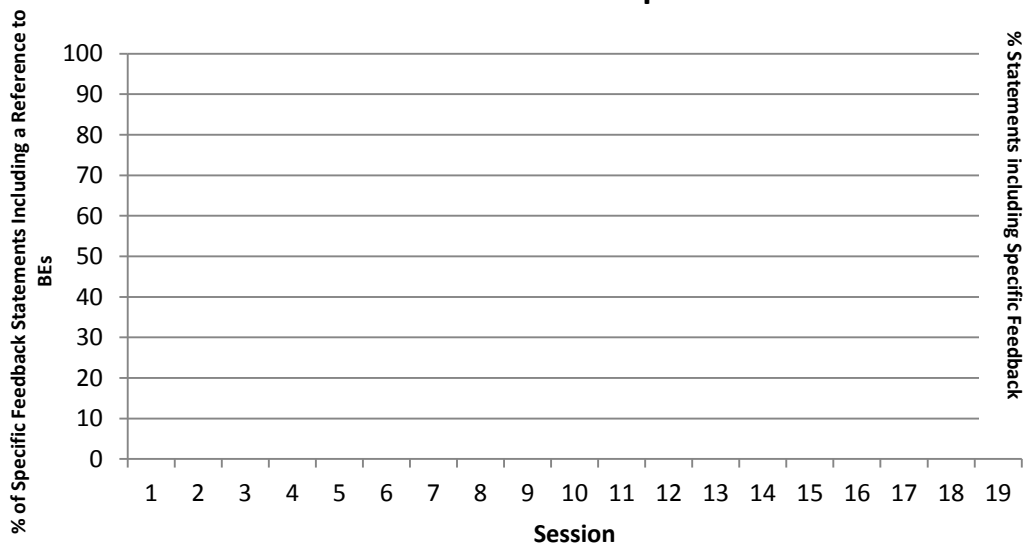
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| PBIS Strategies                          | %<br>Intervals<br>Present | Ratio    | % of<br>Statements | Goal  | Curriculum<br>Reference                 |
|--|---------------------------|----------|--------------------|---|---|
| Move, Scan,<br>Interact                  | ____%                     |          |                    | 80% of observed<br>intervals  | <i>Chapter 4:</i><br>Active Supervision |
| Reinforcement<br>to Correction<br>Ratio  |                           | ____ : 1 |                    | 5:1 praise to<br>correction ratio   | <i>Chapter 1:</i><br>Labeling Behavior  |
| Specific<br>Feedback                     |                           |          | ____ %             | 80% of<br>Precorrection,<br>Correction, or<br>Reinforcement<br>Statements | <i>Chapter 1:</i><br>Labeling Behavior  |
| Reference to<br>Behavior<br>Expectations |                           |          | ____ %             | 50% of Specific<br>Feedback<br>Statements                                 | <i>Chapter 3:</i><br>Teach Expectations |

## Reinforcement to Correction Ratio and Rate of Student Disruption



## % Statements including Specific Feedback and % Specific Feedback Statements Including a Reference to Behavior Expectations



## Appendix E

|  |
|--|
| OSTP Performance Feedback Protocol<br>Adapted from Farrell & Collier-Meek (2012) |
|--|

### **BEFORE PERFORMANCE FEEDBACK:**

1. Complete MASI.
2. Complete Observation Feedback Form.
3. Prepare Performance Feedback Notes & TI Form.

### **PERFORMANCE FEEDBACK PROCEDURES:**

1. **Greet the OSTP and turn on the tape recorder.**

Then say: *"Today is [Today's date] and I'm with [OSTP ID]."*

2. **Evaluate intervention process**

Say: *"How do you think the positive behavior strategies are working?"*

3. **Evaluate student responsiveness**

Say: *"How do you think the participants are responding to the strategies? Let's look at the data. [Look at graphed student data]."*

4. **Evaluate intervention process**

Say: *"Do you have any thoughts or questions about the strategies?"*

5. **Review implementation strengths and weaknesses.**

Go through Observation Summary and utilize MASI definitions as needed.

Say: *"You implemented some strategies very well today. [Provide specifics and praise here]."*

Say: *"There are a few areas that could benefit from some improvement. It's difficult. Let's look at these strategies. [Provide specifics and review definitions]."*

6. **Review implementation graphs.**

Go through Observation Summary and utilize MASI definitions as needed.

Say: *"Let's take a look at the numbers. [Review data while explaining strategies and assessment methods]."*

7. **Review next goal.**

Say: *"Now, let's look at your goals."*

8. **Confirm OSTP understanding**

Say: *"Okay, does that make sense? Any questions about these strategies?"*

9. **Confirm OSTP commitment to increasing implementation**

Say: *"Okay, so do you think you'll be able to incorporate these strategies into your work?"*

**10. Ask if OSTP has any additional questions.**

*Say: "Okay, that's it for now. Do you have any questions or concerns?"*

## Appendix F

|  |
|--|
| Performance Feedback Notes & TI Form<br>Adapted from Farrell & Collier-Meek (2013) |
|--|

|              |                    |                  |
|--------------|--------------------|------------------|
| <b>Date:</b> | <b>Consultant:</b> | <b>OSTP ID#:</b> |
|--------------|--------------------|------------------|

| PF Steps   | Yes, complete | No, skipped |
|--|---------------|-------------|
| 1. Greet the OSTP and turn on recorder.                  |               |             |
|  |               |             |
| 2. Evaluate intervention process.                        |               |             |
|  |               |             |
| 3. Evaluate student responsiveness (show graph).         |               |             |
|  |               |             |
| 4. Evaluate intervention process.                        |               |             |
|  |               |             |
| 5. Review implementation strengths and weaknesses.       |               |             |
|  |               |             |
| 6. Review implementation data and strategies.            |               |             |
|  |               |             |
| 7. Review goals.   |               |             |
|  |               |             |
| 8. Confirm OSTP understanding.                           |               |             |
|  |               |             |
| 9. Confirm OSTP commitment to increasing implementation. |               |             |
|  |               |             |
| 10. Ask if OSTP has any additional questions.            |               |             |
|  |               |             |