The Effects of Check In/Check Out on Levels of Problem Behavior and Academic Engagement in Elementary School Students

Leila Mullooly Miller
University of Southern Mississippi

Follow this and additional works at: https://aquila.usm.edu/masters_theses
Part of the Child Psychology Commons, Counseling Psychology Commons, Developmental Psychology Commons, and the Educational Psychology Commons

Recommended Citation
Miller, Leila Mullooly, "The Effects of Check In/Check Out on Levels of Problem Behavior and Academic Engagement in Elementary School Students" (2011). Master's Theses. 229.
https://aquila.usm.edu/masters_theses/229
The University of Southern Mississippi

THE EFFECTS OF CHECK IN/ CHECK OUT ON LEVELS OF PROBLEM BEHAVIOR AND ACADEMIC ENGAGEMENT IN ELEMENTARY SCHOOL STUDENTS

by

Leila Mulloly Miller

A Thesis
Submitted to the Graduate School of The University of Southern Mississippi in Partial Fulfillment of the Requirements for the Degree of Master of Arts

Approved:

__________________________
Brad A. Dufrene
Director

__________________________
D. Joe Olmi

__________________________
Heather E. Sterling

__________________________
Dean of the Graduate School

December 2011
ABSTRACT

THE EFFECTS OF CHECK IN/ CHECK OUT ON LEVELS OF PROBLEM BEHAVIOR AND ACADEMIC ENGAGEMENT IN ELEMENTARY SCHOOL STUDENTS

by Leila Mullooly Miller

December 2011

Previous studies have largely evaluated the effects of check in/ check out (CICO) using office discipline referrals (ODRs). However, ODRs are not always reliable measures of student behavior, and direct observation is known to be an accurate tool for behavioral measurement. Due to this, the current study used direct observations to evaluate the effects of CICO on levels of problem behavior and academic engagement for a group of elementary school students. One second, one fourth, and one sixth grade student served as participants. Results indicate CICO is effective in decreasing problem behavior and increasing academic engagement. Data from teacher ratings of appropriate behavior and direct observations of academic engagement were analyzed using a Spearman’s rank correlation. A moderate correlation between teacher ratings and direct observation was found, indicating teacher ratings may be a reliable indicator of student academic engagement.
ACKNOWLEDGMENTS

I would like to express my appreciation to my major professor, Dr. Brad A. Dufrene, for his guidance and mentoring over the course of this project. It has been a pleasure to learn from a professor so devoted to promoting students’ learning and research interests. I would also like to thank my committee members, Dr. D. Joe Olmi and Dr. Heather E. Sterling, for their support both in this project and over the course of my graduate career.

My family has provided me with unconditional love and support over the past few years. I am so thankful to my parents for teaching me the importance of education and encouraging me to pursue my dreams. I would also like to thank my brother, Ross Mullooly, for his constant support despite being under more stress than I could imagine. His strength and determination have inspired me more than he knows.

Finally, I must thank my husband, Keith Miller, who has been there to support me throughout all of the stresses of graduate school even while in graduate school himself and while starting a career. I am so grateful for his understanding and encouragement, and hope to spend the rest of my life showing him as much love as he has shown me the past few years.
# TABLE OF CONTENTS

ABSTRACT .......................................................................................................................... ii

ACKNOWLEDGMENTS ......................................................................................................... iii

LIST OF TABLES ..................................................................................................................... v

LIST OF ILLUSTRATIONS ...................................................................................................... vi

CHAPTER

I. INTRODUCTION ................................................................................................................. 1

   Positive Behavior Interventions and Supports
   Check in/Check out
   Daily Behavior Report Card
   School-Home Notes
   Rationale and Purpose of the Study
   Research Questions

II. METHODS ......................................................................................................................... 28

   Participants and Setting
   Dependent Measures
   Materials
   Design
   Procedure
   Procedural and Treatment Integrity

IV. RESULTS ......................................................................................................................... 45

   Direct Observations of Behavior
   Teacher Ratings of Appropriate Behavior
   Statistical Analysis
   Office Discipline Referrals
   Teacher Ratings of Acceptability

V. DISCUSSION ...................................................................................................................... 57

APPENDIXES .......................................................................................................................... 63

REFERENCES .......................................................................................................................... 86
LIST OF ILLUSTRATIONS

Figure

1. Direct Observations of Student Behavior (i.e., Problem Behavior and Academic Engagement) for Each Participant. ........................................................................................................50

2. Percentage of Points Earned Daily for Each Participant. ........................................54
CHAPTER I

INTRODUCTION

In the United States, reports of incidences of problem behavior in public schools are increasing not only in high schools, but in elementary and middle schools as well (Hawken, 2006; McCurdy, Kunsch, & Riebstein, 2007; Scott, 2001). In the typical school, 25% of students may be expected to present some problem behaviors, with 3% to 7% exhibiting chronic behavior problems (Scott). Algozzine, Christian, Marr, McClanahan, and White (2008) found disruption, disrespect, and fighting/aggression to be the most common problem behaviors in elementary school settings, with disruptive behavior accounting for 42% of all office discipline referrals (ODRs). Additionally, the overall number of discipline referrals received by elementary school students was found to increase as they progress through school, indicating an escalation in the frequency of problem behavior as students age (Algozzine et al). Dealing with disruptive students can take up to 80% of a teachers’ instructional time, a problem which will only get worse as behavioral issues increase (Scott).

Problem behaviors as early as kindergarten and elementary school have been linked to poor outcomes, such as low grades, delinquency, aggression in adolescence and adulthood, and high school dropout (Broidy et al., 2003; Ensminger & Slusarcick, 1992; Luiselli, Putnam, Handler, & Feinberg, 2005; Vitaro et al., 1999). High school dropout rates have become a problem in the U.S., with 11% of Americans aged 16 to 24 being high school dropouts (Vitaro, Brendgen, & Tremblay, 1999). Individuals who do not complete high school face higher rates of unemployment and lower lifetime earnings than high school graduates (Ensminger & Slusarcick). Additionally, students who exhibit
conduct problems in elementary school are more at risk for juvenile delinquency than their peers (Broidy et al).

Early behavioral intervention can improve outcomes for students exhibiting disruptive behaviors in elementary school. Vitaro and colleagues (1999) found that early intervention for disruptive behavior decreased disruptiveness exhibited at ages 9, 10, and 11. Additionally, the probability of students being retained or placed in special education was reduced by more than half when early intervention attempts were made. Also, students who thought their teachers perceived them as doing well in school were less likely to drop out, indicating positive teacher attention may decrease the likelihood a student will withdraw from school (Ensminger & Slusarcick, 1992).

School-wide positive behavior interventions and support (SWPBIS) is a system-wide approach to preventing problem behavior and improving academic and prosocial behavior in schools. SWPBIS provides students with a more structured environment and clearly stated rules and expectations, in addition to increased positive attention and reinforcement for appropriate behavior (Warren et al., 2006). When SWPBIS is implemented with integrity, students have been shown to demonstrate increases in academic achievement as well as decreases in suspensions and ODRs (Lassen, Steele, & Sailor, 2006). In fact, many have speculated that SWPBIS may be effective for managing the behavior of 80-90% of the student population (Sherrod, Getch, & Ziomek-Daigle, 2009; Sugai & Horner, 2008).

For some students, approximately 10-20%, SWPBIS may not be effective in reducing problem behaviors to an acceptable level (McCurdy, Kunsch & Reibstein, 2007; Sherrod et al., 2009). For such students, Tier 2 interventions such as the Daily Behavior
Report Card (DBRC) may be effective in reducing or eliminating problem behaviors. The DBRC intervention increases the amount of behavioral feedback students receive throughout the day and has been shown to decrease problem behaviors and increase academic engagement and appropriate behaviors (Chafouleas, Riley-Tillman, & McDougal, 2002; McGoey, Prodan, Condit, 2007).

The Check in/Check out (CICO) intervention uses a DBRC in addition to increased positive attention, behavioral feedback, and opportunities for reinforcement (Hawken & Horner, 2003; Todd, Campbell, Meyer, & Horner, 2008). CICO provides students with multiple opportunities throughout the day to receive positive feedback on their behavior, and access to rewards contingent on the students meeting pre-determined point goals on DBRCs. CICO has been shown to be effective in reducing problem behavior and increasing academic engagement (Hawken & Horner; Todd et al.). Additionally, research has shown typical school personnel to be able to implement CICO with high fidelity (Filter, McKenna, Benedict, Horner, Todd, & Watson, 2007). Though CICO has been shown to be effective in some studies, the literature base is limited, and more studies are needed.

Positive Behavior Interventions and Support

SWPBIS is a data-driven, team-based approach to creating effective systemic practices and behavioral interventions for increasing prosocial and positive academic outcomes while decreasing and preventing occurrences of problem behavior (Lassen, et al., 2006; Office of Special Education Programs [OSEP] Center on Positive Behavioral Support, 2002; Scott, 2001; Sugai & Horner, 2008; Warren et al., 2006). SWPBIS typically includes a team of staff members, administrators, parents, and other
stakeholders, who guide the planning process; the definition of school-wide rules and expectations; the teaching of school rules and expectations to all students; the methods of recognizing appropriate behavior and discouraging problem behaviors; and the methods of using data to monitor the effectiveness and fidelity of implementation (Warren et al.). SWPBIS utilizes a three-tier approach to intervention in which primary interventions, Tier 1, are preventative measures available to all students and teachers in all school settings; secondary interventions, Tier 2, are more focused, and seek to reduce or eliminate the occurrence of problem behavior; and tertiary interventions, Tier 3, are individualized and available to particular students at high risk of problem behavior or academic difficulties (OSEP Center of Positive Behavioral Support; Sugai & Horner, 2002; Sugai & Horner).

Implementation of SWPBIS has been shown to have a positive effect on the adequacy of behavior support plans developed in the school. Medley, Little, and Akin-Little (2008) compared behavior support plans in schools with and without SWPBIS. Nine schools from a single school district in Southern California participated in the study. Two of the schools had implemented SWPBIS at the time of the study. Each school implementing PBIS had a Behavior Team in charge of ensuring the new policies were put into practice and a Student Study Team in charge of handling behavior problems of individual students. The schools with SWPBIS received four days of training on the PBIS system at the start of the year as well as a half-day training session on how to write behavior support plans. Individuals at the non-SWPBIS schools attended a four-hour, district-wide training on the writing of behavior support plans.
Medley and colleagues (2008) generated lists of students with active behavior plans at each school, and students’ behavior plans were randomly selected for evaluation using the Behavior Support Plan-Quality Evaluation (BSP-QE). Results indicated that behavior support plans developed in schools implementing SWPBIS were technically stronger (e.g., resulted in higher BSP-QE scores) than those developed in non-SWPBIS schools. By increasing the strength of behavior support plans, schools implementing SWPBIS are able to provide better services and work toward better outcomes for students. The results of this study indicate that implementation of SWPBIS improves the continuum of services available to support student social behavioral performance.

SWPBIS has also been shown to be effective in reducing the number of ODRs in schools implementing the intervention. Sherrod and colleagues (2009) demonstrated the effect of SWPBIS on ODRs in an urban elementary school. The study was conducted at a single school in which SWPBIS was implemented. The school served 468 students, five of which were selected to participate in a behavioral support group. Students selected for the group had received at least four ODRs at the beginning of the study. The behavioral group served as a Tier 2 intervention for the targeted students, which was designed to address the specific areas in which the students needed improvement. All students in the school participated in three trainings on the school-wide rules and behavioral expectations and were given a quiz following the trainings.

Sherrod and colleagues (2009) found the school exhibited a 26% reduction in the number of ODRs in the year SWPBIS was implemented compared to the previous year. The results found by Sherrod and colleagues supported the use of SWPBIS and the effectiveness of Tier 2 interventions. One limitation of this study was the use of ODRs as
the only measure of behavior. There are several threats to the reliability of ODRs as measures of individual problem behavior, including the variety of individuals reporting behavior, and individual biases which may affect reports of problem behavior.

Luiselli and colleagues (2005) showed SWPBIS to be effective in reducing problem behaviors and increasing academic outcomes in elementary school students. The study took place in an urban elementary school with 666 students at the start of the study, which decreased to 590 by the end of the year, and 550 students in each following year. During pre-intervention, all students were presented with a policy book outlining the SWPBIS system. At this time, the consequence of any problem behavior was a discipline referral, and the administrator determined disciplinary actions. Psychologists assisted school staff in development of the SWPBIS system, and provided teacher trainings and feedback. Also, the psychologists developed more intense behavioral interventions when necessary. The follow-up phase occurred during the third school year of the study, starting in August. During follow-up, the psychologists did not conduct site visits, maintaining contact with school personnel via e-mail and telephone.

Luiselli and colleagues (2005) found that the number of ODRs and suspensions per 100 students decreased from an average of 1.3 referrals per day in baseline to an average of 0.73 referrals per day during intervention and continued to decrease in follow-up to an average of 0.54 referrals per day. The collateral effects of SWPBIS included increases of 18 to 25% in the students’ reading comprehension and math percentile ranks, respectively, based on the Metropolitan Achievement Tests, Seventh Edition. The results supported the use of SWPBIS to reduce problem behavior in the elementary school setting, while simultaneously improving academic performance.
When SWPBIS is implemented, up to 80% of students may not require additional behavioral supports; however, the remaining 20% may need a continuum of intensifying supports to prevent severe problem behaviors (Hawken, 2006; OSEP Center on Positive Behavioral Support, 2002). For 5-15% of these students, Tier 2 interventions may be effective in preventing poor outcomes. Tier 2 interventions focus on reducing or eliminating problem behaviors by establishing effective and efficient interventions.

