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# Effects of Check-In/Check-Out With and Without Access to Feedback from a Daily Behavior Report Card on the Levels of Appropriate Behavior in Secondary School Students

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The University of Southern Mississippi

EFFECTS OF CHECK-IN/CHECK-OUT WITH AND WITHOUT ACCESS TO  
FEEDBACK FROM A DAILY BEHAVIOR REPORT CARD ON THE LEVELS OF  
APPROPRIATE BEHAVIOR IN SECONDARY SCHOOL STUDENTS

by

Nichole Marie Weakley

Abstract of a Dissertation  
Submitted to the Graduate School  
of The University of Southern Mississippi  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy

December 2012

## ABSTRACT

### EFFECTS OF CHECK-IN/CHECK-OUT WITH AND WITHOUT ACCESS TO FEEDBACK FROM A DAILY BEHAVIOR REPORT CARD ON THE LEVELS OF APPROPRIATE BEHAVIOR IN SECONDARY SCHOOL STUDENTS

by Nichole Marie Weakley

December 2012

Check-in/Check-out (CICO) is a Tier 2 behavioral intervention typically used in combination with a Daily Behavior Report Card (DBRC) to provide systematic feedback about a student's behavior at the beginning and end of each school day. The purpose of the present study was to evaluate the effectiveness of CICO with and without feedback on a DBRC for increasing appropriate behavior and decreasing disruptive behavior in students presenting with behavioral concerns in the classroom. Using a multiple baseline, counterbalanced across participants, the intervention was implemented with four secondary students considered to be at-risk for developing more significant problem behaviors. Prior to treatment implementation, the Functional Assessment Informant Record – Teacher form (FAIR-T) was completed with all teachers as a brief measure to aide in developing hypotheses regarding the function of problem behaviors for each student. Appropriate behavior was analyzed through collection of permanent product data (i.e., points earned on the DBRC) and direct classroom observations using a multi-probe design coded for appropriately engaged behavior (AEB). Levels of disruptive behavior were also analyzed using the number of office discipline referrals (ODRs) per week for each student. Treatment integrity and acceptability were measured using a treatment integrity checklist and a modification of the Intervention Rating Profile – 15 (IRP-15).

Results indicated that both forms of CICO resulted in substantial increases in percent of points earned on the DBRC and higher levels of AEB. Use of DBRC data to inform decision-making, relationship between function of behavior and intervention effectiveness, and efficiency of implementation are discussed. Additionally, limitations and suggestions for future research are reviewed.

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Dean of the Graduate School

December 2012

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## CHAPTER I

### INTRODUCTION

Utilization of prevention-based models in schools to decrease the occurrence of both problem behavior and academic failure has been historically supported (Crone, Hawken, & Bergstorm, 2007; Sprague, Sugai, & Walker, 1998; Walker et al., 1996). With the enactment of No Child Left Behind (NCLB, 2001) and the reauthorization of the Individuals with Disabilities Education Act (IDEA, 2004), schools have become more responsible for demonstrating success for all children served (Mellard & Johnson, 2008).

Under NCLB schools are held responsible for student outcomes, prevention of and intervention for academic deficiencies, demonstration of academic success, and utilization of evidence-based practices and interventions (Mellard & Johnson, 2008). To these ends, schools are now accountable for academic improvements, must demonstrate both an on-going effort to help students achieve success, and must focus on the prevention of academic and behavioral failure. Additionally, schools must also demonstrate that the interventions used are based on “research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs” (NCLB, 2001, p. 540; Mellard & Johnson, 2008).

Considerable overlap exists between NCLB and IDEA as related to intervention efforts, as both mandate focus on improving educational outcomes for all students by allowing access to early intervention and progress monitoring services; insuring accountability in the instructional process; engaging in the delivery of scientifically-based interventions and instruction; and employing highly trained teachers (Fletcher, Coulter,

Reschly, & Vaughn, 2004; IDEA, 2004; Mellard & Johnson, 2008). The reauthorization of IDEA also mandates that all persons from birth through age 21 have access to a free and appropriate public education within a least restrictive environment (IDEA, 2004). This mandate has significant implications for Individualized Education Plan (IEP) development, specifically as related to the use of empirically-based programming for individuals with disabilities.

In practice, these laws have resulted in a system in which schools are held accountable for the success of their students, and every school must demonstrate due diligence in ensuring that each student is provided the opportunity to succeed in an appropriate (least restrictive) academic setting. Further, it is no longer considered acceptable that a school waits for a student to fail prior to providing access to intervention resources. Lastly, the school must demonstrate not only the utility of the intervention based on literature and current bodies of research, but must also support, through progress monitoring and data systems, that the intervention in place has been effective with the individual student. Combined, these federal mandates help to equalize educational opportunities for every student and hold schools accountable for designing curricula, educational environments, and interventions that are appropriate, adaptable, and beneficial for every student.

While it may seem that there is a new emphasis on academic and behavioral intervention efforts for students at risk, it is important for the reader to understand that these efforts began in response to concerns associated with the identification of students suspected of having learning disabilities. Historically, a *wait to fail* discrepancy model has been used to identify children in need of additional educational supports (Aaron,

Joshi, Gooden, & Bentum, 2008; Fletcher et al., 2004; Kavale & Spaulding, 2008; Klassen, Neufeld, & Munro, 2005; Turnbull, 2009). Use of this model meant that children were often required to experience academic failure to a *significant degree* before appropriate intervention efforts were engaged. In practice, this meant that intervention was not available until there was sufficient failure that resulted in a discrepancy between what the student was thought to be able to accomplish as evidenced through measures of cognitive ability, and what he or she actually accomplished as evidenced through measures of academic achievement. Essentially, the difference between a student's cognitive ability and the product output must be more severe than would be expected (i.e. a 15-point discrepancy between IQ and Achievement measures on a standardized test, Fletcher et al., 2004). As task demands increase in progressive years of schooling, students in need of additional supports will demonstrate increasing discrepancies between IQ and Achievement if those supports are not given.

The adherence to using the discrepancy model may be because this model has allowed schools some latitude when determining educational placement, has not mandated certain levels of intervention (Turnbull, 2008) and has been shown to be able to identify students in need of additional services (Kavale & Spaulding, 2008). However, the practice of waiting for a child to demonstrate a discrepancy between ability and achievement is no longer considered appropriate practice and may not be resource-efficient. Withholding services prior to qualifying for special education may be problematic, particularly since lack of academic exposure may artificially increase the number of children who are identified (Fletcher et al., 2004). Special education services are more costly in terms of time, resources, and funding when compared to regular

education and may ultimately be more restrictive than what was necessary for student success (Turnbull, 2008). By waiting for the student to fail, schools are not entertaining the option of enhancing instructional opportunities or providing early intervention that may prevent special education placement (Fletcher et al., 2004). Additionally, by waiting for a student to fail, schools run the risk of wasting limited resources on students who may have responded to less intensive levels of intervention and may potentially exacerbate academic discrepancies.

Beyond academic considerations, schools have faced many other obstacles while attempting to offer appropriate education. Increased problems with discipline, school violence, and high dropout rates among students with behavioral issues (Colvin & Kame'enui, 1993) have become some of the greatest educational concerns. Students with behavior problems have historically been shown to be more likely to dropout (Jones, 1993). Furthermore, students who drop-out have demonstrated increased negative outcomes including increased potential for delinquency, poor earning potential, increased likelihood for engaging in violence (Walker et al., 1996), and an increased rate of incarceration within three years of leaving high school (Colvin & Kame'enui, 1993). Early responding to both academic and behavioral difficulties may decrease the dropout rate and conversely minimize the long-term negative impacts. Use of the discrepancy model does not allow for early response or intensive interventions prior to eligibility determination. Additionally, a survey published in 2002 by the National Center for Learning Disabilities indicated that both teachers and parents felt that the discrepancy model of identification took too long to identify children who were in need of additional help and, in turn, withheld potential intervention. Both parents and teachers reported that

they felt the identification process needed to be improved (Fletcher et al., 2004).

Delaying intervention until student behavior and/or academic failure reaches a clinically significant level may exacerbate negative outcomes and diminish the opportunity to effectively engage the student.