Check in/Check out

CICO is a Tier 2 intervention that utilizes a DBRC in conjunction with increased positive teacher feedback and prompts for appropriate behavior throughout the school day (Filter et al., 2007; Todd et al., 2008). Also known as the Behavior Education Plan (McCurdy et al., 2007), CICO provides students with behavioral feedback multiple times throughout the day using the DBRC, as well as the opportunity to earn rewards for engaging in appropriate behavior (Hawken & Horner, 2003; McCurdy et al.). The design of the CICO intervention involves structured times throughout the day in which the participating student receives feedback on his/her behavior. When CICO is implemented, the student is required to “check-in” with a designated staff member before school. The morning check-in staff member provides the student with a DBRC, which the student carries with them throughout the day. The student presents his or her teachers with the DBRC at the beginning of each class period and receives feedback on their behavior at the end of the period. Each teacher awards the student points on the DBRC based on the student’s behavior in that class period. At the end of the school day, the student “checks out” with a designated staff member who tallies the points earned on the DBRC and provides access to rewards when a pre-determined point goal is met. The DBRC is then
brought home by the student for a parent to sign and is returned at morning check-in. Through this process, the CICO intervention provides students with access to positive attention and reinforcement for appropriate behavior.

As CICO is implemented by school staff members and teachers, it is important for typical school personnel to be able to conduct the intervention with high fidelity. Filter and colleagues conducted a post-hoc study to evaluate the fidelity and effectiveness of CICO when implemented by such school personnel (2007). The participants were faculty, staff, and students from three schools in the Pacific Northwest. Students selected for participation had (a) attended school for at least six weeks prior to beginning CICO, (b) were nominated by faculty or staff to receive behavior support, (c) and had participated in the CICO intervention for at least six weeks prior to the beginning of the study (Filter et al.). When CICO was implemented, treatment fidelity data were monitored monthly at the behavioral support meetings using a checklist which asked if the child (a) checked in before school, (b) was given feedback at the designated times throughout the school day, (c) attended after-school check out, (d) and had a parent review the home note. Data were then collected, graphed, and used for decision-making (Filter et al.).

Filter and colleagues (2007) found school personnel were able to implement CICO with fidelity, and that CICO was effective in reducing problem behaviors as measured by ODRs. Students' number of ODRs decreased from an average of one ODR every 5.59 days to one ODR every 8.47 days. Results indicated that CICO can decrease the number of ODRs received by students with whom the intervention is implemented.
Though Filter and colleagues (2007) found positive results when implementing CICO, there were several limitations to the study. As this was a post-hoc study, no data were provided on the initial implementation of CICO. Additionally, fidelity of implementation data were only collected twice during the study, and data collection consisted of teacher-report of implementation rather than collection of CICO data. Treatment fidelity data should be collected by an independent observer, and include collection of permanent product data from CICO as well as observation of check-ins and check-outs. Furthermore, three of the students had not received ODRs prior to implementation of CICO, which indicates that they may not have needed the intervention. Also, as problem behavior was monitored using ODRs, there was no chance for these students to decrease the number of ODRs they received. Finally, there are substantial issues regarding use of ODRs as the primary dependent measure for an intervention study. Specifically, there are several threats to the reliability of ODRs as measures of individual problem behavior, such as the variety of individuals reporting behavior, and individual biases which may affect reports of problem behavior. The use of ODRs may vary greatly across school personnel (Peacock, Ervin, Daly, & Merrill, 2010).

In a study by McCurdy and colleagues (2007), the effectiveness of CICO on reducing problem behaviors of elementary school students as indicated by DBRC points earned was investigated. The participants were school personnel and eight students at an urban elementary school in the northeastern United States. All student participants were selected because they either exhibited persistent problem behavior in the classroom or had been receiving behavioral services that incorporated similar intervention strategies. One teacher served as the facilitator, keeping track of all records and conducting check-
ins and check-outs. The CICO procedure differed from other studies in that the students did not bring the DBRCs home for parent signatures.

McCurdy and colleagues (2007) found the CICO intervention to be effective for 75% of the participating students, with 25% exhibiting decreases in points earned on the DBRC during intervention. Overall, teachers and students rated the intervention as highly acceptable. The decreases in problem behavior and overall high acceptability of the CICO intervention support its use as a method of reducing disruptive behavior in classroom settings. Though points earned on the DBRC were used as the daily measure of appropriate behavior, direct observation would have provided more information on the actual levels of problem behaviors displayed by participants.

ODRs are a measure of problem behaviors typically used in the CICO literature. Hawken, MacLeod, and Rawlings assessed the effects of CICO on ODRs in an elementary school setting (2007). The participants were 12 students from an urban elementary school, which had been implementing SWPBIS for three years. Students were selected for participation if they (a) had entered the CICO intervention at least two months after the beginning of school, (b) had received the CICO intervention for a minimum of six weeks, (c) had received at least two ODRs, (d) were nominated by school personnel for more intensive behavioral support, (e) and exhibited problem behavior throughout the day. None of the students exhibited severe problem behaviors, with common referral concerns being talking out, making inappropriate comments, playing with objects and failing to complete assignments (Hawken et al.).

When CICO was implemented, ODRs per month decreased for nine of the twelve students, and only two students were referred for additional behavioral intervention. The
results indicated CICO might be effective for decreasing problem behaviors as measured by ODRs. Hawken and colleagues (2007) hypothesized that three students who did not respond to CICO did not exhibit attention-maintained problem behavior. Similar to the Filter et al. study (2007), a limitation of this study was the use of ODRs as the primary measure of intervention effectiveness. As mentioned previously, the behaviors for which a child receives ODRs and the consistency of referrals may vary greatly across school personnel (Peacock et al., 2010).

Hawken and Horner (2003) examined the effects of a CICO intervention on the problem behavior exhibited by a group of middle school students. The participants were four students from a middle school in the Pacific Northwest who had received at least five ODRs, were nominated by school staff, and had not received any additional behavioral services. Data collected using the Functional Assessment Checklist for Teachers and Students (FACTS; March et al., 2000) interview indicated all participants’ problem behavior may have been attention-maintained. Data were collected on the occurrences of problem behaviors and academic engagement using direct observation. Problem behaviors observed included talking out, talking back, out-of-seat, inappropriate language, threatening gestures, throwing objects, not following direction within 10 s of instruction delivery, and physical aggression (Hawken & Horner, 2003). Data were also collected once per week on the behavior exhibited by a same-sex classroom peer for each participant to be used for comparison. Academic engagement was defined as the student (a) looking at the teacher while instructions were given, (b) working with a peer when instructed, (c) reading silently or completing an assignment, (d) engaging in an activity approved by the teacher, or (e) discussing academic material with the teacher.
The participants exhibited problem behavior in an average of 18.25% of intervals during baseline, whereas control peers exhibited problem behavior in an average of 4% of intervals. When CICO was implemented, problem behavior decreased for all participants with problem behavior occurrence ranging from 1% to 12% of intervals for the participants. Each student also exhibited a reduction in variability. Control peers were academically engaged in 90% of the intervals, whereas the target participants exhibited mean levels of academic engagement ranging from 48% to 70% of intervals. When the CICO intervention was implemented, mean academic engagement increased from 58% to 85% of intervals for target participants.

Although the participants demonstrated improvement when CICO was implemented, observation data were only collected in one classroom and improvements in behavior may not have generalized to various school settings. Additionally, there was a large amount of overlap in data between baseline and the intervention phase. The level of overlap decreases the strength of the conclusions one can draw from the results.

In a study by Todd, Campbell, Meyer, and Horner, the effects of the CICO program when implemented by typical elementary school personnel were examined (2008). The participants were seven teachers, three CICO program staff, and four elementary school-aged boys from a rural elementary school in the Pacific Northeast. An administrator nominated the boys due to excessive ODRs for classroom disruption and teacher verification of their disruptive behavior. Prior to implementation of CICO, a functional behavioral assessment was conducted for each of the student participants. The assessment consisted of an interview with each student’s primary teacher using the FACTS, which was used to form a hypothesis statement (Todd et al.). The authors also
conducted one or two direct observations of each child in the academic period specified as most problematic in the FACTS. Todd and colleagues completed an antecedent-behavior-consequence (ABC) chart to compare to information gathered during the FACTS interview. If information gathered from the FACTS and direct observations was in agreement, the hypothesis was considered confirmed.

Problem behaviors exhibited by the participants included out of area, talking out, noncompliance, talking to peers, disruptive behavior, and negative interactions (Todd et al., 2008). Direct observations of problem behavior occurred three to four times per week in the academic period identified as most problematic by the FACTS. Comparison peers were observed two to five times during baseline, and one to six times during intervention. Additionally, ODR data were also collected as another measure of problem behavior.

The functional behavior assessment indicated the problem behaviors exhibited by all participants were likely attention-maintained. Mean baseline levels of problem behavior ranged from 13.3% to 34% of intervals for the participants. When CICO was implemented, all participants decreased their levels of problem behavior, with mean levels of problem behavior ranging from 8% to 14% across participants. The average number of ODRs received across participants also decreased, with participants receiving an average of 0.14 ODRs per day in baseline and 0.04 ODRs per day during CICO. The results found by Todd and colleagues (2008) support the use of CICO as a Tier 2 intervention for problem behavior.

Though Todd and colleagues (2008) found CICO to be effective, there were some limitations to the study. Treatment integrity data were not collected, so the fidelity with
which CICO was implemented is unknown. Also, one participant began taking Ritalin on the first day of CICO implementation, which presents a major threat to internal validity. Additionally, data were not collected for appropriate behaviors. Therefore, the extent to which students replaced problem behaviors with appropriate behaviors is unknown.

In a study conducted by Harpole (2010), the effects of CICO on ODRs and teacher ratings of appropriate behavior were investigated using a multiple baseline across participants design. The participants were three general education high school students from two schools in a southeastern state. School staff nominated students for participation due to high numbers of ODRs; exhibiting social behavior problems; and exhibiting problem behaviors that were not serious, dangerous, or infrequent. These students were not involved in any other behavioral interventions and parent/guardian consent was obtained prior to participation. The dependent variables were the number of ODRs and teacher ratings on the DBRCs. For each participant, the DBRC included three behavioral goals, which were rated on a scale from 0 to 2, with zero indicating the student failed to meet the behavioral expectation and a 2 indicating the expectation was met.

When CICO was implemented, Harpole (2010) found that mean teacher ratings of appropriate behavior increased for all participants. Mean teacher ratings ranged from 33% to 72% during baseline. Following implementation of CICO, the average teacher ratings for participants increased, ranging from 75% to 91%. ODR data were also presented as a measure of disruptive behavior. During baseline, students received between 0.80 ODRs per month and 2.19 ODRs per month. During CICO, two participants did not receive any ODRs, and the third participant received only one, or 0.88 ODRs per month. The results of this study indicate that CICO may be effective in
increasing appropriate behavior and decreasing disruptive behavior as measured through teacher ratings and ODRs.

Although Harpole found CICO to be effective, there was a reliance on teacher ratings as the only measure of appropriate student behavior. Direct observations would have provided a more objective measure of appropriate behavior. Additionally, ODRs may be unreliable measures of behavior as teachers are not always consistent in terms of what behaviors warrant an ODR and whether a student is actually sent to the office for problem behaviors. Direct observations may also provide a more accurate measure of disruptive behaviors exhibited by students on a daily basis.

Daily Behavior Report Card

The DBRC is a Tier 2 intervention in which teachers rate specific student behaviors and provide the student with feedback at regular intervals throughout the school day. Any procedure by which a specific behavior is rated daily, and the information collected is shared with another individual is considered a DBRC (Chafouleas, McDougal, Riley-Tillman, Panahon, & Hilt, 2005; Chafouleas et al., 2002; Riley-Tillman, Chafouleas & Briesch, 2007). There are no exact criteria for DBRCs; however, common features include the identification of specific behaviors to be monitored, frequent behavioral ratings, the sharing of data across individuals, and the use of data for intervention or behavioral monitoring purposes. DBRCs can be used to monitor a wide range of behaviors and can be modified to use a variety of behavior rating procedures (Chafouleas et al.). DBRCs can function as progress monitoring tools or they can function as an intervention by themselves (Chafouleas, Riley-Tillman, Sassu, LaFrance, & Pawta, 2007).
When collecting behavioral data, direct observation is the most widely accepted form of data collection; however, DBRCs have been found to result in similar estimates of behavior occurrence (Chafouleas et al, 2007; Riley-Tillman et al., 2007). In a study conducted by Chafouleas and colleagues, data for on-task behavior collected from DBRCs were compared to direct observations. The participants were three teacher-student dyads in an elementary school setting. The teachers were randomly selected for participation, and each selected a student they identified as having trouble remaining on-task. A trained observer met with each teacher prior to implementation of the DBRC to review the definition of on-task behavior and the use of the DBRC. The DBRC used a 6-point Likert scale (from 0-5) with each point on the scale being explained by a descriptor ranging from “Never on-task” to “Majority,” and a percentage ranging from 0% to 81%-100%. Following baseline, one of the researchers implemented an intervention package consisting of performance feedback and praise. The researcher met with each child to review the DBRC point data and provide praise for some aspect of behavior during the observation. Each teacher was provided with a script on how to carry out the intervention. The teacher was instructed to indicate the rating that “best described” the student’s behavior following each observation period. The teacher and one observer recorded on-task behavior using DBRCs, while a second observer conducted behavioral observations of on-task behavior (Chafouleas et al.) using a 20 s interval, momentary time sampling procedure.

Chafouleas and colleagues (2007) found direct observation data and DBRC ratings to indicate similar levels of on-task behavior. Effect sizes were calculated, which indicated DBRC ratings obtained from teachers and independent observers, as well as
data from direct observations, lead to similar ratings of behavior. The results indicated that DBRCs may be comparable to direct observations as measures of classroom behavior (Chafouleas et al.).

In a 2006 study, Chafouleas, Riley-Tillman, and Sassu surveyed teachers on their use and acceptability of the DBRC. The participants were 123 teachers randomly selected from a national database. The DBRC was defined, and teachers were asked to report information regarding their use of the DBRC. The DBRC was defined as “briefly rating student behavior and then sharing that information with another person,” and also as “a tool to monitor student behavior and/or to be used as an intervention to change student behavior” (Chafouleas et al.). Teachers reported using DBRCs to decrease negative behaviors and identify positive behaviors. However, those who reported using DBRCs focused on negative behavior found the intervention less acceptable than those who reportedly used DBRCs to highlight positive behaviors. When a child exhibited good behavior, teachers noted they were most likely to provide encouragement in the form of verbal praise and access to tangibles. Teachers also reported they found DBRCs highly acceptable when they completed the forms themselves, but much less acceptable when others (e.g., school psychology graduate students) completed the forms (Chafouleas et al.).

In another study, Riley-Tillman, Chafouleas, Briesch, and Eckert (2008) surveyed members of the National Association of School Psychologists (NASP) about their training, use, and the acceptability of DBRCs and direct observation. Two studies were conducted, with 92 school psychologists participating in Study 1 and 99 participating in Study 2. The demographics of participants in both studies were similar, with the majority
of participants being female (76.1% and 74.7%), holding a master’s plus 30 hours (48.9% and 41.4%), and working in public school settings (83.7% and 88.9%).

Riley-Tillman and colleagues (2008) found the majority of participants had moderate levels of training on DBRCs (41.3% and 46.5%), though a few reported intensive training with DBRCs (16.3% and 9%). Participants reported higher levels of training in direct observation with moderate training being most common (51.1% and 51.5%), but many reporting intensive training (27.2% and 23.2%). Riley-Tillman and colleagues also found training level and use of DBRCs and direct observation to be significantly correlated ($r = .55$ in both studies), indicating that increases in level of training were associated with higher levels of use of both DBRCs and direct observation. Both methods of data collection were rated as moderately acceptable and not intrusive.
The participants were also given contrived intervention scenarios paired with outcome data in the form of DBRCs or direct observations. They were asked to select an appropriate course of action from a multiple-choice list. Chi-square analyses indicated there were no statistically significant differences in decision-making when data were presented as DBRCs rather than direct observations. As direct observation has been established as an acceptable and widely used form of data collection, the use of DBRCs is supported by the similarity in decisions made using either method of data collection. Another promising finding was the correlation between training and use of DBRCs, which indicates that training teachers to use DBRCs may increase the rate of use (Riley-Tillman et al.).
School-Home Notes

The school-home note intervention, a precursor to CICO, involves teachers rating student behavior daily, the student bringing the school-home note home, and the parent or guardian providing consequences based on the behavioral ratings (Jurbergs, Palcic, & Kelley, 2007). School-home notes can be used to address both academic and behavioral concerns in students with a wide range of presenting problems (Jurbergs et al.; McGoey et al., 2007). School-home notes are designed to increase communication between teachers and parents and can be used as a monitoring tool or as part of a behavioral intervention with contingencies (Jurbergs et al.).

School-home notes have been found to be effective for a wide range of problem behaviors. Schumaker, Hovell, and Sherman (1977), investigated the effectiveness of school-home notes with and without home contingencies. Three experiments were conducted, the first to determine the effectiveness of school-home notes with home-based contingencies and the second to determine if the contingencies were necessary, and the third to determine if school personnel could implement the school-home note intervention without support if provided with a manual for implementation.

The participants in the first study were three male high school students nominated by faculty members for exhibiting disruptive behaviors in the classroom, frequent tardiness, occasional truancy, and completing few or no class assignments. A multiple baseline across participants design was used to evaluate the effectiveness of the school-home note procedure. On the school-home note, there was a rules section with 10 expected behaviors, a classwork section, and a teacher satisfaction section. In the rules section, there was a box teachers could check “Yes” or “No” indicating if the child had
exhibited the expected behavior; in the classwork section, teachers indicated how much work the student had completed by giving him a rating of 0 to 4, with zero indicating the student did not participate in classwork and 4 indicating the student was attentive or working on assignments for all of class time; and in the teacher satisfaction section, teachers could check “Yes” or “No” indicating whether or not they were satisfied with the student’s behavior for the day. Students could earn 2 points for each class, for a total of 12 possible points, by having “Yes” checked for all rules during that period. Only one point was earned if one rule was broken, and no points were earned if two or more were broken. If the student met his pre-determined goal, his parents allowed him access to privileges agreed upon prior to implementation of school-home notes. In the second study, a reversal design was used to evaluate the effects of school-home notes with and without home-based feedback for two male participants, Fred and Ron, who were similar to the three participants in the first study and exhibited the same problem behaviors. All school-home note procedures in the second study were the same, except there was no contingency available at home. In the third study, the participants included two high school students, Ed and Cindy, who exhibited similar problem behaviors to the students included in the other studies. A manual was created for teachers and parents outlining how to implement school-home notes.

When school-home notes were implemented with home-based contingencies, the students exhibited increases in the percentage of rules followed per day. Though no percentages were reported, visual analysis indicated that marked increases in the average percentage of rules followed occurred for all students from baseline to intervention. In study 2, Fred’s average percentage of rules followed increased from 59% in baseline to
93% in the with contingency condition and decreased to 80% in the without contingency condition for Fred, with percentage of work completed increasing from 39% in baseline to 64% in the with contingency condition and decreasing to 44% in the without contingency condition. No percentages were reported for Ron, however visual analysis indicated that school-home notes without contingencies increased the percentages of rules followed and work completed above baseline levels. For study 3, no percentages were reported, but visual analysis indicated marked increases in the percentages of rules followed for both participants. The results of these studies support the use of school-home notes for decreasing problem behaviors and increasing academic engagement for high-school students.

School-home notes have been implemented with a variety of populations as a method for managing problem behaviors. McGoey and colleagues (2007) studied the effectiveness of school-home notes in reducing disruptive classroom behaviors displayed by two boys in kindergarten. The boys, Nathan and Craig, were selected for participation due to hyperactive, impulsive, inattentive, and aggressive behaviors. One teacher and a teacher’s assistant also participated in the study. An ABAB design was used to evaluate the effectiveness of the school-home note. Observations were 20 mins in length and were conducted by independent observers at various times throughout the day using 15 s partial interval recording. On the school-home note, the child’s behavior was rated with a frown, neutral, or smiley face for each behavioral goal. At the end of the day, the number of smiley faces was tallied. If a child met their pre-determined goal, he/she received a reward at home.
When the DBRC was implemented, McGoey and colleagues (2007) found both children exhibited decreased levels of problem behavior. Disruptive behavior occurred in an average of 32.63 intervals for Craig, and 19.78 intervals for Nathan during baseline. When the school-home note intervention was implemented, the mean number of intervals with problem behavior decreased to 6.75 and 8.75 intervals for Craig and Nathan, respectively. When treatment was withdrawn, disruptive behavior increased to an average of 25.33 intervals for Craig and 18.17 intervals for Nathan. When school-home notes were re-implemented, Craig’s problem behavior decreased to a mean of 2.50 intervals, and Nathan’s decreased to an average of 6 intervals. McGoey and colleagues demonstrated school-home notes can effectively reduce problematic classroom behaviors. The results of this study support the use of school-home notes as an intervention technique for preschool children exhibiting disruptive classroom behavior.

Jurbergs and colleagues (2007) compared the effectiveness of school-home notes with and without response cost on increasing on-task behavior and academic productivity of six African-American elementary school students with ADHD. The participants were selected for participation due to teacher referral for problem behavior, average scores on the Woodcock-Johnson Test of Achievement, Third Edition (WJA-III), membership in an ethnic minority group, and attendance at an urban elementary school serving primarily low-income students. Two teachers also participated in the study. To evaluate the effects of school home notes, Jurbergs and colleagues (2007) used a withdrawal design with alternating treatments. Observations were 30 mins in length and were conducted by independent observers during morning independent seatwork activities using 15 s partial interval recording. Academic productivity was determined by calculating the percentage
of work attempted and the percentage of work completed from the students’ “Daily Oral Language Journals,” in which the students completed their morning work. During the without response cost condition the school-home note, the students’ behavior was rated as “Yes,” which was worth two points; “So-so,” which was worth one point; or “No,” which was worth zero points, for each behavioral goal. The school-home note was brought home daily, where the student’s parents would add up the points and provide the student with a reward if their predetermined goal was met. During the with response cost condition, the note was the same, with the addition of five smiley faces, which teachers had the students cross off for each instance of off-task or disruptive behavior. Students earned points for each smiley face remaining at the end of the day.

When school-home notes were implemented, increases in on-task behavior were noted for all students in both the with response cost and without response cost conditions. The average percentage of intervals with on-task behavior increased from 39.5% in baseline to 83% in the school-home notes without response cost condition and 82.6% in the school-home notes with response cost condition. During the withdrawal phase, on-task behavior decreased to a mean of 44%, and increased again when treatment was reimplemented to 88.3% in the school-home note without response cost condition and 86.5% in the home-school notes with response cost condition. The results indicated that school-home notes with and without response cost result in similar levels of on-task behavior. Academic productivity increased during intervention from a mean percent completed of 60.3% with 44.8% completed correctly in baseline to an average percent completed of 98.2% with 90% completed correctly. When school-home notes were withdrawn, the average percentage of assignments completed decreased to 89.8% with
75.8% correct. When school-home notes were reimplemented, the percentage of assignments completed increased to a mean of 99% with 96.7% correct. Jurbergs and colleagues (2007) demonstrated that school-home notes can increase both student on-task behavior and academic productivity. The results of this study support the use of school-home notes with elementary school students exhibiting off-task behavior and having trouble completing schoolwork.

Though school-home notes typically involve parent-delivered consequences, the intervention can also be effective with teacher-delivered consequences. Palcic, Jurbergs, and Kelley (2009) compared the effects of school-home notes with parent-delivered consequences to school-home notes with teacher-delivered consequences. The participants were 43 elementary school students chosen due to teacher nomination for disruptive behavior, meeting diagnostic criteria for ADHD, engaging in off-task behavior for at least 40% of intervals during 3 baseline observations, average scores on the WJA-III, and attendance at an urban elementary school serving primarily low-income families. Nineteen teachers also participated in the study. A between groups design was used to evaluate the effectiveness of the school-home note interventions. Observations were 30 mins in length and were conducted during morning independent work using 15 s partial interval recording. On the school-home note, the child’s behavior was rated as “Yes,” which was worth two points; “So-so,” which was worth one point; or “No,” which was worth zero points, for each target behavior. Additionally, the school-home note included a response cost element with five “smiley” faces, one of which was crossed off each time the student was reprimanded for being off-task or engaging in problem behavior. Any smiley faces that were left at the end of the day earned the student extra points toward
their overall goal for the day. Depending on which condition the students were assigned to, the predetermined contingencies were provided by either the teacher or parents at the end of the day.

When school-home notes were implemented, Palcic and colleagues (2009) found that the average percentages of intervals with on-task behavior increased for both the teacher-delivered consequence group and the parent-delivered consequence group. For the parent-delivered consequence group, the mean percentage of intervals with on-task behavior increased from 35.36% in baseline to 86.56% when school-home notes were implemented. Additionally, the percentage of work completed increased from 80.10% to 94.36% and the percentage of work correct increased from 56.81% to 83.12% for the parent-delivered consequence group. For the teacher-delivered consequence group, the percentage of intervals with on-task behavior increased from 39.97% in baseline to 81.54% during intervention. The percentage of schoolwork completed increased from 70.33% to 93.56% for the teacher-delivered consequence group with the percentage of work completed correctly increasing from 48.72% to 85.96%. Independent samples t tests found that there was no significant difference in on-task between the parent-consequence group and the teacher consequence group, \( t(18.43) = 1.31, \) ns. The results of this study indicate that teacher-delivered consequences from DBRCs are equally as effective as parent-delivered consequences.

Rationale and Purpose of the Study

Though CICO may be effective for decreasing problem behaviors, the literature base on CICO is limited. Furthermore, there are few studies investigating the effectiveness of CICO with elementary school students. Although Hawken and
colleagues (2007) attempted to determine the effects of CICO on disruptive behavior, their primary measure was ODRs. Many of the CICO studies have used ODRs as the primary measure of disruptive behavior; however, there are some major threats to the reliability of ODRs as a measure of problem behavior (Peacock et al., 2010). Direct observations have been established as a standard for behavioral measurement (Chafouleas et al., 2007) and may provide a more accurate picture of the levels of problem behavior exhibited by students participating in CICO.