Taking these concerns into consideration, a better practice may be to intervene when there is emerging evidence that a student is not responding appropriately to the curriculum and/or universal behavioral supports. By intervening earlier, schools may decrease educational frustration for the student and minimize the intensity of intervention services necessary to affect meaningful change. Fortunately, waiting for a student to fail is not the only option available to schools for identifying students in need of additional academic/behavioral services. Schools are also able monitor student progress and track potential academic and behavioral problems through Response to Intervention (RtI) methods (Aaron et al., 2008; Fletcher et al., 2004; Kavale & Spaulding, 2008; Klassen et al., 2005; Mellard & Johnson, 2008; Turnbull, 2009). RtI refers to a process by which schools identify children who are at risk of academic failure or have significant behavioral issues; intervene by providing additional instruction or behavioral intervention prior to failure; and help to ensure that the most appropriate intervention is being used to have the greatest impact on learning for the student.

### Response to Intervention

Walker et al. (1996) initially described a three-tier model that included universal (Tier I), secondary (Tier 2), and tertiary (Tier 3) levels of intervention for academics and behavior, often referred to as a response-to-intervention (RtI) model. RtI ensures that all students within the school have access to evidence-based instruction or intervention

(Barnes & Harlacher, 2008). Through the use of RtI methods, appropriate placement can be achieved using early identification/intervention and evidence-based practice, while maintaining the integrity of the special education system and increasing efficient use of resources (Mellard & Johnson, 2008).

Research has shown that schools can reduce the rate of students in need of additional services by having adequate Tier 1 and Tier 2 services (Barnes & Harlacher, 2008; Mellard & Johnson, 2008). Tier 1 interventions refer to behavioral support systems or research-based instruction of high quality that is developmentally appropriate and applied to all students (Mellard & Johnson, 2008; Todd, Campbell, Meyer, & Horner, 2008). Universal interventions may include curriculum planning for academics and school-wide Positive Behavior Interventions and Supports (PBIS) for behaviors. When implemented appropriately, it is estimated that approximately 80% of students who are exposed to Tier 1 efforts do not require additional interventions. Effective Tier 1 interventions potentially reduce the number of students identified as in need of additional, more-individualized interventions (Horner & Sugai, 2002; Walker, Horner, Stage, & Blum, 2005).

Even with adequate universal interventions, approximately 20% of the student population will require additional support. Tier 2 interventions are implemented for students identified at risk for more severe academic or problem behavior (Todd et al., 2008). Tier 2 interventions are more intensive and individualized compared to universal instruction. These interventions are evidence-based and are typically delivered in small-group settings (Mellard & Johnson, 2008). Approximately 10-15% of students may



respond to Tier 2 interventions, leaving 1-5% of students in need of the most intensive interventions (i.e. Tier 3; Walker et al., 2005).

Tier 3 interventions are for the students who are unresponsive to primary and secondary level intervention efforts and are in need of more intensive and specialized strategies. These interventions must be research-based, specific to the referral concerns of the student and are most often individually administered and included in an IEP (Mellard & Johnson, 2008; Todd et al., 2008). Some RtI models consider Tier 3 to be a special education placement and may include some level of removal from general education and/or placement into special education or self-contained classrooms, whereas, others consider Tier 3 to be the level of intervention just prior to consideration for special education placement (Mellard & Johnson, 2008).

As the intensity of the intervention increases, so does the cost of resources to the school. From the standpoint of efficiency, addressing the needs of the majority of students through universal efforts may result in fewer students requiring specialized interventions. Following the same logic, targeted (i.e., Tier 2) interventions may be highly effective at diminishing academic and behavior problems and therefore, reduce the number of students in need of more intensive procedures (Crone, Horner, & Hawken, 2003; Todd et al., 2008).

RtI has been shown to be effective at early detection of students who are at risk for more significant problems. Mellard and Johnson (2008) discussed five key components of RtI that make it a strong model for academic intervention. First, RtI includes high-quality, research-based academic instruction to alleviate referrals of children to special education, and teachers continually assess the effect of instruction on

students' performance. Second, RtI involves universal screening that allows schools to identify children who are "at-risk" of academic failure. Universal screening, which involves measuring direct and targeted skills three times per school year, is a fundamental component of RtI in that it allows for schools to identify children before they exhibit significant problems. Third, Mellard and Johnson (2008) also recommend progress monitoring at all levels to identify children at Tier 1 who are not responsive to universal processes and to progress monitor and determine the effectiveness of interventions for Tiers 2 and 3. Fourth, Tier 2 and 3 interventions should be research- or evidence-based. Use of such practices complies with both NCLB and IDEA. Finally, RtI systems should have in place measures of treatment fidelity. The assessment of treatment fidelity could contribute to intervention effectiveness as researchers have observed improved student outcomes when interventions are implemented as designed (Mellard & Johnson, 2008).

The primary application of RtI has been with academics (Hawken, Vincent, & Schumann, 2008; Mellard & Johnson, 2008). However, current research indicates that RtI is also beneficial for reducing problem behaviors and improving social outcomes for students (Hawken et al., 2008). The current literature indicates that there are multiple implications and benefits for the use of a RtI model to address behavioral concerns. However, Hawken et al., (2008) suggest that further research must be conducted before establishing a link between behavioral outcomes and academic success with a reduced rate of referral to special education. Schools are certainly faced with a unique dilemma when defining what qualifies a child in need of more intensive services for behavioral issues. There are national cut-off scores that are available for most academic screening, but problem behaviors tend to be defined in a context-specific manner and are therefore

harder to define in terms of normative data (Hawken et al., 2008). Many schools use the measure of office discipline referrals (ODR) as an indicator of problem behavior, while other markers of at-risk behavior may include truancy, tardiness, and poor academic performance (Hawken et al., 2008).

RtI holds promise as a process for addressing students at risk for behavioral problems, especially as related to early identification of students in need of additional services (Hawken et al., 2008; Sugai & Horner, 2002; Walker et al., 1996). There are several presumed advantages for schools and students when an RtI model is incorporated. For one, there may be a reduction of teacher-initiated referrals for special education. Additionally, inherent with implementing RtI, there is a focus on the delivery of quality instruction from qualified personnel with an emphasis on instructional outcomes. There is also a reduction of reliance on standardized IQ and achievement tests, and decreases in students referred for special education who simply had a lack of exposure to high-quality academic instruction/intervention (Mellard & Johnson, 2008). These benefits may be even more apparent when PBIS systems are introduced (Crone et al., 2003) as a Tier 1 effort.

As there continues to be a growing concern in education regarding the negative impact of delinquent behavior on academic outcomes, the focus of developing systems that offer early and appropriate intervention has become more important. RtI has the potential to become an important fixture in school policy and design and has become increasingly salient since the reauthorization of the IDEA in 2004 (Cheney, Flower, & Templeton, 2008). As RtI becomes more widely used in schools, the advantages of its use will become more apparent.

Currently, IDEA permits the use of RtI for identification of students, but it is not mandated (Klassen et al., 2005; Turnbull, 2009). While the discrepancy model is still considered to be an appropriate means of determining special education eligibility, RtI may be a superior alternative for the reasons reviewed above. Furthermore, school districts are potentially in a precarious position due to the current federal mandates. Demands for accountability of student outcomes have increased, without the provision of additional resources necessary to meet these demands. To these ends, it is important that a system for identifying students who are at risk be both accurate and efficient in time, effort, and cost.

Schools have been increasingly adopting an RtI model as an alternative to the discrepancy model for identifying students who are at-risk, developing appropriate interventions, and monitoring progress. There are several presumed advantages to using the RtI model, one of the most important being the ability to “catch” students prior to needing more intensive interventions thereby decreasing the impact on taxed school resources. PBIS has become an increasingly popular Tier 1 behavior approach utilized by school districts (Crone et al., 2003). PBIS systems help schools provide levels of support based on behavior and social/emotional need (Walker et al., 2005). Schools that implement PBIS with fidelity tend to observe improved student outcomes (i.e. increased academic engagement, on-task, prosocial behaviors) and lower rates of problem behaviors (Carr et al., 1999; Sugai, 2001; Sugai & Horner, 2001).

Substantial literature exists regarding universal behavioral strategies allowing clinicians to have ready access to evidence-based practice. However, the literature-base for Tier 2 and 3 interventions, while improving, is lacking. The incorporation of well

documented and research-based secondary interventions is imperative to decrease the number of children who will require more intensive interventions or be inappropriately referred for special education services. This is especially important given that only 1-5% of the student population is estimated to need Tier 3 intensive intervention services; however, this small percentage of the population has been shown to account for up to 50% of the teachers and administrators time (Cheney et al., 2008). Taking this, as well as the state of educational funding and the responsibility schools have to educate within a least restrictive environment, it is imperative that researchers develop time and resource efficient intervention strategies to address the needs of students who failed to respond to the Tier 1 strategies in efforts to prevent the necessity of Tier 3 interventions. Daily Behavior Report Cards (DBRC) and Check-In/Check-out (CICO) are both examples of empirically-supported Tier 2 interventions. Researchers have reported improved student outcomes following implementation of both DBRCs and CICO for problem behaviors and academics leading to a diminished need for more intensive intervention (Crone et al., 2003, Filter et al., 2007; Hawken, Horner, & Todd, 2005).