Few studies have measured the effects of CICO on alternative behaviors, such as academic engagement. Although reduction of problem behaviors is important, appropriate behaviors should increase, demonstrating the student is meeting classroom expectations to a greater extent. Additionally, point data from DBRCs should indicate similar levels of academic engagement and disruptive behavior as direct observation. As both DBRCs and direct observations are measures of behavior, convergence between methods would be expected.

The purpose of this study was to extend the literature by investigating the effectiveness of CICO on reducing problem behaviors and increasing academic engagement in elementary school students. The primary measure of problem behaviors and academic engagement was direct observation. Secondary measures of disruptive behaviors and academic engagement included DBRC point data and ODRs. Treatment and procedural fidelity were measured, as were acceptability of CICO.
Research Questions

The following research questions were addressed in this study:

1. Does CICO produce decreases in problem behavior as evidenced by direct observations?

2. Does CICO produce increases in academic engagement as evidenced by direct observation and DBRCs?

Is there convergence between direct-observation data and DBRCs?
CHAPTER II

METHODS

Participants and Setting

The study was conducted in two elementary schools in the southeast United States that had successfully implemented a SWPBIS system for at least one year. School A was located in a rural community and served 221 students in grades kindergarten through 8. The student population of School A was 92% African American, 5% White, and 4% Hispanic. Approximately 99% of the students received free or reduced price lunch. School B was located in a medium-sized city and served 183 students in grades kindergarten through 6. The student population of School B was 60% African American, 38% White, 2% Hispanic, and 1% Asian. Approximately 85% of the students received free or reduced price lunch. To determine if SWPBIS has been successfully implemented and all students had access to universal interventions, SWPBIS implementation had been recently assessed with the School-Wide Evaluation Tool (SET; Sugai, Lewis-Palmer, Todd, & Horner, 2001), by independent observers who received training in conducting the SET prior to the assessment and obtained interobserver agreement above 80% on the instrument. Schools A and B achieved scores of 98.2% and 91.1% respectively, on the general index of the SET (Todd et al., 2005).

The participants were three elementary school students who exhibited disruptive behavior despite exposure to universal SWPBIS procedures (i.e., Tier I). Students were selected for participation because they met the following criteria: (a) nominated by a school administrator for frequent office referrals for problem behavior, (b) teacher verification of problem behavior in the classroom, (c) the problem behavior did not cause
physical harm to the student or others, (d) informed consent of the student’s parents or legal guardian was obtained (Appendix A), (e) and the student’s teachers and mentor also gave informed consent (Appendix B). No potential participants were screened out using the set criteria. Approval was obtained from the Institutional Review Board prior to the start of this study (Appendix C).

Connor

Connor was an African American male in fourth grade at School B. Connor had not received any previous diagnoses or special education rulings. He was nominated for participation by the school principal due to a high number of ODRs by School B’s standards. Connor had received three referrals prior to the study, all for repeated minor behavior. His teachers reported he was often out of seat, talking out, and off-task.

Oliver

Oliver was an African American male in second grade at School A. Oliver had not received any previous diagnoses or special education rulings. He was nominated by the school principal due to a high number of ODRs by School A’s standards. Oliver had received three referrals prior to the study, all for repeated minor behavior. His teachers reported he often was out of seat, talking out, and off-task.

Susan

Susan was an African American female in sixth grade at School A. Susan was receiving special education services for a specific learning disability in reading. The school principal nominated her for participation due to frequent ODRs. Susan had received six ODRs prior to the study, for repeated minor behaviors, verbal disrespect, and
instigating fights. Her teachers reported that she was often off-task, out of seat, and engaging in negative interactions with peers.

For each student, a school faculty member who had agreed to participate was selected to serve as the CICO mentor. Each student was asked to identify three school staff members they would like to serve as a CICO mentor. For each student, one of the selected individuals was chosen to participate in the study. To be chosen, the staff member had to be available to implement morning and afternoon CICO sessions and be willing to participate in the study. Connor’s CICO mentor was his homeroom teacher, who held a master’s degree in education and taught for 15 years. Oliver’s CICO mentor was his reading teacher, who also held a master’s degree in education and taught for 8 years. Susan’s CICO mentor was her special education teacher, who held a master’s degree in special education and taught for 11 years. Consent was obtained from these teachers as well as all of the students’ other teachers (see Appendix B). A second individual chosen from the list of staff members provided by each student was selected to serve as the alternative mentor, responsible for conducting check-ins and check-outs if the primary mentor was absent. Consent was obtained from all alternate mentors as well (see Appendix A).

The CICO staff members were responsible for implementing morning “check ins” and afternoon “check outs” for their assigned student. As part of their duties, the CICO staff members were responsible for the following tasks each morning: (a) reviewing daily point goals with their assigned student, (b) discussing strategies to help the student achieve their goal for the day, (c) reviewing the reinforcers the student had the opportunity to earn that day if their point goal was met, and (d) providing the student
with a new DBRC for the day. At the end of each day, the CICO staff members were responsible for tallying the students’ earned points for the day and providing feedback and access to reinforcers based on whether the point goals were reached. The CICO staff member also consulted with the primary researcher to determine changes in point goal.

Dependent Measures

The primary dependent variable was percentage of intervals in which problem behavior was exhibited. For each participant, problem behaviors were identified during a teacher interview using the Functional Assessment Informant Record for Teachers (FAIR-T). The primary dependent variable, problem behavior, was an aggregate of the behaviors identified during the teacher interview. Direct observations of each student were conducted to verify the teachers’ report of problem behavior occurrence throughout the day.

Connor’s problem behaviors were off-task, talking out, and being out of seat. Off-task was defined as failure to attend to the teacher during instruction or attend to assigned activities when instructed to do so for at least three seconds. Talking out was defined as vocalizing without teacher permission or any vocalization that was irrelevant to the assigned task. Out of seat was defined as the students’ buttocks leaving the seat for at least three consecutive seconds. Oliver’s problem behaviors were also off-task, talking out, and out of seat, and definitions were identical. Susan’s problem behaviors were off-task, out of seat, and negative peer interactions. Definitions for off-task and out of seat were identical to those used for Connor and Oliver. Negative peer interactions were defined as making negative comments to or about a peer, laughing at a peer, or inappropriately touching a peer. For each student, alternative behaviors were selected for
use on the DBRC. Connor and Oliver’s replacement behaviors were remain on-task and complete all assignments, raise hand and be called on before speaking, and remain in seat. Susan’s alternative behaviors were remain on-task and complete all assignments, remain in seat, and engage in positive interactions with peers.

Academic engagement was defined in terms similar to those used by Hawkins and Horner (2003). A student was marked as exhibiting academic engagement if they were engaged in any of the following behaviors: (a) looking at the teacher during instruction, (b) working with a peer when instructed to do so, (c) reading silently or writing to complete assignments when instructed to do so, (d) participating in a teacher-approved activity following the completion of work, or (e) talking with the teacher about academic work.

Problem behavior and academic engagement were evaluated using 10 s partial interval observations, which were 20 mins in length and occurred in the academic period identified as most problematic. As a secondary measure of academic engagement, the percentages of points earned on the students’ DBRCs throughout the day were calculated. The frequency of ODRs was also determined as an adjunct measure of problem behavior.

Materials

*Functional Assessment Informant Record for Teachers (FAIR-T)*

The FAIR-T (Appendix D) was used to determine the problem behaviors each student exhibited and the settings in which they were most likely to occur. The FAIR-T is an instrument used to identify problem behaviors and corresponding environmental events (Doggett, Edwards, Moore, Tingstrom, & Wilczynski, 2001). All teachers of each participating student were interviewed using the FAIR-T. The FAIR-T has been shown
to have convergent validity with other functional assessment techniques (e.g., brief functional analysis, direct-descriptive assessment) and has been used for a variety of behaviors (e.g., off-task, out-of-seat, inappropriate vocalizations, inappropriate engagement) (Doggett et al., 2001; Doggett, Mueller, & Moore, 2002).

Daily Behavior Report Card

Throughout the day, a DBRC was used for providing the students with ratings of their behavior (Appendix F). The DBRC included the three alternative behaviors the student was expected to engage in. Each alternative behavior was paired with a school expectation from the SWPBIS plan and included descriptions of the expected behavior corresponding (e.g., “remain in-seat” listed under “Be Safe,” “raise hand and be called on before speaking” under “Be Respectful,” and “remain on-task and complete assignments” under “Be Responsible”). The DBRC also included a point system for the teacher to use when rating student behavior during each period similar to that used by Chafouleas and colleagues (2007). Behaviors were rated on a 5-point Likert scale with descriptors for each rating (e.g., 0 = behavior not observed, 1 = occasionally, 2 = some, 3 = approximately half, 4 = most, and 5 = majority). Additionally, each point and descriptor was matched to a range of percentages (0 = 0%, 1 = 1-20%, 2 = 21-40%, 3 = 41-60%, 4 = 61-80%, and 5 = 81-100%).

CICO Treatment Integrity Checklist

CICO treatment integrity was measured in a manner adapted from Hawken, MacLeod, and Rawlings (2007). The items on the CICO Treatment Integrity Checklist (Appendix G) included (a) checked in with the student, (b) collected signed copy of DBRC from the previous day, (c) provided corrective feedback for problem behaviors,
(d) praised appropriate behavior, (e) teachers provided ratings of behavior throughout the day, (f) student attended check out at the end of the school day, (g) CICO staff member accurately tallied points, and (h) student was allowed access to reinforcers when criterion were met.

**CICO Procedural Integrity Checklist/Training Script**

Procedural integrity data were collected during the initial training sessions using a CICO Procedural Integrity Checklist/Training Script (Appendix H). During the training, a second graduate student was present who had a copy of the checklist, which included all steps of the training in script form. As the items are covered, the graduate student indicated on the form that the steps were completed.

**CICO Student Record Form**

For each student, the assigned CICO staff member completed a CICO Student Record Form (Appendix I) each day to summarize the student’s data. The CICO Student Record Form was adapted from one provided by Crone, Horner, and Hawken (2004), who suggested the record form as a method for summarizing weekly data. CICO Student Record forms were also collected as permanent product measures of treatment integrity (Hawken et al., 2007; Hawken & Horner, 2003). The CICO Student Record Form included blanks for the student’s name and the mentor’s name, as well as a chart on which the mentor indicated the date and if the following events occurred: (a) student had materials for the day, (b) student returned signed DBRC from the following day, (c) mentor reviewed the daily goals with the student, (d) student attended check out, and (e) a copy of the DBRC was retained. A column was also included in which the mentor
wrote the percentage of points earned each day. This form served to consolidate point data for decision-making.

*Intervention Rating Profile 15 (IRP-15)*

Treatment acceptability of CICO was assessed using a modified version of the IRP-15 (Martens, Witt, Elliott, and Devareaux, 1985). Modification to the original instrument included changing future tense items to past tense. Previous research (Patwa, Chafouleas, & Madaus, 2005) indicates that psychometric properties of the instrument are not adversely impacted by the modification. The IRP-15 consists of 15 statements related to various aspects of treatment acceptability. All items are measured on a 6-point Likert scale used to indicate agreement or disagreement with the statements. Scores on the IRP-15 range from 15 to 90 with higher scores indicating greater acceptability. Scores of 52.5 or higher are generally considered to reflect acceptability (Mueller, Edwards, & Trahant, 2003). A Cronbach’s alpha of .98 has been found for the IRP-15, indicating a high degree of internal consistency (Martens, Witt, Elliott, & Devereaux, 1985). Additionally, a principal components factor analysis revealed primary loading on one factor with ratings ranging from 0.82 to 0.95, indicating high construct validity.

**Design**

An ABAB withdrawal design with a fading procedure was used to evaluate the effects of the CICO intervention on the levels of problem behavior and academic engagement as well as percentage of points obtained on DBRCs. The fading procedure included a Mystery Motivator component and a self-monitoring component (Rhode, Jenson, & Reavis, 1994). A withdrawal design was chosen because it allows for demonstration of a functional relationship between the intervention and changes in
behavior. The treatment phases occurred in the following order: Baseline (A), CICO (B), Withdrawal (A), CICO (B), Mystery Motivator, and Self-Monitoring. To determine phase changes, level, trend, and stability of problem behavior data from direct observations were evaluated.

Procedure

At the beginning of the study, all teachers, staff members, and parents of students participating in the study provided informed consent. Additionally, before the beginning of the study the primary researcher met individually with all participating teachers to conduct the FAIR-T interview. The FAIR-T was conducted during each teacher’s planning period in an empty classroom. The FAIR-T was used in a semi-structured interview format, and data gathered from the FAIR-Ts was used to determine the target behaviors for CICO and the best times for behavioral observation of each student. FAIR-T interviews lasted approximately 30 minutes per teacher.

Teacher and Staff Training

Prior to the initiation of CICO, all participating teachers and staff members were trained on the implementation of the CICO intervention using the Procedural Integrity Checklist/Training Script. For check-ins, the staff members were trained to (a) greet the student and engage in rapport-building behaviors (e.g., initiation of pro-social interaction); (b) ask if the student possessed the materials needed for the day; (c) collect the DBRC from the previous day; (d) praise the student if they came prepared; (e) provide a new DBRC; (f) review the point goal for the day, providing encouragement and praise; and (g) complete the CICO Student Record Form. On the CICO Student Record Form staff members were taught to record the student’s name, the date, if the student had
their materials, if they turned in the previous day’s DBRC, and if the daily goals were reviewed with the student. Following training on check-ins, staff members were given the opportunity to practice a typical check-in and ask questions. Feedback was provided on any errors made during the practice sessions. Also, the primary researcher was present the first two days of intervention to monitor CICO implementation and provide feedback. The primary researcher prompted the mentor to complete any treatment steps that were missed to ensure 100% integrity during those sessions.