#### Daily Behavior Report Card

Because the DBRC is an integral part of the CICO process, it is important to review the methodology and relevant research of the DBRC. DBRCs are a Tier 2 intervention strategy in which a teacher rates the student's adherence to a set of target behaviors and gives periodic feedback regarding the display of those behaviors to the student throughout the school day (Chafouleas, Riley-Tilman, & McDougal, 2002). DBRCs are flexible and can be used across settings, raters, and behaviors (Chafouleas et al., 2002; Vannest, Davis, Davis, Mason, & Burke, 2010). Though there is not a specific

format for DBRCs, certain features include the identification of specific behavior(s), a rating criterion, collection of data and feedback regarding the behavior(s), and sharing of the information between school and home. Chafouleas, McDougal, Riley-Tilman, Panahon & Holt (2005) identified a minimum of two criteria for an intervention to be considered a DBRC: 1) an identified and defined behavior was measured (at a minimum) daily and 2) the information gathered was shared with others.

Historically, the DBRC has been thought to increase the quality of contact between home and school, potentially improving a student's social and behavioral outcomes (Vannest et al., 2010). Originally developed as a "checklist" for student behavior that was tied to home-based reinforcers (Edlund, 1969), DBRCs have been found to be resource and time efficient as there is not a need to engage in extensive parent/teacher training to implement this intervention with integrity (Barth, 1979). Review of the literature indicated DBRCs result in positive outcomes for students across behaviors, settings, and method of implementation (Vannest et al., 2010) and have been shown to be increasingly effective when tied to a salient reinforcement system (Atkinson & Forehand, 1979; Smith, Williams, & McLaughlin, 1983). DBRCs can be used as a "stand-alone" intervention but are often part of a multicomponent package that allows for multiple forms of reinforcement including access to positive attention, tangibles, and other reinforcers (Chafouleas, Riley-Tillman & Sassu, 2006; Chafouleas et al., 2005; Chafouleas et al., 2002; Vannest et al., 2010).

The use of the DBRC has been established as a viable Tier 2 intervention. The DBRC may also have utility as part of the assessment process. As schools become more focused on early intervention and progress monitoring, educators are in greater need of

assessment tools that are both efficient and effective, particularly in the area of measuring social behavior (Fuchs & Fuchs, 2006). While the use of Curriculum Based Measures (CBM) to evaluate academic performance has been widely documented, the research on the appropriate measures of social behavior is still somewhat limited (Hintze, 2005; Riley-Tillman, Chafouleas, Breisch, & Eckert, 2008). The DBRC may be used as an alternative to or in conjunction with systematic direct observation (SDO) of behaviors. While forms of the DBRC have been present in the literature for the past 4 decades, only recently have they been analyzed as a data collection tool (Chafouleas et al., 2005; Steege, Davin, & Hathaway, 2001). Data gathered from a DBRC may not only allow for an interventionist to determine whether or not a student meets criteria to access reinforcement (e.g. as a token economy system), but also provides permanent product data that allow for on-going assessment across behaviors, settings, and raters thus lending it a useful tool in monitoring the progress of other interventions.

Historically, behavioral assessment data have been gathered through multiple means including permanent products, rating scales, and SDO. Riley-Tillman, Chafouleas, and Briesch (2007) reviewed guidelines for the collection of data and recommended that data collected are formative; behaviors should be frequently monitored; and the information gathered should be used to determine the most appropriate intervention. While SDO is considered the “gold standard” of collecting behavioral data, it may not always be a practical option for school districts (Chafouleas, 2011; Riley-Tillman et al., 2007). More specifically, direct observations may be time-consuming and may compete with the multiple demands faced by teachers, school psychologist and other interventionists. Additionally, SDO requires trained personnel in

order to reduce observer error. Finally, SDO may be adversely impacted due to observer reactivity. While SDO certainly provides important information and should not be completely replaced, schools are in need of an option that is more resource efficient, yet can be trusted to provide accurate information (Chafouleas et al., 2005; Chafouleas, Riley-Tillman, Sassu, LeFrance, & Patwa, 2007). These conclusions were echoed by Chafouleas in 2011 and were identified as part of the push behind the development of the Direct Behavior Rating (DBR), a form of the DBRC. In a 2011 review of the development of the DBR, Chafouleas reported that behavioral assessments have been predominantly conducted using norm-referenced behavior rating scales and/SDO. She argued that while these forms of assessment were useful and provided the assessor with valuable and detailed information, they were not without limitations. Specifically, Chafouleas (2011) stated that norm-referenced behavior rating scales might not be sensitive enough to measure small, but meaningful changes, and therefore neither contextually relevant nor appropriate for progress monitoring. On the other hand, Chafouleas (2011) stated that while SDOs are sensitive to change, contextually relevant and an appropriate tool for progress monitoring, they are limited in that conducting appropriate and accurate SDOs requires intensive training and, at times, may not be an option for a teacher to conduct *in vivo* when considering time constraints and environmental demands (Chafouleas, 2011).

Recent studies have supported the utility of a DBRC in supplying useful and accurate data while diminishing the impact of reactivity to observers (Chafouleas et al., 2005; Chafouleas et al., 2007; Riley-Tillman et al., 2007). Behavioral data gathered from the DBRC can serve as not only an indicator of the effectiveness of a particular



intervention, but also serve as an effective way to measure behavioral outcomes of intervention processes implemented for students determined to be in need (Hawken et al., 2008; Riley-Tillman et al., 2007).

Chafouleas et al., (2007) compared SDO to the DBRC for assessing on-task behavior. The participants in the study were three sets of teacher-student dyads. Teachers were randomly selected to participate in the study, and each teacher was asked to nominate a student to participate who was having difficulties remaining on-task. On-task was defined as the student being actively engaged in instructional activities or “oriented” towards the teacher (i.e. paying attention to the teacher at appropriate times (Chafouleas et al., 2007).

Using a script during training procedures, the researchers trained teachers on the use of the DBRC during a single session. During this training session the authors reviewed the definition of on-task behavior and discussed behaviors that would earn a point (i.e. on-task behavior). Teachers were instructed to select the rating on the DBRC that “best described” the student during 15-min intervals.

Direct observations were conducted using a 20-second momentary time-sampling procedure for 15 min (Chafouleas et al., 2007). During all observation periods, a teacher and two trained observers collected behavioral data. The teacher and one observer completed the DBRC, while the second observer conducted direct behavioral observations (Chafouleas et al., 2007). Following baseline, a multicomponent intervention that included performance feedback and praise was implemented. During this phase, the student received feedback from the researcher based on the teachers’

ratings of behaviors on the DBRC. Students were provided with praise for meeting behavioral goals (Chafouleas et al., 2007).

Based on the results there was congruence between the teachers' ratings of students' behavior using the DBRC and the data obtained through direct observations, suggesting that the DBRC may be a viable option for gathering data regarding classroom behavior (Chafouleas et al., 2007). These findings have potential implications in that the DBRC can serve as a time and resource efficient strategy to collect behavioral data with relatively high integrity (Crone et al., 2001).

Riley-Tillman et al., (2008) conducted two surveys of 191 school psychologists who were affiliated with the National Association of School Psychologists (NASP), to determine the overall use, prior training, and acceptability of the DBRC and SDO, as well as the impact that SDO and DBRC data had on treatment decisions. The authors were interested in whether or not training on specific interventions and data collection methods would have an impact on use, acceptability, and decision-making based on those methods.

In both surveys, a majority of the psychologists worked in public school settings (83.7% and 88.9%), were female (76.1%, 74.7%), held a Masters plus 30 hours (48.9% and 41.4%), and worked across a wide array of grades. When comparing level of training received for the DBRC and SDO, the authors found that psychologists reported higher levels of training in SDO in comparison to the DBRC although a majority, 41.3% and 46.5%, of the participants reported moderate training on the DBRC. Significant correlations between reported training and reported use of the DBRC were found ( $r = .55$  for both studies). These findings suggested that use of the DBRC increased as a function

of amount of training received. Similar findings were found for SDO ( $r = .60$ ;  $r = .45$ ). The authors also found moderate levels of acceptability for each measure, and school psychologists did not consider either to be highly intrusive (Riley-Tillman et al., 2008).