Using the Procedural Integrity Checklist/Training Script, CICO staff members were also trained on how to conduct check-outs. The staff members were taught to (a) collect the DBRC, praising the student for any appropriate behavior they displayed that day; (b) provide constructive feedback on any areas in which behavior needs improvement, phrasing feedback in a positive manner; (c) calculate percentage of points earned by adding up the total number of points earned, dividing by the number of points possible, and multiplying by 100; (d) determine if the point goal had been met using the percentage of points earned; (e) allow student to choose a reward if point goal had been met; (f) make a copy of the DBRC for the student to bring home for a parent to sign; and (g) note on the Student Record Form that the DBRC was sent home. Following training on check-out, CICO staff members were given the opportunity to practice conducting a typical check-out, receive feedback, and ask any questions. The primary investigator was present the first two days of intervention to monitor CICO implementation and provide feedback if needed.

The Procedural Integrity Checklist/Training Script was also used to train teachers on how to rate behaviors throughout the day. Teachers were trained to (a) collect the
DBRC at the beginning of the class period, prompting the student for the card if they did not immediately present it; (b) use the DBRC to rate the student’s behavior at the end of the period; (c) meet with the student to review the points earned and provide feedback on their behavior in that class period; and (d) return the DBRC to the student. Additionally, all expected behaviors were clearly explained and a handout with operational definitions and examples of all problem behaviors was provided to the teachers for their reference. Following the training, teachers were given the opportunity to practice conducting a check-in, receive feedback, and ask any questions that may arise. Additionally, the primary investigator was present the first two days of intervention to monitor implementation of CICO and provide feedback if needed.

Baseline

During the baseline phase, evaluation of all dependent measures occurred without implementation of CICO or the students’ knowledge that he or she was being observed or rated by teachers. Direct observations of classroom behavior were conducted daily during the period identified as most problematic during the FAIR-T interview and teachers rated students’ behavior on the DBRC throughout the day. For Connor and Oliver, the identified period was Reading, which was first period for Connor and second period for Oliver. For Susan, the identified period was Science/Social Studies, which was the fifth class period of the day. Problem and replacement behaviors were measured by partial interval recording and are reported as the percentage of intervals in which the behaviors occurred. Direct observation recording of problem behavior served as the primary dependent measure for phase change decisions. Once a stable or increasing trend was seen in problem behaviors, the mean percentage of points earned for the last three
days of baseline was calculated. When CICO was implemented, the point goal was set at the mean percentage of points earned.

*CICO*

The CICO intervention began when a stable or increasing trend was observed in baseline levels of problem behavior. During the CICO phase, problem behavior and academic engagement were measured in the same manner as during baseline.

*Student preference assessment*

A reward menu was developed by first asking the students to identify possible reinforcers using open-ended questions (e.g., “What kind of things or items at school and home time do you like?”) (Cooper, Heron, Heward, 2007; Hishinuma, 2005). If a student had trouble identifying items, the researcher verbally presented him or her with multiple items and activities, and asked the student to identify if those rewards were acceptable for the menu. From the items identified, a pool of reinforcers was created for the students to choose from contingent on earning the point goals (Cooper et al.; Hishinuma). The menus included at least 10 items and activities to minimize the likelihood of students satiating on rewards. For Connor, the rewards selected were matchbox cars, mechanical pencils, silly bands, superhero stickers, fun-sized snickers, fun-sized M&Ms, pizza Pringles sticks, 10 min playing an educational computer game, erasers, and car-themed pencils. For Oliver, the rewards selected were goldfish crackers, fruit roll-ups, cheese and crackers, pretzels, Gushers, mechanical pencils, erasers, toy cars, stickers, 5 min free time, 5 min extra computer time. For Susan, the chosen reinforcers were brownies, Coca-Cola, hot chips, fun-sized Hershey bars, mechanical pencils, small notebooks, lip glosses, eye shadows, hair clips, and fashion jewelry.
Check in. Each morning, the students checked in with their assigned CICO mentor. At each check in the CICO mentor (a) greeted the student and collected the copy of the DBRC from the previous day; (b) checked to see if a parent or guardian had signed the DBRC; (c) praised the student for returning a signed copy of the DBRC if appropriate; (d) asked if the student had their materials for class; (e) reviewed point goals and the student’s performance from the previous day; (f) provided encouragement and suggestions on how to meet the day’s goal; (g) provided the student with a new DBRC; (h) rated the student on their behavior and preparedness during check in; and (i) recorded the day of the week, if the student was present at check in, if the previous DBRC was signed, and the point goal for the day on the CICO Student Record Form.

Teacher use of DBRC and behavioral feedback. At the beginning of each class, the students were to present their teacher with the DBRC. If the student did not present the card, the teacher was instructed to prompt the student for the DBRC. The teacher briefly reviewed the point goal for the day and provided encouragement. Prior to intervention, the primary researcher and each student’s teachers determined transition periods in the school day for DBRC ratings to occur. At these specified times, the teacher rated the student’s behavior for the preceding time period. The students were rated on the three target behaviors related to academic engagement with scores between 0 and 5 (i.e. 0 points indicating the behavior never occurred, 1 point indicating the behavior occurred between 0% and 20% of the time, 2 points indicating the behavior occurred 20% to 40% of the time, 3 indicating the behavior occurred 40% to 60% of the time, 4 indicating the behavior occurred 60% to 80% of the time, and 5 indicating the behavior occurred 80% to 100% of the time). Finally, at the end of the designated period, the
teacher provided the student with feedback regarding his or her performance during that period.

*Check out.* At the end of each day, the student reported to the CICO mentor for check out. At this time, the CICO mentor collected the student’s DBRC, calculated the total number of points earned, and recorded the total points earned on the DBRC. After determining if the student had met their point goal for the day, the CICO mentor reviewed the target behaviors and provided corrective feedback or praise as appropriate. If the student met their point goal for the day, they were allowed to pick one item or activity from their reward menu.

*Withdrawal*

During the withdrawal phase, data collection occurred in a manner similar to baseline. During this phase, the student was told he or she no longer needed to carry the DBRC or check in with the CICO mentor or teachers. The students did not receive feedback for their behavior or have a chance to earn reinforcers. Additionally, the student participants’ teachers were told to complete the DBRC without the students’ knowledge until further notice. Finally, observation procedures were conducted in the manner that had been previously used during baseline and the initial B phase.

*Return to Intervention*

When a stable or increasing trend in problem behavior was observed in the withdrawal phase, CICO was reimplemented. During this phase, intervention was conducted in the same manner as in the initial B phase. Data collection procedures were also the same as in the initial B phase.
Fading

When a stable or increasing trend in problem behavior was observed in the return to intervention phase, a Mystery Motivator component was added as a fading procedure (Rhode et al., 1994). At check out, the CICO mentors presented the student with the mystery envelope, which contained slips of paper marked with an “M,” indicating they would receive a reward, or an “X,” indicating no reward was available that day. Mentors were instructed to make reinforcement available three of five days per week (i.e., for three of five days the slip of paper in the mystery envelop was marked “M”). During fading, observations occurred twice per week, typically on Mondays and Thursdays for Chris and Oliver, and Mondays and Fridays for Susan.

Procedural and Treatment Integrity

Procedural integrity data were collected during the initial training sessions to ensure accurate training of CICO using the CICO Procedural Integrity Training Script. During the training sessions, a second observer was present to collect procedural integrity data. The observer monitored integrity by indicating if the primary researcher completed each step in the training procedure. The CICO Procedural Integrity Training Script included 29 steps outlined previously in the Teacher and Staff Training section. Procedural integrity was calculated by dividing the number of steps the researcher completed by the total number of steps, and multiplying by 100. For all training sessions, procedural integrity was 100%.

Treatment integrity was assessed using the Treatment Integrity Checklist (Appendix G), which was completed by the participants’ teachers and CICO mentors daily. Oliver’s teachers reported implementing CICO with 100% integrity across the
study. Connor’s teachers’ average percentage treatment integrity was 99.05% (range = 93.33% - 100%). On seven days, Connor’s CICO mentor reported that he did not return the previous day’s DBRC, which accounts for the reduction in treatment integrity scores. For Susan, the average percentage treatment integrity was 98.06% (range = 63.16% - 100%). Susan’s CICO mentor reported that she did not conduct check out on two days, which accounts for the reduction in integrity scores.

Treatment integrity was also monitored by the primary investigator using the Treatment Integrity Checklist for between 26% and 39% of all check ins and check outs across participants. During all observations for Oliver and Susan, treatment integrity was observed to be 100%. For Connor, average treatment integrity recorded for check ins was 96.09% (range = 75% - 100%), while treatment integrity for check outs was 100% during all observations.

As a second measure of treatment integrity, permanent product data were collected in the forms of the completed DBRCs and CICO Student Record Form. Permanent product data were used to assess the central elements of CICO. These elements were (a) check in, (b) daily use of DBRC, (c) teacher ratings of behavior, (d) check-out, and (e) parent signature. The average levels of treatment integrity for central elements were 96.13% (range = 80% - 100%), 93.08% (range = 80% - 100%), and 87.16% (range = 60% - 100%), for Connor, Oliver, and Susan, respectively. For all participants, permanent product data indicated that the central elements were implemented consistently with the exception of parent signature on returned DBRCs.
**Interobserver Agreement (IOA)**

A second observer independently collected data on problem behavior and academic engagement for between 25 and 66.67% of observations across phases for each participant. IOA was obtained for 66.67%, 40%, 50%, 42.85%, and 33.33% of baseline, intervention, withdrawal, return to intervention, and Mystery Motivator observations, respectively, for Connor. Mean IOA for observations of Connor’s problem and appropriate behavior was 91.25% (range = 87.50% - 98.33%). For observations of Oliver’s behavior, IOA was obtained for 40%, 40%, 42.86%, 41.67%, 50%, and 40% of baseline, intervention, withdrawal, return to intervention, Mystery Motivator, and self-monitoring sessions, respectively. Mean percentage IOA of Oliver’s behavior was 91.43% (range = 85.83% - 100%). Mean IOA for observations of Susan’s behavior was obtained for 42.86%, 42.86%, 25%, 40%, 50%, and 33.33% of baseline, intervention, withdrawal, return to intervention, Mystery Motivator, and return to intervention 2 observations, respectively. The mean percentage IOA obtained was 95.21% (range = 88.33% - 100%).

IOA data were also collected on treatment integrity evaluation for 50% of check in and check out observations for Connor, 50% of check in observations and 33.33% of check out observations for Oliver, and 50% of check in and checkout observations for Susan. For all sessions, IOA for treatment integrity was 100%.
CHAPTER III

RESULTS

Direct Observations of Behavior

Data from direct observations of student behavior are presented in Figure 1. During baseline, mean levels of problem behavior were 58.83% (range = 51.50% - 65%), 54.83% (range = 21.67% - 74.17%), and 45.24% (range = 5.83% - 69.17%) for Connor, Oliver, and Susan, respectively. Median levels of problem behavior during baseline were 60%, 59.17%, and 50.83% for Connor, Oliver, and Susan, respectively. On the last day of baseline, Susan received three days of in-school suspension for verbal disrespect toward the school librarian, which delayed the implementation of CICO.

During baseline, mean levels of academic engagement were 44.67% (range = 40% - 50%), 51.17% (range = 40% - 79.17%), and 61.55% (range = 44.17% - 88%), for Connor, Oliver, and Susan, respectively. Median levels of academic engagement were 44%, 42.50%, and 50.83%, for Connor, Oliver, and Susan, respectively.

When CICO was implemented, immediate decreases in problem behavior were evidenced for all three participants. During CICO, Connor exhibited problem behaviors with a mean level of 31% (range = 24.17% - 45.83%), with a median of 29.17%. Oliver’s mean level of problem behavior was 19.67% (range = 13.33% - 25.83%), with a median of 20.83%. During CICO, Susan’s mean level of problem behavior was 25% (range = 7.5% - 46.67%), with a median of 13.33%. Overall, participants’ problem behavior decreased in variability when CICO was implemented. On the third day of CICO, Connor’s problem behavior was elevated. On this day, students were taking an exam during the observation, which had been identified as a problematic time for Oliver.
Oliver’s behavior increased in stability during the initial intervention phase. When CICO was first implemented, Susan exhibited a delayed treatment effect, exhibiting an increasing trend in problem behavior over the first three days of intervention. However, on the fourth day of CICO, Susan exhibited a marked decrease in problem behavior that was maintained over the remainder of the phase. Intervention effects were seen immediately for Connor and Oliver. Also, the observation on the third day of Susan’s intervention phase was shorter than average due to an assembly.