Riley-Tillman et al., (2008) also evaluated whether or not the psychologists made different decisions based on how data were presented. In the first study, two simulated cases were designed, and the participants were asked to use the data presented to make one of the following decisions: (a) continue with no change, (b) continue with change, or (c) discontinue. In the second study, two real cases were used, and the participants were asked to make the same decisions. The results suggested that the data from both the DBRC and SDO were used similarly in decision-making. More interestingly, even participants who reported little to no formal training on the DBRC used the information in a similar manner. This finding suggested that the behavioral data gathered from the DBRC might be useful in making treatment decisions even without extensive training on procedures (Riley-Tillman, 2008).

The Daily Behavior Rating was developed as a behavioral assessment tool combining some of the strengths of norm-referenced behavior rating scales with the strengths of SDOs, while addressing some of the limitations of each method (e.g., contextual relevance, ease of implementation, sensitivity to change and usefulness in progress monitoring; Chafouleas, 2011). When developing the DBR, various components were directly measured, while others had been developed after review of existing literature. The following components have been assessed by either direct experimentation or literature review: scale (i.e., including number gradients, use of

qualitative anchors, indicators of behaviors rated, and visual display), behavioral targets, rating procedures, and rater training.

While studies conducted on the DBR scale did not suggest substantial differences regarding the accuracy of ratings, (Briesch, Kilgus, Chafouleas, Riley-Tillman, & Christ, 2011; Chafouleas, 2011; Chafouleas, Christ, & Riley-Tillman, 2009) results indicated that a minimum of six indicators (rating 0-6) were necessary and that 10 (rating 0-10) was easiest for interpretation and visual analysis (Chafouleas, 2011). A review of behavioral targets identified what Chafouleas (2011) referred to as the “Big 3”: academic engagement, respectful, and disruptive. Chafouleas suggested that targeting these behaviors using a DBR would be an effective way of measuring general outcome measures (GOM), thus lending itself to effective progress monitoring. While these behaviors may be considered an appropriate general measure of universal expectations within a school, using school-specific behavioral expectations (e.g. universal rules that have been identified by a school through PBIS implementation) in relation to meaningful behavioral change using a DBRC has not been measured. Chafouleas (2011) reported that rating procedures on the DBR seem to be flexible and adaptable to a specific setting, allowing for this measure to be contextually relevant. Finally, rater training does not have to be extensive and should simply consist of a clear review of expectations, practice and feedback and behavioral examples directly related to the range of the rating scale (Chafouleas, 2011).

The DBRC is a highly adaptable intervention strategy that can be tailored to address a wide range of behavioral concerns. Additionally, the DBRC has garnered support as a means of collecting behavioral outcome data that can be used for progress

monitoring and data-based decision making. More current strategies have incorporated the DBRC as part of a multi-component treatment package. CICO is one treatment package that commonly incorporates the DBRC as a component. The addition of CICO helps to standardize the DBRC process and allows for teachers and staff to increase the monitoring and feedback throughout the day. If implemented with fidelity, CICO also allows for predictable times during which the student accesses reinforcement at school and home (Todd et al., 2008).

#### Check-In/Check-Out

Check-In/Check-Out (CICO) is a time and resource efficient Tier 2 behavioral intervention strategy that incorporates a DBRC. Researchers have reported improved student outcomes following implementation of CICO for students who did not respond to the universal Tier I efforts. Specifically, researchers have noted improvements in academic on-task behavior, decreased in ODRs (Hawken & Horner, 2003; March & Horner, 2002) and increases in appropriate behavior (Todd et al., 2008).

CICO works in conjunction with the DBRC. Sometimes referred to as a Behavior Education Plan (Hawken & Horner, 2003), CICO provides students with clear behavioral expectations in the morning and systematic feedback on DBRC ratings throughout the day as well as at the end of each day. Additionally, students gain access to reinforcers at the end of the day in response to the display of appropriate behavior (Hawken, McLeod, & Rawlings, 2007; McCurdy, Kunsch, & Reibstein, 2007). In addition to being a relatively simple, inexpensive, and effective Tier 2 intervention, CICO has been shown to have relatively high levels of teacher and staff acceptability (McCurdy et al., 2007).

The design of CICO is a relatively simple, structured routine where students “check-in” with designated school personnel who served as a CICO Coordinator upon arriving at school. At the time of “check-in”, the student reviews his or her behavioral goals for the day, discusses strategies he or she can use to meet those goals, and reviews the target criterion required to access reinforcement at the end of the day. The student is instructed to remind teachers to rate the students’ target behaviors on the DBRC at naturally occurring points during the day that have been established by consultation with teachers and staff (e.g., before recess, lunch, and transition times). Throughout the day, the student receives feedback on his or her behavior in the form of points or checks marked on the DBRC. Additionally, during rating times, teachers are prompted to give quick verbal feedback in the form of praise or simple, positively stated redirection contingent on student performance. This process occurs throughout the entire school day at the conclusion of each recording period. At the end of the day, the student then “checks-out” with the CICO Coordinator and the points earned on the DBRC are tallied and totaled. The CICO Coordinator then determines whether or not the student met his or her point goal for the day, and the selected reinforcers are delivered if the goal is met. If the student has not met his or her point goal for the day, the CICO Coordinator reviews strategies to help the student meet the behavioral expectations the following day and offers words of encouragement such as *I know you can do better tomorrow!* or *I know you had a rough day, but tomorrow starts brand new.* Hawken et al., (2005) suggest that if the child seems to be frustrated, it is appropriate to listen to what he or she has to say and point out where they can improve the following day.

The final step in the CICO procedure involves completing a home note to facilitate communication between the school and home. Specifically, the home note informs the student's parents/guardians about the progress made towards obtaining points during the day. Parents are instructed to provide reinforcers (e.g., attention, edibles, tangibles) for meeting daily goals at home and are encouraged to review strategies to help the student improve his or her behavior the following day. It is typically recommended that the parents do not punish the child for failing to meet his or her point goal, but rather reinforce appropriate behavior (Hawken et al., 2005). The student is instructed to obtain the parent's signature on the home note and return it the following morning. The CICO process begins anew the next morning when the student "checks-in" and hands in his or her signed home note (Crone et al., 2003; Todd et al., 2008).

CICO is useful because it can be applied in all class settings, using multiple raters (i.e., teachers, staff), and allows for increased access to teacher and staff attention and feedback. When used in conjunction with the DBRC, CICO allows for systematic and immediate feedback regarding progress towards meeting target behaviors throughout the day as well as progress monitoring data. Further, systematic delivery of reinforcers for appropriate levels of target behavior helps to assure that students are receiving appropriate feedback and positive reinforcement or acknowledgement for appropriate behaviors (Todd, 2006). The home/school component has been historically cited as being an important aspect of CICO, as it ideally allows access to further positive attention at home for appropriate behaviors displayed at school. More recent studies have shown that treatment fidelity with this particular aspect does not necessarily have to be high for a

student to make appropriate gains in level of appropriate behavior (Filter et al., 2007) and questions remain as to whether it is a critical and necessary component.

CICO increases the structure of the feedback sessions in which the child reviews their performance on the DBRC (McCurdy et al., 2007; Todd et al., 2008). According to Todd and colleagues, if implemented correctly, the DBRC provides prompts for the student to engage in appropriate behavior, provides feedback on behavior throughout the day, functions as a system of data collection, and serves as a communication link between school and home.

In their 2008 study, Todd et al., assessed whether or not there was a functional relationship between CICO and a reduction in subsequent problem behaviors. The study was conducted in a rural elementary school located in the Pacific Northwest that had been administering school-wide behavioral intervention programs for a three-year period. Four students were selected to participate in the study based on administrator and teacher referral for high levels of inappropriate behavior indicated by ODRs that were not attenuated following universal intervention. Trevor was a Native American male in third grade and in special education who engaged in noncompliance, work refusal, refusal to respond to adults, and hiding under furniture. Chad was a Caucasian male in first grade who engaged in disruptive behavior (including talking to peers, and talking out) during instructional periods. Kendall was an African American male in second grade who engaged in disruptive behavior during instructional periods (tapping on desk, poking at peers, inappropriate vocalizations and giggling). Eric was a Caucasian male in kindergarten who engaged in disruptive behavior (e.g., inappropriate vocalizations) during circle time (Todd et al., 2008).



Prior to the implementation of CICO the authors conducted the Functional Assessment Interview (FAI) with teachers, and direct A-B-C observations to aide in the development of hypotheses of function of behavior. Based on the information gathered, the authors hypothesized that all students' behaviors were maintained by access to adult attention, that Trevor's behavior was additionally maintained by escape from task demands, and that Kendall's behavior was additionally maintained by access to peer attention (Todd et al., 2008).