When CICO was implemented, the average levels of academic engagement increased for all students. The average percentages of academic engagement during CICO were 72% (range = 57% - 77.50%), 85.33% (range = 78.33% - 90.83%), and 79.69% (range = 56.19% - 97.50%), for Connor, Oliver, and Susan, respectively. Median levels of academic engagement were 76.67%, 84.17%, and 88.13%, for Connor, Oliver, and Susan, respectively. When compared to baseline, there were increases of 27.33%, 34.17%, and 18.15%, for Connor, Oliver, and Susan, respectively. Overall, academic engagement decreased in variability during intervention.

When CICO was withdrawn, mean levels of problem behavior increased for all students. During withdrawal, mean levels of problem behavior were 43.33% (range = 14.17% - 54.17%), 43.57% (range = 14.17% - 70.83%), and 43.96% (range = 31.67% - 46.675) for Connor, Oliver, and Susan, respectively. During the withdrawal phase, Oliver’s data increased in variability. On the fourth day of withdrawal for Oliver, there was a shortened school day due to inclement weather. Although this did not affect the length of observation, the second grade classes were combined for the day as only five students were present, and the change in setting may have affected his behavior.
When intervention was withdrawn, decreases in the average levels of academic engagement were seen for all students. The average percentages of academic engagement during CICO were 57.92% (range = 46.67% - 85.83%), 59.50% (range = 32.50% - 85.83%), and 62.29% (range = 55.83% - 70.83%), for Connor, Oliver, and Susan, respectively. Median levels of academic engagement were 49.58%, 64.17%, and 61.25%, for Connor, Oliver, and Susan, respectively.

When intervention was reinstated, the average levels of problem behaviors for all participants decreased once again. Average levels of problem behavior during reinstatement were 18.69% (range = 11.67% - 22.50%), 30.49% (range = 5% - 70%), and 21.11% (range = 0.03% - 31.67%), for Connor, Oliver, and Susan, respectively. Levels of problem behavior were stable for Connor, but variable for Susan and Oliver. During reinstatement, there were two days during which Susan could not be observed. On the first day, the classroom Smartboard was malfunctioning and the teacher allowed the students to have an early recess and, on the second day, there was a fire drill during the class period.

When the return to intervention occurred, increases in academic engagement were observed for all participants. The average levels of academic engagement increased to 82.02% (range = 78.33% - 89.17%), 75.56% (range = 30.83% - 97.50%), and 92.53% (range = 88.33% - 98.48%), for Connor, Oliver, and Susan, respectively. Median levels of academic engagement were 80%, 79.17%, and 90.83% for Connor, Oliver, and Susan, respectively.

When the Mystery Motivator component was added to CICO, decreases in problem behavior were maintained for Connor and Oliver, while Susan exhibited an
increase in problem behavior. The average levels of problem behavior were 17.78% (range= 9.17% - 21.67%), 29.79% (range = 20.83% - 47.5%), and 32.5% (range = 15% - 45.83%), for Connor, Oliver, and Susan, respectively. Median levels of problem behavior were 19.58%, 30%, and 36.67%, for Connor, Oliver and Susan, respectively. Following Mystery Motivator, Connor’s teachers felt that his behavior had improved to an acceptable level and withdrew from participation. Additionally, Susan’s teachers requested CICO be reimplemented fully as her behavior regressed during the fading procedure, although her problem behavior did not return to levels observed without intervention. This request was made after Susan was in a verbal disagreement with the librarian in the school library during activity time. Susan was talking without permission and, following a reprimand, began yelling at the librarian and using obscene language.

During the Mystery Motivator phase, increases in academic engagement were observed for Connor and Oliver, while Susan’s academic engagement decreased. The average levels of academic engagement were 83.47% (range = 78.33% - 91.67%), 78.13% (range = 66.67% - 92.5%), and 70.56% (range = 57.5% - 88.33%) for Connor, Oliver, and Susan, respectively. Median levels of problem behavior were 81.67%, 76.67%, and 65.83% for Connor, Oliver, and Susan, respectively.

For Oliver, the Mystery Motivator condition resulted in stable low levels of problem behavior and stable high levels of appropriate behavior so intervention was further faded such that CICO was converted to self-monitoring. Following the 6th self-monitoring session, Oliver met the 80% agreement criterion and CICO was faded and only self-monitoring was used. For Connor, the Mystery Motivator phase resulted in acceptable behavioral performance, however; there was some variability in behavior such
that self-monitoring could not be implemented prior to the end of the school year. For Susan, the Mystery Motivator phase resulted in highly variable behavior and suspensions from school (described further in Results section), and as a result, there was a return to the CICO phase.

When self-monitoring was implemented for Oliver, the average levels of problem behavior increased slightly, but remained above baseline levels. During self-monitoring, Oliver’s average level of problem behavior was 38.17% (range = 20.83% - 54.17%). Oliver’s median level of problem behavior was 45% during self-monitoring. Though an increase in problem behavior was observed, the average level of problem behavior was below that observed during phases with no intervention.

During the self-monitoring phase, a decrease in academic engagement was also observed for Oliver. The average level of academic engagement was 67.17% (range = 51.67% - 83.33%). The median level of academic engagement was 68.33% during self-monitoring. When compared to the mystery motivator condition, a decrease in academic engagement of 10.96% was observed. Though academic engagement decreased, the average level of academic engagement remained above the average levels observed in phases with no intervention.

For Susan, CICO was reimplemented following the Mystery Motivator phase due to increases in problem behavior. During the final CICO phase, Susan’s average level of problem behavior was 22.13% (range = 7.5% - 33.33%). The median level of problem behavior was 25.56%.
Figure 1. Direct Observations of Student Behavior (i.e., Problem Behavior and Academic Engagement) for Each Participant.
Teacher Ratings of Appropriate Behavior

Teacher ratings of appropriate behavior are presented in Figure 2. During baseline, mean percentages of points earned were 84% (range = 74.67% - 96%), 74.67% (range = 68% - 81.33%), and 75.24% (range = 29.33% - 100%), for Connor, Oliver, and Susan, respectively. The median percentages of points earned were 81.33%, 74.67%, and 77.33%, for Connor, Oliver, and Susan, respectively.

When CICO was implemented, mean teacher ratings of appropriate behavior increased for Oliver and Susan to 75.60% (range = 64% - 88%) and 87.05% (range = 52% - 100%), respectively. Teacher ratings of Connor’s appropriate behavior decreased slightly to an average of 79.47% (range = 56% - 88%). For all students, teacher ratings of appropriate behavior were high during baseline, and ceiling effects may have contributed to the small decrease in Oliver’s points earned. The median percentages of points earned were 86.67%, 73.33%, and 90.67%, for Connor, Oliver, and Susan, respectively.

When CICO was withdrawn, mean teacher ratings of appropriate behavior were 77% (range = 64% - 100%), 60.32% (range = 50.67% - 69.33%), and 97.67% (range = 92% - 100%), for Connor, Oliver, and Susan, respectively. While decreases in ratings of appropriate behavior were seen for Connor and Oliver, Susan’s ratings actually increased and remained above 90%. Median ratings of appropriate behavior were 72%, 60%, and 99.33% for Connor, Oliver, and Susan, respectively.

When CICO was reinstated, increases in the average percentages of points earned were observed for Connor and Oliver, while Susan’s percentage of points earned decreased slightly. This decrease may be due to ceiling effects resulting from the high...
percentages of points awarded across both phases. The average percentages of points earned were 86.05% (range = 69% - 100%), 69.43% (range = 52% - 86.67%), and 96.76% (range = 90.67% - 100%), for Connor, Oliver, and Susan, respectively.

When Mystery Motivator was introduced, the average percentage of points earned increased for Connor and Oliver, but decreased for Susan. The average teacher ratings of appropriate behavior were 91.64% (range = 76% - 100%), 76.93% (range = 69.33% - 85.33%), and 68.11% (range = 30% - 93.33%) for Connor, Oliver, and Susan, respectively. Median ratings of appropriate behavior were 91.33%, 77.33%, and 77.33%, for Connor, Oliver, and Susan, respectively. When the Mystery Motivator phase began, Susan’s data increased in variability in addition to the overall decrease in percentage of points earned. Data for Connor and Oliver, however, remained fairly stable, maintaining similar levels to the preceding intervention phase.

When self-monitoring was added for Oliver, the overall level and trend of the data remained stable when compared to the Mystery Motivator phase. The mean teacher rating of appropriate behavior for Connor was 79.43% (range = 72% - 88.33%), with a median of 78.67%. Connor’s average self-rating was 85.95% (range = 69.33% - 100%), with a median of 84%. Overall, the percentage of points earned by Oliver during the self-monitoring phase was slightly higher than in the Mystery Motivator phase. Additionally, average agreement between Connor’s self-ratings and the teacher was 70.48% (range = 40% - 93.33%).

For Susan, CICO was reimplemented following the seventh session of the Mystery Motivator phase due to teachers reporting increased problem behavior and variability in problem behavior and teacher ratings of appropriate behavior. In the final
CICO phase, Susan’s average percentage of points earned was 92.19% (range = 82.67% - 100%), with a median of 90.67%. When CICO was implemented, the level of teacher ratings increased immediately. Additionally, the increase was maintained, remaining stable throughout the phase.
Figure 2. Percentage of Points Earned Daily for Each Participant.
Statistical Analysis

Spearman’s rank order correlation was used to determine correlations between direct observations of academic engagement and point data for the corresponding class periods during the baseline, intervention, withdrawal, and return to intervention phases for all participants. A positive correlation was found between points earned and academic engagement when data for all participants were combined. The correlation coefficient was 0.47 with a p-value of 0.01, indicating a moderate correlation.

Spearman’s rank correlation was also used to analyze the data for each participant. When Connor’s data were analyzed, a correlation coefficient of 0.15 was found with a p-value of 0.53, indicating a weak, statistically insignificant correlation. Analysis of Oliver’s data resulted in a correlation coefficient of 0.57 with a p-value of 0.01, indicating a strong possible correlation. When Susan’s data were analyzed individually, a correlation coefficient of 0.637 with a p-value of 0.01 was found, indicating a strong possible correlation.

Office Discipline Referrals

As a secondary measure of disruptive behavior, the rate of ODRs was analyzed for all participants. Prior to the implementation of CICO, Connor had received a total of three ODRs in the previous month. Following implementation of CICO, Connor did not receive any ODRs. Prior to intervention, Oliver had received three ODRs in the previous semester, one of which was in the previous month. Following the initial implementation of CICO, Oliver did not receive any additional ODRs. Susan had received six ODRs prior to the implementation of CICO. She received no ODRs during CICO, but was suspended on the second day of the fading phase for five days. When she returned from
suspension, her teachers reported her behavior continued to regress and requested that CICO be implemented fully until the end of the year.

Teacher Ratings of Acceptability

At the conclusion of the study, all participating teachers completed the IRP-15 as a measure of treatment acceptability. The mean score across all teachers on the IRP-15 was 77.57, indicating a high level of acceptability. Connor had two teachers, whose scores were 71 and 79. Oliver also had two teachers, whose scores were 76 and 78. Susan had three teachers, whose scores were 74, 80, and 84. These results indicate that all participating teachers found CICO to be an acceptable intervention.
CHAPTER IV

DISCUSSION

In the current study, the effect of CICO on problem behavior and academic engagement exhibited by three elementary school students was investigated. The results indicate that CICO reduced students’ levels of problem behavior and increasing their levels of academic engagement as evidenced through direct observation. When CICO was implemented, decreases in problem behavior of 47.02%, 64.13%, and 44.89% were observed for Connor, Oliver, and Susan, respectively. Additionally, decreases of 56.87%, 30.02%, and 51.97%, were observed during the reinstatement phase compared to the preceding withdrawal phase for Connor, Oliver, and Susan, respectively.

Simultaneous increases in the mean and median levels of academic engagement were also observed. When CICO was initially implemented increases of 61.18%, 66.76%, and 29.42%, were observed for Connor, Oliver, and Susan, respectively. Additionally, increases of 41.61%, 21.13%, and 48.55% were observed for Connor, Oliver, and Susan, respectively, during the reinstatement phase compared to the withdrawal. Teacher ratings of appropriate behavior, which served as a secondary measure of academic engagement, did not increase for all participants when CICO was implemented. When CICO was first implemented, Connor’s ratings of appropriate behavior decreased by 5.39%. Additionally, a decrease of 6.99% was observed for Susan during the reinstatement phase. As teacher ratings of student behavior were high throughout the study, these decreases may be due to ceiling effects.

Previous research evaluating CICO has found CICO to be effective for reducing problem behaviors as measured by ODRs. However, ODRs may not be the most reliable
measure of problem behavior, and direct observations have become the standard for behavioral measurement. Additionally, studies of CICO have not included measures of appropriate behavior or academic engagement. Only two previous studies were identified that used direct observation of student behavior. Also, only one study, conducted by Hawken and Horner (2003), was found to include a measure of academic engagement. Hawken and Horner (2003) reported decreases in problem behavior and improvements in academic engagement when CICO was implemented with middle school students; however, students exhibited low levels of problem behavior during baseline and there was substantial data overlap when comparing intervention and baseline. Hawken and Horner also did not report teacher ratings of behavior for comparison to direct observation. The current study included both data from direct observations and teacher ratings, as well as ODR data.