Behavioral observations were conducted three to four days per week using a 10-s partial-interval recording method and were 20 min in length. Coded problem behaviors included (a) being in the wrong location, (b) talking out, (c) noncompliance, (d) talking to peers, (e) disruptive, and (f) negative physical or verbal interactions. Additionally, four peers were nominated by teachers as having a lower rate of occurrence of behavior problems in the classroom and were used as comparisons. In addition to direct behavioral observation, ODRs were calculated to also determine whether or not CICO helped to decrease disruptive behavior. This study was conducted over a 10-week period during the school year using a multiple-baseline design across participants (Todd et al., 2008).

Based on the review of the results, it was indicated that in baseline all four participants engaged in inappropriate levels of problem behavior at higher percentages than peers. After implementation of CICO there was a 16%, 18%, 19%, and 15% decrease in percentage of inappropriate behavior for Trevor, Chad, Kendall, and Eric, respectively, as compared to baseline. Additionally, the average number of ODRs per day dropped to 0 for Chad, Kendall, and Eric. Trevor's daily ODR rate did not drop

significantly (from 0.17 in baseline to 0.16 following implementation of CICO; Todd et al., 2008).

Todd et al., (2008) also found that teachers rated CICO as acceptable for classroom use stating that there were meaningful decreases in disruptive behavior for those students involved in the intervention. The teachers also reported that CICO was relatively easy to implement and that they would recommend CICO to others dealing with students who demonstrated problem behaviors not attenuated by Tier 1 efforts.

While Todd et al., (2008) gathered data regarding the hypothesized function of student behavior for their study, they were not an integral part of what they were manipulating. All of the students' inappropriate behaviors were, at least in part, maintained by access to attention. Whether or not this was a factor in the effectiveness of the intervention was not directly manipulated.

McLeod (2007) evaluated the effects of the BEP to assess whether the program would have desired effects on problem behavior in the school. The BEP was administered to 12 students, and the effects of the program were analyzed utilizing a pre-and-post assessment of ODRs. The author found that following the implementation of the BEP, the rates of ODRs were lower for all but three students. These findings support other conclusions that the BEP is an effective Tier 2 intervention that can result in a decrease in disruptive behaviors as measured by ODRs.

The author hypothesized that the behavior of three of the students did not change because the inappropriate behavior was not maintained by access to attention. However, they failed to identify the function of behavior for any of the students participating in the study. It is possible that the behavior of those three students was not maintained by

access to attention, which may have affected treatment effects. It is conceivable that these students simply required more intensive interventions. Since BEP/CICO systematically increases access to adult attention, it has been suggested that it is an intervention that is most appropriate for behaviors maintained by attention (McLeod, 2007). As with Todd et al. (2008), the utility of CICO for students who have behaviors maintained by escape has not been investigated to any extent, and therefore is largely unknown.

Filter and colleagues (2007) examined CICO to assess whether school personnel could reliably administer the intervention and whether or not the administration of CICO served to alter problem behavior in 19 children. Three elementary schools in the Pacific Northwest were used in this study. Participating schools had PBIS in place and utilized CICO as a Tier 2 strategy. Students were chosen to participate in the study based on teacher and administrator referral due to lack of behavioral progress after six weeks of exposure to school-wide PBIS (Filter et al., 2007).

Two years prior to the initiation of the study, each school participated in a four-hour training in CICO that was conducted over two sessions provided by the district's positive behavior support coordinator. Following the training, schools had been individually responsible for maintaining the intervention and review process. None of the schools had been approached to participate in the study prior to the implementation of CICO. Therefore, the authors concluded that the data were collected in a very naturalistic setting (Filter et al., 2007).

CICO was implemented in five steps including (1) the student "checking in" first thing in the morning with a school official, reviewing target goals and receiving a new

student point card; (2) the student giving his or her teacher the student point card at the beginning of each class period, (3) the student soliciting feedback from the teacher at the end of each class period and receiving points based on levels of appropriate target behavior, (4) the student “checking out” at the end of the school day with a school official, reviewing the points he or she earned that day and receiving appropriate feedback (predetermined reinforcers for obtaining his or her target goal, or constructive feedback about how to do better the following day), and (5) the student being given the point card to take home, with the instruction to have his or her parent/guardian sign the point sheet and return it during “check-in” the following morning (Filter et al., 2007). The authors assessed whether CICO was implemented with fidelity, whether the program resulted in a change in the rate of ODRs, and whether the teachers and staff felt the program was effective. Fidelity of administration was assessed using a five-item checklist to assess whether the students checked-in at the beginning of the day, consistently received feedback, checked-out at the end of the day, whether or not parent notes were reviewed, and whether data that were gathered were used for decision-making. The checklist was completed at a behavior support staff meeting midway through the school year (Filter et al., 2007).

Perceived effectiveness was measured using a six point Likert-scale (1 = poor; 6 = excellent) instrument completed by teachers and administrators. Respondents were asked to rate various domains including ease of program implementation, time and effort requirements of the intervention compared to other programs, student behavioral progress, student progress related to the time and effort required to implement the

intervention, and how important those behavioral changes were perceived (Filter et al., 2007).

All of the schools participating in the study had been conducting CICO for at least one year prior to the implementation of the study. Based on review of the results of the study it was indicated that school personnel were able to accurately administer CICO and that the program had the desired effects on ODRs across two thirds of the students. Eleven teachers, three school administrators, and three other staff members completed the fidelity questionnaire. Of the 17 respondents, all indicated that their CICO program consisted of a morning “check in” and an afternoon “check out”; 16 participants indicated that the students carried the point card to his or her teacher and requested feedback throughout the day; seven participants indicated that they were reliably able to gain parental signatures; and 14 respondents indicated that this information was used to make decisions regarding further student behavioral support. In sum, all of the schools indicated that they appropriately used CICO procedures and used the information to help guide decision making about the individual students, while only 41% of the respondents indicated that they received regular parental feedback (Filter et al., 2007).

Using a paired-samples t-test, the authors compared rates of ODRs for major offenses, minor offenses, and combined major and minor offenses prior to and following implementation of CICO. A significant difference between ODRs prior to and following implementation of CICO was found when major and minor offenses were combined ( $t(11) = 2.24, p = 0.05$ ). Twelve participants were included in this analysis, as seven students did not demonstrate minor offenses. Eight of the 12 students showed a decrease in combined major and minor offenses following implementation of CICO; one student's

level of major and minor offenses increased following implementation of CICO. Three of the students did not demonstrate major or minor offenses during either of the intervention phases. The authors stated that positive results were found since 67% of the students decreased their rate of ODRs, with three students experiencing a 50% decrease. Results for major offenses showed a similar trend, that the rate of ODRs decreased following implementation of CICO, though the results were not considered to be statistically significant. Thirteen of the 19 students showed a decrease in major offenses (68% of participants), six of the 13 students decreased in ODRs for major offenses by 50%. Two of the students demonstrated an increase in major offenses (Filter et al., 2007).

Twelve students were analyzed for their drop in minor offenses per week, and a paired-samples t-test indicated that there was a significant decrease ( $t(11) = 2.38, p = 0.04$ ) in ODRs for minor offenses following the implementation CICO. Overall, eight of the 12 students (67%) demonstrated a decrease in ODRs for minor offenses (1 of which decreased by 50%), and one student increased in ODRs for minor offenses following the administration of CICO (Filter et al., 2007).

The authors noted several limitations of this study. First, measures for fidelity and perceived effectiveness were descriptive and the design did not control for extraneous variables. The schools were in charge of implementing CICO, and the system had already been established. There is little way of knowing other variables that may have affected student behavior, and because the researchers did not control for these, the conclusion that CICO reduced problem behavior should be evaluated with caution. Second, this study had a small sample size that could have potentially affected power.

Third the authors pointed out the validity of ODR data as a measure of behavioral outcomes may be limited by being insufficiently sensitive to change in classroom behavior and has not been directly supported in the literature (Filter et al., 2007). Despite these limitations, the authors demonstrated that CICO may have effectively decreased problem behavior as measured by ODRs with relatively high rates of acceptability. These findings are important in establishing CICO as a viable Tier 2 intervention.

#### Purpose of Present Study

Up until recently, a majority of the CICO literature focused on changes in ODRs as an indication of program effectiveness (Filter et al., 2007; Todd, Kaufman, Meyer & Horner, 2008). Todd et al., (2008) showed that direct behavioral measures were able to depict differences in behavior for all of the students who participated in the study, whereas ODR reports indicated that one of the four students did not show a decrease in problem behaviors as evidenced by ODRs following CICO. In addition to direct behavioral observation and ODR data, data can be readily gathered from an analysis of points earned on the DBRC. Since CICO is used in conjunction with a DBRC, data that have been systematically collected are readily available.

When designed appropriately, CICO is an intervention that allows students to access teacher attention and feedback throughout the entire day. Additionally, CICO requires little teacher and staff effort, creates a home/school link, can be flexible, and is designed so that access to reinforcers is contingent upon engaging in behaviors that are expected of students school-wide (Todd, 2006). Typically, CICO is run in tandem with the DBRC, and the student receives feedback at the end of each recording period in addition to the times when he or she checks-in and checks-out. To date, researchers have

only evaluated CICO in conjunction with a DBRC. Researchers have not evaluated whether CICO alone is effective without consistent feedback from the teacher throughout the school day. It is conceivable that the process of checking-in and checking-out is sufficient to promote student behavior change without teacher feedback via the DBRC throughout the day, thus making the intervention more efficient and less time consuming.

The purpose of the current study was to extend the current literature by analyzing the effectiveness of CICO at reducing inappropriate behaviors for students who have been identified as being in need of additional behavioral supports. This study served to evaluate whether or not CICO was as effective at reducing disruptive behaviors when the student did not review the DBRC at the end of each recording session (thereby, reducing the amount of feedback he or she received during the day and increasing overall intervention efficiency) in comparison to consistent behavioral feedback throughout the school day. Given the current constraints on time, resources, and funding in school settings, a tailored and efficient Tier 2 intervention is imperative. Superfluous requirements in behavioral interventions should be minimized in order to increase efficiency and minimize resource demands.

The dependent variables included both ODRs and percentage of daily points earned (i.e., point data) as gathered through the DBRC. Additionally, SDO using a partial-interval recording procedure was used to measure the percentage of observed intervals which students demonstrated appropriately engaged behavior (AEB). These direct observations were conducted at least 33% of days and were analyzed to determine whether similar trends were seen when compared to point data on the DBRC. While it was not empirically manipulated, the function of the behavior for each student was determined



prior to intervention implementation. Procedural fidelity and acceptability of CICO as a Tier 2 intervention was also measured.

### Research Questions

The following research questions were addressed in this study:

1. Which is more effective in reducing problem behaviors of at-risk referred secondary level students, CICO with or without the DBRC?
2. When compared to direct behavioral observation, will the data generated from the DBRC show similar results?
3. Will CICO be effective for minimizing problem behaviors that are hypothesized to be maintained by a function other than attention?

## CHAPTER II

### METHODS

#### Participants and Setting

This study was conducted at a public school located in the Midwest region of the United States. Instructional staff at the building site had implemented positive behavioral intervention support (PBIS) strategies for over two years. While the extent of student exposure to Tier I strategies was not directly measured, it was important that the students participating in CICO had been previously exposed to universal supports.

Four male middle school students and an instructional coach participated. The students were nominated for participation in the study because they had repeated inappropriate or disruptive behaviors during the school day and also met the following criteria: (a) each had received a minimum of three ODRs over the course of school year; (b) were referred by school personnel for problem behaviors that occurred across multiple settings (i.e., various classrooms, in the hallways, bathrooms and cafeteria) throughout the school day; (c) the behaviors were not considered to be dangerous; (d) the student had not been diagnosed with either an Autism Spectrum Disorder or a severe cognitive impairment; (e) each had been enrolled in the school district for at least one school year; (f) informed consent to participate was obtained for each student from his parent/legal guardian (Appendix A), and (g) the students' teachers agreed to participate and informed consent was obtained for each staff member participating in the study (Appendix B). Approval from the Institutional Review Board of the University of Southern Mississippi and the sponsoring school was obtained prior to recruiting participants (Appendix C).

“Dave”, a 14-year-old, eighth grade general education student with a diagnosis of Attention Deficit Hyperactivity Disorder (ADHD), was nominated for the study following numerous in-school suspensions (ISS), lunch detentions, and failure to respond to other interventions and consequences (e.g., removal of reinforcing items, parent contact, and placing him in ISS to complete class assignments). Teachers described Dave as an energetic and outgoing student who responded well to praise, worked well when they were clear about required tasks and deadlines, but socialized with nearby students. They reported that he had the greatest difficulties during independent seatwork, and unstructured class times, and would sometimes become disrespectful (e.g., raise his voice, say things quietly as teachers talked to him, leave the room without permission) when redirected or corrected by his teachers. Dave’s problem behaviors (off-task, noncompliance, work refusal) identified on the Functional Assessment Informant Record for Teachers (FAIR-T) administered to each of his teachers, occurred multiple times during classes and caused significant disruption to instruction due to his talking with other students. Reported consequences included interruption and redirection of behaviors, reminders, and verbal reprimands. Based on the results of the FAIR-T, it was hypothesized that Dave’s problem behavior was maintained by access to peer and/or teacher attention.

“Joe”, a 13-year-old general education eighth grade student with no reported medical or psychiatric diagnoses, was referred for participation in the study because of numerous ISSs, lunch detentions, ODRs, failure to respond to other interventions and consequences (e.g., parent contact, removal of reinforcing items in-class assigned seating), and to provide him with increased opportunities for positive interactions with

school staff. The principal indicated that, during ISSs, Joe had repeatedly stated that he did not want to be at school, and that his teachers all hated him. Teachers described Joe as quiet and “seemingly unmotivated” to engage in academic/school activities, indicating that he would not freely engage with adults in either academic or nonacademic tasks (e.g., participating in class discussion/answering questions, or engaging in a conversation with a school staff member). He reportedly required repeated prompts to return to task, and his noncompliance and talking was and could be highly disruptive (i.e., getting other students involved in disrupting class activities). When asked about his interactions with peers, Joe’s teachers stated that he had numerous friendships, and would often engage in talking rather than completing assignments. Responses to the FAIR-T indicated that Joe would engage in problem behaviors (off task, work refusal, talking, and non-compliance) multiple times throughout class periods, causing significant disruption. His teachers indicated that he was more likely to engage in these problem behaviors when friends were in the classroom, and when he was asked to participate in academic tasks. Reported consequences included attempts to redirect his attention, and verbal reprimands, but teachers indicated that it was often more effective to send him to ISS. Since the results from the FAIR-T indicated that Joe’s behaviors were more likely to occur during academic classroom tasks, and given that the teachers would often remove him from class to ISS, it was hypothesized that the function of his problem behavior was likely escape from task demand, particularly since his problem behavior increased over time.

“Pete” was a 13-year-old, seventh grade general education student with no medical/psychiatric diagnoses. His teachers described him as a student with “wildly fluctuating” behavior who seemed to have sudden and extreme mood changes (e.g.,

would go from extremely off-task and “jumping around the room,” to suddenly being very solemn or sleeping at his desk). They reported that his behavior was highly disruptive and unpredictable, stating that he had problems interacting with staff and students. His behaviors would quickly escalate when denied a request or redirected in any way. Pete was referred for participation in the study because of numerous lunch detentions, ODRs for “cool-downs” or inappropriate behavior, and failure to respond to other interventions and consequences (including parent contact, in-class “cool-down” strategies, talking to him). According to responses on the FAIR-T, Pete engaged in problem behaviors (e.g., inappropriate vocalizations, work refusal, noncompliance) multiple times throughout the day and caused significant class disruptions. Teachers indicated that his behavior was inconsistent; there were some days that he would not initially engage in problem behaviors, but that academic requests would result in Pete engaging in work refusal and escalating to screaming. These problem behaviors were most often followed by one-to-one teacher attention, and escape from classroom/academic demands. Reported consequences included attempts to interrupt, redirect, or prompt him to use a “cool-down” strategy (described as talking to him outside of the classroom), but teachers reported that it was “very hard” to calm him once he was agitated, and that his behavior was unmanageable. Results from the FAIR-T indicated that Pete’s behaviors were more prevalent during academic and social demands, when he was told “no,” or when academic tasks became difficult. Thus, it is hypothesized that the function of his problem behavior was likely escape from task demand and access to teacher attention.