Additionally, the current study looked at the correlation between teacher ratings of appropriate behavior and observed levels of academic engagement. A Spearman’s rank correlation combining the data of all participants resulted in a statistically significant correlation coefficient of 0.47, indicating a moderate correlation between teacher ratings and student academic engagement. As direct observation is the standard for behavioral measurement, if teacher ratings of appropriate behavior are reliable, they would be expected to correlate with observations of academic engagement (Chafouleas et al., 2007; Riley-Tillman et al., 2007). With regard to individual teacher’s ratings, strong correlations between teacher ratings and direct observation were found for two participants, Oliver and Susan, while a weak correlation was found for Connor. Overall, a moderate correlation was found between teacher ratings and direct observations. This
study indicates that teacher ratings of academic engagement may be at least moderately consistent with direct observations of students’ academic engagement.

Previous research regarding the correlation between teacher ratings on DBRCs and direct-observation data indicate similar decisions about the effectiveness of intervention would be made when using direct observation data or teacher ratings. Chafouleas and colleagues (2007), compared effect sizes calculated from direct observation to those calculated from teacher and independent observer ratings, and found that they were comparable. Teachers and observer ratings were found to have effect sizes of 0.86 and 0.85, respectively, whereas direct observation yielded an effect size of 0.57. The higher effect sizes resulting from ratings of behavior indicate that teacher ratings of appropriate behavior may be inflated when compared to direct observations. No other studies were identified that attempted to compare teacher ratings with data from direct observation. In the current study, while the correlation between teacher ratings and direct observation data were moderately correlated, visual analysis suggests much greater intervention effects for direct observation data than for teacher ratings. In particular, teacher ratings of academic engagement were consistently higher for non-intervention phases than direct observation data. As a result, if used alone teacher may have resulted in some difficulties in evaluating the impact of intervention on student performance.

Future research should continue to evaluate the extent to which teacher ratings of behavior correlate with direct observations and which measure is most appropriate for intervention decision making.

This study included evaluation of fading of CICO components following implementation and intervention success. Specifically, for all three participants, the
schedule of reinforcement was thinned from five possible days per week to three possible days per week. Moreover, the reinforcement contingency was made indiscriminable in that a Mystery Motivator component was adopted. For Connor and Oliver, small increases in academic engagement and corresponding decreases in problem behavior were observed during the Mystery Motivator phase. However, Susan’s problem behavior increased during the Mystery Motivator phase and level of appropriate behavior decreased. Moreover, her teacher reported concerns with her behavior and requested a return to full CICO implementation. Therefore, results from this study are mixed with regard to the effectiveness of the Mystery Motivator procedure as a fading option for CICO. For two of three participants, the Mystery Motivator procedure appeared sufficient and appropriate as a fading mechanism. However, Susan required full CICO implementation. Such outcomes may be expected in practice as some students may require more intensive behavioral supports than others. This study highlights the need for routine progress monitoring of behavioral supports so that appropriate decisions can be made regarding behavioral programming. One limitation of this study was the return to CICO following implementation of the Mystery Motivator for Susan. When attempts were made to fade intervention using Mystery Motivator, there were not enough supports to maintain Susan’s behavioral gains. Previous research evaluating CICO (Filter et al., 2007; Hawken & Horner, 2003; Hawken et al., 2007; McCurdy et al., 2007; Todd et al., 2008) has not evaluated systematic fading of CICO components so this study provides an important contribution to the literature. Behavioral supports within a three-tiered system should not be expected to continue forever, so it is important to empirically investigate systematic plans for fading supports.
In addition to evaluating the Mystery Motivator procedure as a method for fading CICO, further intervention fading was conducted for Oliver after Mystery Motivator was deemed effective. Specifically, fading for Oliver included a self-monitoring phase, which was also judged successful for maintaining low levels of problem behavior as well as high levels of academic engagement. Fading CICO to self-monitoring may be viewed as quite attractive in that adults’ response effort is greatly diminished and the student receives explicit training for self-monitoring which is an important developmental skill.

This study includes some limitations in need of discussion and future research. As all participants were in elementary school, the extent to which these findings generalize to other populations, such as high school students, is limited. As the DBRC is built on increasing feedback on behavior, which is not age-specific, CICO may also work well for high school students. However, more departmentalized schedules (e.g., science, social studies) may present complications in terms of including more teachers on the DBRC, which could potentially negatively impact CICO integrity. More research is needed, however, to determine if CICO is feasible and effective in a high school setting, where more teachers would need to be involved.

Another limitation is that observations only occurred for 20 min per day during one instruction period. These observations constitute a limited sample of the students’ entire school day. In this study, a decision was made to observe students during the time identified by the referring teacher as most problematic. In the future, researchers may probe other times during the day in order to investigate the extent to which CICO implementation impacts behavior throughout the day.
Finally, results from this study indicated a moderate correlation between teacher ratings of students’ behavior and direct observations. More specifically, a moderate correlation between teacher ratings of appropriate behavior and direct observations of academic engagement was found. There were moderate correlations for two participants as well as combined data from all participants. For Connor, only a weak correlation was found between teacher ratings and direct observations of academic engagement. Connor’s teachers tended to rate him highly throughout the study, despite differences in his exhibited behavior during observations. Connor’s reading teacher, whose ratings were used for the correlation, stated that she was happy with his level of behavior following the initial implementation of CICO. It is possible that her ratings were affected by her perception of Connor’s behavior as being much improved. The results from this study indicate teacher ratings may be a moderately accurate measure of student classroom behavior; however, additional research in this area is needed.

In summary, the current study supports CICO as an effective intervention for decreasing problem behavior and increasing academic engagement. Given the moderate correlations between teacher ratings and direct observations of academic engagement, it is likely that teacher ratings are a good indicator of students’ classroom behavior and may be useful for intervention decision-making. However, future research should continue to evaluate this issue. Additionally, the fading procedure used in this study provides a promising framework for how to reduce intervention efforts while maintaining appropriate student behavior. However, as only one student was able to participate in the full fading procedure, future research is needed to determine what fading procedures are best.
Title of Study:
The Effects of Check in/Check out on the Problem Behavior and Appropriate Behavior of Elementary School Students.

Purpose
Your child is being asked to participate in a study that is evaluating the effects of an intervention in decreasing disruptive classroom behavior, and increasing appropriate classroom behavior. This study is important because it will evaluate the effectiveness of an efficient intervention for schools to implement in order to address the behavioral needs of at-risk students.

Participants:
Your child was selected for participation because he or she was recommended by a teacher or administrator due to presenting behavioral concerns, and because the problem behaviors presented do not include severe or dangerous behaviors.

Procedure:
If you agree to allow your child to participate in this study, your child will participate in the intervention. The intervention consists of your child checking in with a staff member in the morning, and that individual will discuss your child’s behavioral expectations for the day and provide a behavior report card for the child to bring to class. Your child will then go to class and he or she will get feedback on his or her behavior in class and behavioral ratings on his or her report card. At the end of the day, your child will check-out with the staff member, who will provide praise and/or corrective feedback as well as a reward if your child met his or her goal that day. The staff member will then provide your child with a copy of the report card to take home for you to review and sign, which will then be returned to school the following day. The intervention will be withdrawn for a period of time to determine if any behavioral gains are maintained, and will then be re-implemented.

Benefits/Risks to Participant:
Your child’s participation in the study will provide him or her with additional teacher and staff attention and feedback, in an attempt to improve his or her behavior at school. Rewards will be provided to your child for meeting his or her behavioral goals. The potential risks include a possible increase in your child’s inappropriate behavior as the use of these procedures could increase inappropriate behavior.

Voluntary Nature of the Study/Confidentiality:
Your child’s participation in this study is entirely voluntary and you may refuse to complete the study at any point during the experiment. In addition, all information obtained during the study will be kept confidential. All information that may identify you will be withheld. Your name and other identifying information will not be used in the research papers, any submission to a professional journal for publication, or presentation. The only circumstances in which we would release information about you or your child would be if he or she tells us he or she is a harm to self or others, if one of your child is abused, if the release of information is court ordered, or if there is a medical emergency in which release of information is important for your child’s safety.

Contacts and Questions:
At any time you may withdraw from the study or ask any questions you may have regarding this study. Questions concerning the research should be directed to Leila Mullooly or Dr. Brad Dufrene at (601) 266-5255 or via email at leila.mullooly@eagles.usm.edu or brad.dufrene@usm.edu.

Parental Consent:
I have had the purposes and procedures of this study explained to me and have had the opportunity to ask questions. My questions have been answered to my satisfaction, and I am voluntarily signing this form to participate in this research study. My signature shows my willingness to allow my child to participate in this study under the conditions stated.

This Section to be Completed by Parent

____________________________  ______________________________
Name of Parent  Date
APPENDIX B

TEACHER/STAFF CONSENT FORM

University of Southern Mississippi
Consent Document for Research Participants

Title of Study:
The Effects of Check in/Check out on the Problem Behavior and Appropriate Behavior of Elementary School Students

Purpose
You are being asked to participate in a study that is evaluating the effects of an intervention in decreasing disruptive classroom behavior, and increasing appropriate classroom behavior. This study is important because it will evaluate the effectiveness of an efficient intervention for schools to implement in order to address the behavioral needs of at-risk students.

Participation:
You are being asked to participate because one of your students is participating in the study, or you have been nominated to serve as the coordinator of the intervention.

Procedure:
If you agree to participate in this study, you will be participating in an intervention that provides increased attention and feedback to an at-risk student in an attempt to increase his or her appropriate behaviors. The intervention consists of the student checking in with the coordinator in the morning and the coordinator will discuss the students’ behavioral expectations for that day. Depending on the phase of the study, the coordinator may provide the student with a daily behavior report card for him or her to take to each of his or her teachers to fill out during the day. The teacher will rate the student’s behavior at the end of each class period. The teacher may or may not give feedback to the student, again depending on the phase. At the end of the day, the coordinator will total the number of points the student earned throughout the day and will provide praise and/or corrective feedback as well as a reward if the child met his or her goal that day. The coordinator will then provide the student with a home note to take home for a parent/guardian to sign, which will then be returned to school the following day.

Benefits/Risks to Participant:
Your student’s participation in the study will provide him or her with additional teacher and staff attention and feedback, in an attempt to improve his or her behavior at school. Rewards will be provided to your child for meeting his or her behavioral goals. The potential risks include a possible increase in your child’s inappropriate behavior as the use of these procedures could increase inappropriate behavior.
Voluntary Nature of the Study/Confidentiality:
Your participation in this study is entirely voluntary and you may refuse to complete the study at any point during the experiment. In addition, all information obtained during the study will be kept confidential. All information that may identify you will be withheld. Your name and other identifying information will not be used in the research papers, any submission to a professional journal for publication, or presentation. The only circumstances in which we would release information about you would be if there is a threat of harm to self or others, abuse, if the release of information is court ordered, or if there is a medical emergency in which release of information is important for someone’s safety.

Contacts and Questions:
At any time you may withdraw from the study or ask any questions you may have regarding this study. Questions concerning the research should be directed to Leila Mullooly or Dr. Brad Dufrene at (601) 266-5255 or via email at leila.mullooly@eagles.usm.edu or Brad.Dufrene@usm.edu. This project has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001, (601) 266-6820. A copy of this form will be given to the participant.

Participant Consent:
I have had the purposes and procedures of this study explained to me and have had the opportunity to ask questions. My questions have been answered to my satisfaction, and I am voluntarily signing this form to participate in this research study. My signature shows my willingness to participate in this study under the conditions stated.

This Section to be Completed by Teacher/Staff

________________________________________  ______________________________
Name of Teacher/Staff  Date
APPENDIX C

IRB APPROVAL

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

Institutional Review Board

118 College Drive #5147
Hattiesburg, MS 39406-0001
Tel: 601.266.6820
Fax: 601.266.5509
www.usm.edu/irb

HUMAN SUBJECTS PROTECTION REVIEW COMMITTEE
NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Human Subjects Protection Review Committee in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.

Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 10071315
PROJECT TITLE: The Effects of Check In/Check Out on Levels of Problem Behavior and Academic Engagement in Elementary School Students
PROPOSED PROJECT DATES: 08/01/2010 to 06/01/2011
PROJECT TYPE: Dissertation or Thesis
PRINCIPAL INVESTIGATORS: Leila Kay Mullooly
COLLEGE/DIVISION: College of Education & Psychology
DEPARTMENT: Psychology
FUNDING AGENCY: N/A
HSPRC COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 07/15/2010 to 07/14/2011

[Signature]
Lawrence A. Hosman, Ph.D.
HSPRC Chair

[Signature]
7.19.2010
Date
Name: Leila Kay Mullody
E-Mail Address: leila.mulloolyp@eagles.usm.edu
Mailing Address: 118 College Dr., Hattiesburg, MS 39401
College/Division: The University of Southern Mississippi
Department Box #: 5025
Department: Psychology
Phone: 985-856-2027

Proposed Project Dates: From 8/1/2010 To 6/1/2011
Title: The Effects of Check In/Check Out on Levels of Problem Behavior and Academic Engagement in Elementary School Students

Grant Number (when applicable)

New Project
X Dissertation or Thesis

Renewal or Continuation: Protocol #
Change in Previously Approved Project: Protocol #

Principal Investigator: Leila Mullody
Date: 7/2/10

Advisor
Date: 7-2-10

Department Chair
Date

RECOMMENDATION OF HSPRC MEMBER

Category I, Exempt under Subpart A, Section 46.101( ), 45 CFR 46.

X Category II, Expedited Review, Subpart A, Section 46.110 and Subparagraph (B).

Category III, Full Committee Review.