“Ross” was a 12-year-old, sixth grade general education student who had not been identified as having any medical or psychiatric diagnoses. His teachers described him as an easily distracted student who was often “sullen” and did not like to be called on in class. According to teacher reports, Ross frequently failed to bring necessary materials to class, engaged in talking with peers rather than appropriately remaining on-task, and pulled nearby students into conversations rather than working on assigned tasks. He was referred for participation in the study due to multiple lunch detentions, ISS, and failure to respond to other interventions (including preferential seating, alternate assignments, removal of reinforcement, and study-buddies). Responses on the FAIR-T indicated that Ross engaged in problem behaviors (off-task, talking, and noncompliance) multiple times throughout class periods, but more often during academic tasks that involved independent or small-group work. He worked best in one-on-one situations with the teacher or other adult. Reported consequences included teacher and peer attention and alternate assignments to complete in ISS. Results from the FAIR-T indicated that Ross’ behaviors were more likely to occur in the presence of academic tasks with peers, and suggest that his behaviors may have been maintained by escape from task demand and access to peer and teacher attention.

Prior to implementation of CICO, each of the students were asked to nominate three teachers or staff members that they would like to serve as the CICO coordinator. Mr. Franks was identified by all four participants and was selected to participate based on (a) availability in the morning and afternoon to participate in CICO procedures, (b) an ability to interact positively with the student, and (c) a willingness to participate and

follow CICO procedures. Informed consent was obtained from Mr. Franks (Appendix B) by the primary researcher.

“Mr. Franks” was a 26-year old coach who served as the ISS coordinator and oversaw morning and lunch detention at the school. Mr. Franks was a certified teacher who had 4 years of teaching experience in a regular education setting. Mr. Franks had previous exposure to the students through ISS and detention, and each of the students reported having a good relationship with him. Mr. Frank’s role as the CICO coordinator was to facilitate the process of “checking in” in the morning and “checking out” in the afternoon. Further, he was responsible for reviewing points for the day with each student, discussing strategies for obtaining the point goal, reminding the student of the reinforcers he would have access to once point-goals were met, adjusting point goals in consultation with the primary researcher based on levels of behavior, ensuring that the student or his teachers received a new DBRC each day, calculating the points at the end of the day, and administering feedback and/or reinforcers based on total points earned on the DBRC.

### Materials

#### *Functional Analysis Informant Record for Teachers (FAIR-T).*

Prior to intervention, the Functional Analysis Informant Record for Teachers (FAIR-T, Appendix D) was administered to each of the student’s teachers. The FAIR-T took approximately 30 min to complete and was used to identify target behavior(s), the environment in which these behaviors occur, and the potential maintaining consequences of the behavior(s) (Edwards, 2002). To date, studies have supported the use of the FAIR-

T in such a manner (Doggett, Edwards, Moore, Tingstrom, & Wilczynski 2001; Dufrene, Doggett, Henington & Watson, 2007; Edwards, 2002).

*Daily Behavior Report Card.*

A DBRC (see Appendix E) was filled out by the teacher during natural transition times throughout the school day or during agreed upon periods based on consultation with the primary investigator. Each transition time marked the end of the recording period during which the teacher marked whether or not appropriate levels of each target behavior occurred. The length of the target behavior recording time was approximately equal throughout the day.

For the purposes of this study, the DBRC used a 10-point rating similar to methods described of the DBR (Chafouleas, 2011), the respondent rated a participant on a target behavior after an established period of time using a 0-10 rating scale (0 = “never”, 5 = “sometimes”, 10 = “always”). The DBRC included three overall target behaviors that corresponded with the school-wide PBIS expectations including: “Trustworthy/Responsible”, “Respectful/Fair” and “Caring/Citizenship.” Each of these overall target behaviors included descriptive behavior subsets (e.g. “follow directions, complete assignment notebook, complete and turn in work” under “Trustworthy/Responsible”; “positive interactions, follow class rules, use appropriate language/talk at appropriate times” under “Respect/Fairness”; and “manage class time, have appropriate materials, participate in discussion” under “Caring/Citizenship”) for the student and a point system indicating how well the student did for each of the target behaviors during the behavior recording period with a maximum total of 30 points earned during each instructional period.



*Behavioral Definition/Point Value Sheet.*

The behavioral definition and point value sheet (Appendix F) was given to the CICO coordinator and every teacher during DBRC training. The definition and point value sheet included the behavioral definitions of the target behaviors, replacement behaviors, and point values (0-10) for the behaviors.

*Partial Interval Observation Form.*

A 10-sec partial interval observation form (Appendix G) was used to code the occurrence of appropriately engaged behavior (AEB) in the classroom setting during the observation period. The form consisted of a blank grid divided into 10 sections, each section representing a minute. Each of the 10 sections was further divided into 6 sections representing 10-sec intervals. Using a prerecorded observation soundtrack, the observer recorded any instance of a target behavior that occurred within that interval by putting a check mark in the box that corresponded with that period of observation of the target behavior.

*Check-In/Check-Out Student Daily Record.*

A student daily record form (see Appendix H) was used by the CICO coordinator to record the point data earned by the student for each day. On the record form, the CICO coordinator indicated the day of the date, whether or not the student checked in and returned their home note in the morning, the goal for the day, whether or not the goal was met at the end of each day, and how many points the student earned. In addition to the behavioral data from the DBRC, this record form helped to serve as a quick reference for the student's point data. Additionally, this record form served as a measure for procedural integrity.

*Check-In/Check-Out Home Note.*

A CICO home note (see Appendix I) was filled out at the end of each day by the CICO Coordinator indicating the point goal for the day and whether or not the student met his goal for the day/week. The home note included a place for the CICO coordinator to fill out the students total points for the day and a box to check whether or not the student met his or her goal. There was also a space for the CICO coordinator to write additional comments (including what the student did well during the day or strategies the student could use the next day to get his or her point goal; adapted from Hawken et al., 2005). There was a spot for the parent or guardian to sign, and the student was instructed to return the note to the CICO coordinator the following school day during check-in.

*Check-In/Check-Out Treatment Fidelity Checklist.*

Treatment fidelity was measured in a manner similar to that used by Hawken, MacLeod, and Rawlings (2007, see Appendix J). The items on the intervention protocol checklist included (a) whether or not the student checked in at the beginning of the day, (b) whether or not teachers provided appropriate feedback (depending on treatment phase) throughout the day, (c) whether or not the student checked out at the end of the day, (d) whether or not CICO staff accurately filled out the daily record, (e) whether or not the student was appropriately allowed access to reinforcers, and (f) whether or not the parent(s)/guardian(s) signed the home notes.

### Data Collection

*Dependent Measures*

The primary dependent measure across all phases was percentage of points earned through the DBRC. Percentage of points earned was defined as the total number of

points earned divided by total opportunity (e.g. if a student had an excused tardiness or an early dismissal, his points were divided by the number of points he had the opportunity to earn versus the total number of possible points). Periods of unexcused absences or tardies were not omitted from determining the total and were counted as opportunity to earn. There were no periods of unexcused absences or tardies for any of the participants during data collection.

Secondary dependent measures across all phases included intervals of AEB and rate per week of ODRs. AEB was defined as any time the student was directing his attention towards the teacher or the appropriate activity, engaged in behavior that was compliant with school and classroom rules, or the student being engaged in the assigned activity. AEB was measured using a multiple-probe technique as described by Barlow and Hersen (1984) across all phases and data were recorded using a 10-sec partial interval observation form (Appendix G) during which time a trained observer observed the student for 20-minutes and marked the occurrence of AEB if it was observed at any time during the 10-sec interval. Percent intervals occurrence were recorded as follows: the number of observed intervals of AEB were divided by the total number of possible intervals observed and then multiplied by 100 to obtain the mean percentage of AEB for that observation period. ODRs earned for major offenses were measured across all phases. ODRs earned were defined as the number of ODRs per week a student obtains.

### Design

A multiple baseline design across four participants was used to evaluate the treatment effects of CICO with and without consistent feedback throughout the day using a DBRC. Initially, a concurrent multiple baseline was used to compare treatment effects

across participants. However, the original third and fourth participants obtained points on the DBRC in baseline that were nearing the criterion (i.e., 80%). It was determined that maintaining them in the study could potentially result in ceiling effects and not allow for demonstration of meaningful change in behavioral data. Those participants were moved to standard CICO procedures (with consistent feedback on the DBRC) following discontinuation from the study. Two more participants (Ross and Pete) were recruited and data were collected concurrently. To control for order effects, the implementation of treatment phases was randomly selected and counterbalanced across participants. The phases included (a) baseline, (b) CICO with feedback on the DBRC, and (c) CICO without feedback on the DBRC. The length of phases was staggered across participants. Before a phase change occurred, a stable or undesirable trend for percentage of points earned was evident for each phase during replication phases. Phase changes for each subsequent student occurred when there was a decreasing or stable trend in the next student's DBRC points in baseline, as well as an increasing or stable trend in the previous student's DBRC points in the intervention phase.