HSPRC College/Division Member
Date: 7-13-10

HSPRC Chair
Date: 7-19-10
APPENDIX D

FUNCTIONAL ASSESSMENT INFORMANT RECORD FOR TEACHERS (FAIR-T)

USM School Psychology Service Center
Functional Assessment Informant Record for Teachers

If information is being provided by both the Teacher and the Classroom Aide, indicate both respondents' names. In addition, in instances where divergent information is provided, note the sources of specific information.

Student: ____________________________________________
Respondent(s): ______________________________________

School: __________________________ Age: ______ Sex: M F
Date: ________________

1. Describe the referred student. What is he/she like in the classroom? (Write down what you believe is the most important information about the referred student.)

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

2. Pick a second student of the same sex who is also difficult to teach. What makes the referred student more difficult than the second student?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

3. a. On what grade level is the student reading?
   b. On what grade level is an average student in the class reading?

4. a. On what grade level is the student performing in math?
   b. On what grade level is an average student in the class performing in math?

5. a. What is the student's classwork completion percentage (0 - 100%)?
   b. What is the student's classwork accuracy percentage (0 - 100%)?

6. Is the student taking any medications that might affect the student's behavior?
7. Do you have any specific health concerns regarding this student?
   _____ Yes   _____ No   If yes, briefly explain:
   ____________________________________________________________

8. What procedures have you tried in the past to deal with this student's problem behavior?
   ____________________________________________________________

9. Briefly list below the student's typical daily schedule of activities.

   Time | Activity
   ____  | ________          | ____  | Activity
   ______| ________          | ____  | ________
   ______| ________          | ____  | ________
   ______| ________          | ____  | ________
   ______| ________          | ____  | ________
   ______| ________          | ____  | ________
   ______| ________          | ____  | ________
   ______| ________          | ____  | ________
   ______| ________          | ____  | ________
   ______| ________          | ____  | ________
   ______| ________          | ____  | ________

10. When during the day (two academic activities and times) does the student's problem behavior(s) typically occur?
    Academic Activity #1 __________________________
    Time ----------------------------------------
    Academic Activity #2 __________________________
    Time ----------------------------------------

11. Please indicate good days and times to observe. (At least two observations are needed.)
## Problem Behaviors

Please list one to three problem behaviors in order of severity. Do not use a general description such as "disruptive" but give the actual behavior such as "doesn't stay in his/her seat", or "talks out without permission".

1. ____________________________________________
2. ____________________________________________
3. ____________________________________________

1. Rate how *manageable* the behavior is:
   a. Problem Behavior 1
      1  2  3  4  5
      Unmanageable Manageable
   b. Problem Behavior 2
      1  2  3  4  5
      Unmanageable Manageable
   c. Problem Behavior 3
      1  2  3  4  5
      Unmanageable Manageable

2. Rate how *disruptive* the behavior is:
   a. Problem Behavior 1
      1  2  3  4  5
      Mildly Very
   b. Problem Behavior 2
      1  2  3  4  5
      Mildly Very
   c. Problem Behavior 3
      1  2  3  4  5
      Mildly Very

3. How often does the behavior occur *per day* (please circle)?
   a. Problem Behavior 1
      <1-3  4-6  7-9  10-12  >13
   b. Problem Behavior 2
      <1-3  4-6  7-9  10-12  >13
c. Problem Behavior 3  
   <1-3  4-6  7-9  10-12  >13

4. How many months has the behavior been present?
   a. Problem Behavior 1  
      <1  2  3  4  entire school year
   b. Problem Behavior 2  
      <1  2  3  4  entire school year
   c. Problem Behavior 3  
      <1  2  3  4  entire school year

<table>
<thead>
<tr>
<th>Antecedents:</th>
<th>Problem Behavior #</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Does the behavior occur more often during a certain type of task?  
   ______

2. Does the behavior occur more often during easy tasks?  
   ______

3. Does the behavior occur more often during difficult tasks?  
   ______

4. Does the behavior occur more often during certain subject areas?  
   ______

5. Does the behavior occur more often during new subject material?  
   ______

6. Does the behavior occur more often when a request is made to stop an activity?  
   ______

7. Does the behavior occur more often when a request is made to begin a new activity?  
   ______

8. Does the behavior occur more often during transition periods?  
   ______

9. Does the behavior occur more often when a disruption occurs in the student's normal routine?  
   ______

10. Does the behavior occur more often when the student's request has been denied?  
    ______

11. Does the behavior occur more often when a specific person is in the room?  
    ______

12. Does the behavior occur more often when a specific person
is absent from the room?

13. Are there any other behaviors that usually precede the problem behavior?

14. Is there anything you could do that would ensure the occurrence of the behavior?

15. Are there any events occurring in the child's home that seem to precede occurrence of the behavior at school?

16. Does the behavior occur more often in certain settings? (circle all that apply)
   - large group
   - small group
   - independent work
   - one-to-one interaction
   - bathroom
   - recess
   - cafeteria
   - bus
   - other:_____________

Consequences: Problem Behavior #_____:

1. Please indicate whether the following consequences occur after the behavior is exhibited.

<table>
<thead>
<tr>
<th>Consequence</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to Preferred Activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Termination of Task</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rewards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer Attention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher Attention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Praise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ignore</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-direction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interrupt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reprimand</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Is there any task you have stopped presenting to the student as a result of the problem behavior?
   _____ Yes   _____ No   If yes, describe:______________________________
3. Are there other problem behaviors that often occur after the behavior is exhibited?
   _____ Yes    _____ No
   If yes, describe:_________________________________________________

4. Does the student typically receive praise or any positive consequence when behavior
   occurs that you would like to see instead of the problem behavior?
   _____ Yes    _____ No
   Comments:_____________________________________________________

*Attach additional pages for target behaviors.*
## APPENDIX E

### 10 S INTERVAL OBSERVATION FORM

**HAND DATA COLLECTION SHEET**

<table>
<thead>
<tr>
<th>Child:</th>
<th>Date:</th>
<th>Session:</th>
<th>Data Collector:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>6.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>7.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>8.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>9.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>10.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Notes: Totals:*
# Check in/Check out Daily Behavior Report Card

Student Name: __________________________ Date: ____________________

Please indicate the point value corresponding to the degree to which each behavior was displayed:
0= Never (0%)  1= Occasionally (1-20%)  2= Some (21-40%)  3= Approximately half (41-60%)  4= Most (61-80%)  5= Majority (81-100%)

<table>
<thead>
<tr>
<th>Period</th>
<th>Be Safe (remain in seat)</th>
<th>Be Respectful (raise hand and be called on before speaking)</th>
<th>Be Responsible (remain on task and complete assignments)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0% 1-20% 21-40% 41-60% 61-80% 81-100%</td>
<td>0% 1-20% 21-40% 41-60% 61-80% 81-100%</td>
<td>0% 1-20% 21-40% 41-60% 61-80% 81-100%</td>
</tr>
<tr>
<td>Period 1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Period 2</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Period 3</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Period 4</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Period 5</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Points Earned (Possible 120): __________________________
Percentage Earned: __________________________
Goal Percentage: __________________________

Morning Sign in: __________________________ Afternoon Sign in: __________________________ If Goal Met, Reinforcer Chosen: __________________________

Parent Signature: __________________________
Student Initials After Reward Received: __________________________
APPENDIX G

CICO TREATMENT INTEGRITY CHECKLIST

Morning Check In:

☐ Greets student, engaging in small talk to establish rapport

☐ Asks if student has materials for class

☐ Collects signed copy of DBRC from previous school day

☐ Provides student with new DBRC

☐ Reviews point goal for the day and offers suggestions on how goal can be met

☐ Provides praise to student for checking in

☐ Provides student with encouragement to meet the day’s point goal

☐ Document student’s check in on CICO Student Record Form

Teacher CICO:

☐ Collects DBRC from student, prompting student if he or she forgets

☐ At the pre-determined time, rates the student on his or her behavior using the DBRC

☐ Shares the DBRC ratings with student, providing positive comments on the student’s behavior

☐ Returns DBRC to the student

Check Out:

☐ Provides student with praise for appropriate behavior
☐ Provides student with corrective feedback for noncompliance with expectations

☐ Calculates percentage of points earned on DBRC

☐ Determines whether student met the point goal

☐ Provides student with reward if point goal is met

☐ Makes a copy of the DBRC for the student to bring home for a signature

☐ Document the student’s check out on the CICO Student Record Form
APPENDIX H

PROCEDURAL INTEGRITY TRAINING SCRIPT

Introduction:

☐ “Check in/Check out is an easily implemented intervention that provides students with additional structure and feedback on their behavior. In this training, we are going to cover the basics of CICO implementation, and you will have the opportunity to practice the CICO procedures.”

Morning Check In:

☐ “When the student arrives, you will want to greet them and engage in some conversation to establish a rapport. You might start off saying, for example, ‘Good morning, Jimmy! How are you today?’

☐ “You will then ask if the student has materials needed for school, such as a pencil and notebook. So you would say, ‘Jimmy, are you ready for school? Do you have a pencil and notebook?’ If the child is prepared, you should praise them and say something like ‘Good job coming prepared!’”

☐ “Next you would ask the student if they have their report card from the previous day. So you would say something like, ‘Did you remember to bring back your report card?’ Again, you should praise the student for coming prepared.”

☐ “At this time, you should give the student the new report card for the day.”

☐ “After giving them the card, review their point goal. You can offer tips on how to meet their goal as well. For example, ‘Jimmy, your point goal for today is 80% or 60 points. Yesterday, you had trouble remaining on-task in first period; so,”
remember to look at the teacher when she is talking and to complete your assignments.”

“*You’ll also want to praise the student for attending check in, so you could say ‘You’re starting off great today by remembering to check in, keep up the good work!’*”

“The student should also be encouraged to meet their point goal. Try to provide encouragement with statements such as, ‘Your point goal is 60, and I know you can reach it!’”

“At this time, check in is over, and the student can report to class. You should then record check in on the CICO Student Record Form. On the Record Form, you should report the date and the student’s name, and then indicate if the student had their materials, turned in the previous day’s report card, and that you reviewed the goals for the day with the student.”

“Do you have any questions? Let’s practice a typical check in.”

Have the teacher go through all steps of the CICO procedure, and use the Treatment Integrity Form to determine if all steps are completed.

Provide feedback on the practice session.

**Teacher CICO:**

“When the student arrives for class, you will want to collect the behavior report card. If the student forgets to bring it to you, prompt the student for the card. I will provide you with extra cards in case the student loses it during the day.
Don’t penalize the student for forgetting to give you the card; but if they lose the card, they must start over, and they do not get any points previously earned.”

☐ “At the end of the period, use the card to rate the student’s behavior during the class period. Each rating has corresponding descriptors and percentages to aid you in making an accurate estimate of behavior. Please do your best to rate the child’s behavior for the class period immediately preceding your rating.”

☐ “At this time, you should meet with the student to review the report card. Review the student’s points earned, and provide feedback on their behavior. When providing feedback, try to use positive statements. Even if the student had a bad day, try to think of something they did well. For example, ‘Jimmy, you earned 2 points for “Be Responsible,” you had some trouble staying on task today, but I loved how you remained in your seat raised your hand to ask questions!”

☐ “After reviewing the report card, check in is complete. You simply return the card to the student and send them off to their next class.”

☐ “Do you have any questions? Let’s practice a typical check in.”

☐ Have the teacher go through all steps of the CICO procedure, and use the Treatment Integrity Form to determine if all steps are completed.

☐ Provide feedback on the practice session.

Check Out:

☐ When the student arrives at check out, collect the report card and provide praise for appropriate behavior. Even if the student had a bad day, they probably earned
some points. Provide praise for anything they did well. For example, ‘Great job staying in seat during 3rd period, Jimmy!’

☐ “If the student seemed to have trouble in a particular area, provide constructive feedback. Again, try to phrase feedback in a positive manner. For example, ‘Jimmy, you seemed to have trouble completing your assignments today. Tomorrow, do your best to stay on-task and finish your work. You can do it!’”

☐ “Next, you are going to calculate the percentage of points the child earned that day. Add up all points earned, divide by the total points possible, and multiply by 100. The total number of points earned should be written at the bottom of the report card, as should the percentage of points earned.”

☐ “Based on the point goal for the day, use the percentage of points earned to determine if the goal is met. For example, the total points possible will be 75. If a student earns 60 points, 60 divided by 75 is .8, times 100 is 80%. If the point goal for the day is 80%, the goal has been met.”

☐ “If the student reaches the point goal, allow him or her to choose a reward from the reward menu. I will provide you with the reinforcers.”

☐ “Make a copy of the behavior report card for the child to bring home for parent signature, and file the original. Remind the student to get the report card signed prior to releasing them from check out.”

☐ “At this time the student is finished checking out, and you may allow them to leave. Record on the Student Record form that you filed the original copy of the report card, and also record the percentage of points earned.”
“Do you have any questions? Let’s practice a typical check out.”

Have the teacher go through all steps of the CICO procedure, and use the Treatment Integrity Form to determine if all steps are completed.

Provide feedback on the practice session.
APPENDIX I
CHECK IN/ CHECK OUT STUDENT RECORD FORM

<table>
<thead>
<tr>
<th>Student Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CICO Mentor:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Check In</th>
<th>Check Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Had Materials</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adapted from Crone, Horner, Hawken, 2004
REFERENCES


Office of Special Education Programs Center on Positive Behavior Support (2002). 