#### Procedure

The procedure for implementation was modified from the Behavior Education Program (BEP) described by Hawken et al., (2007) to include the use of the DBRC as a means of assessing the effectiveness of the BEP (CICO) program and to assess whether or not similar trends in appropriate behavior were seen when CICO was run without feedback on the DBRC. All teachers and participant parent/guardians provided informed consent (see Appendix A and B), to show agreement to participate in the investigation and to acknowledge an understanding of the goals, risks, and benefits of their

participation in the investigation. Prior to the collection of baseline data, the primary investigator consulted with the teacher to review concerns regarding student behavior, to conduct the FAIR-T, and to discuss previous interventions attempted by the teacher. The primary investigator used the information gathered from the FAIR-T as well as universal behavioral targets to determine the specific behaviors targeted by the CICO intervention.

*Teacher and Staff Training.*

Prior to the initiation of the study, the primary investigator trained a secondary investigator, the teachers, and the CICO coordinator on implementation procedures and correct use of the DBRC. Training procedures included reviewing the appropriate documentation and procedures, giving examples and nonexamples, and giving performance feedback during practice phases. Preceding the initiation of each phase, teachers were trained by the secondary investigator on appropriate implementation of the corresponding procedures for that phase (e.g. whether or not they were giving feedback on the DBRC during that treatment phase). The teachers were taught correct use of the DBRC and how to give feedback to the student throughout the day at the conclusion of each instructional period. The CICO coordinator was trained on the appropriate procedures for CICO including check-in procedures, review of goals and how to calculate target points, check-out procedures, how to give appropriate feedback when the student does not meet his target goal, how to use the reinforcement system, and how to complete all forms and checklists. Both the primary and secondary investigator trained teachers and staff and were available for any questions or concerns throughout the study.

*Baseline.*

The purpose of the baseline phase was to determine the student's initial level of appropriate behavior within the classroom. During baseline, teachers completed a blind DBRC for the target student at the conclusion of each instructional period. During this time the teacher gave no indication of what he or she was doing, and the target student did not receive feedback regarding his behavior.

Appropriate behavior during baseline was assessed in two ways: percentage of points earned on the DBRC during the day for each student, and percent interval occurrence of AEB. Additionally, ODR data were collected at baseline. These data were analyzed prior to implementation of treatment phases. The data from the DBRC demonstrated levels of appropriate behavior present for the target student prior to intervention.

The student's target point goal was determined by increasing the amount of points necessary by 10% above baseline levels. Baseline levels were determined by averaging the total number of points earned over the course of days in the baseline phase. The student's target point goal increased by an additional 10% once they met their point goal for a period of 5 consecutive days, not exceeding 80%. Once percent of points earned on the DBRC was stable or there was a decreasing trend, the first intervention phase (CICO FB) was implemented.

Following baseline, teachers and the CICO coordinator implemented intervention procedures for CICO with feedback on a DBRC (CICO FB), or CICO without feedback on a DBRC (CICO WFB). Order of interventions was counterbalanced across participants to further demonstrate experimental control and minimize potential

extraneous variables (i.e. order effects). Percentage of points earned on the DBRC, percent AEB, and ODRs were measured across all phases.

#### Check-In/Check-Out with Daily Behavior Report Card (CICO FB).

##### *Check-In.*

At the beginning of each day the student “checked-in” with the CICO coordinator and initiated CICO procedures. During check-in, the CICO coordinator (a) greeted the student and chatted briefly with him to help establish rapport, (b) collected the signed CICO home note, (c) offered feedback on the prior day’s performance (praise for meeting point goal, offer strategies for obtaining point goal if it was not met on the previous day), (d) reviewed target behaviors and daily point goal and encourage the student to have a good day, reminding the student of the possibility of accessing a reward, (e) provided the student with a copy of the DBRC to take with him to class, and (f) provided the student with a reward for checking-in. After all of those steps were completed, the CICO coordinator filled out the CICO student daily record (see Appendix H).

##### *Teacher feedback using the DBRC.*

During pre-established, natural transition times throughout the day, the teacher awarded between 0 and 10 points for each target behavior using the DBRC. Teachers circled the appropriate “point value” (0-10 points, 0 = no, 5 = somewhat, 10 = always) of the student’s classroom behavior based on the three behavioral categories (“Trustworthy/Responsible”, “Respectful/Fair” and “Caring/Citizenship.”). The teachers were instructed to assign points based on behavioral definitions of each point value as reviewed during the initial training. At the beginning of each class, the student provided his teacher with the DBRC. If the student did not present the teacher his card, the teacher

prompted the student for it. If the student still did not produce the DBRC, the teacher was instructed to give another copy to the student and proceed with giving feedback. The teacher briefly reviewed the number of points the student must earn for the day in order to gain access to reinforcement and offer them encouragement. At the end of each time period, the teacher rated the student's behavior and reviewed the points earned for each target behavior, either giving praise or brief corrective feedback and reminding the student of how many points would be necessary to meet criterion. These steps were repeated at the beginning and end of each class period.

*Check-Out.*

At the end of each day, the student "checked-out" with the CICO coordinator. During check-out the coordinator reviewed the student's DBRC, calculated the total points the student earned for the day, and recorded the point data in the student daily record (see Appendix H). The coordinator also reviewed the rules and target behaviors with the student and offered praise or corrective feedback. If the student earned his daily point goal, the CICO coordinator allowed them to choose from a pool of reinforcers (i.e. break cards, small pieces of candy, lunch with a preferred staff member). The CICO coordinator then filled out the home note (see Appendix J) and sent it home with the student, letting him know that his parent/guardian needed to sign the sheet and review the points earned for the day. The student was instructed that the sheet should be returned in the morning during check-in.

Check-In/Check-Out without the Daily Behavior Report Card (CICO WFB)

The procedures in this phase were the same as in the CICO FB phase except for the use of the DBRC. During this phase, the teachers continued to gather behavioral data



using the DBRC; however, the student did not have access to that information and did not receive feedback on how many points he earned throughout the day.

*Check-In.*

The student checked-in with the CICO coordinator in the same manner as the CICO FB phase. However, during check-in the student did not receive a copy of the DBRC but was instructed to go to class throughout the day and check-out in the afternoon.

*Teacher use of the DBRC.*

During this phase, each teacher continued to use the DBRC to assign points for the three target behaviors. The student was not made aware of any individual rating, as the assigned points were blind to them. The teachers had both electronic and paper copies of the DBRC provided to them, and they were asked to give the behavior ratings directly to the CICO coordinator before the end of the day. The teacher did not give specific feedback regarding any of the target behaviors or points earned during this phase, though redirection and incidental praise statements were not controlled for.

*Check-Out.*

At the end of each day, the student “checked-out” with the CICO coordinator similar to the CICO FB phase. Prior to meeting with the student, the CICO coordinator gathered the DBRC point data from each teacher and calculated the total number of points earned for the day. The CICO coordinator then followed the same procedures as in the previous phase in terms of reviewing the rules and target behaviors. If the student earned his daily point goal, the CICO coordinator praised the student and allowed them

access to reinforcement. If the student did not meet his point goal, the CICO coordinator offered corrective feedback and reviewed strategies for meeting his behavior goal.

The CICO coordinator then filled out the home note (see Appendix J) and sent it home with the student with the instruction that his parent/guardian needed to sign the sheet and review the points earned for the day. The student was instructed to return the sheet during morning check-in. Following the conclusion of check-out, the CICO coordinator recorded the point data in the student daily record (see Appendix H).

*Teacher Acceptability Ratings.*

At the conclusion of each intervention phase, the secondary investigator administered the modified IRP-15 to the teachers and CICO coordinator to measure general acceptability of the intervention. The teachers and CICO coordinator were asked to fill out the Likert-type scale questionnaire about the intervention they were implementing prior to moving to the next intervention phase. Scores on the modified IRP-15 range from 15 to 90; a score over 52.5 indicates that the interventionist perceived that the intervention was acceptable. Overall, both CICO FB and CICO WFB were found to be acceptable, though CICO WFB scored higher on the modified IRP-15 indicating that it may be more acceptable for teachers and staff. Refer to Table 1 for the acceptability means and ranges across students and interventions.

Table 1

*Acceptability Ratings on IRP-15 Across Teachers*

Participant	BL	CICO FB	CICO WFB
Dave			
Mean	60.75	63.5	81.75
Range	57-63	54-70	70-89
Joe			
Mean	45.75	53.5	75.5
Range	35-55	52-56	57-89
Ross			
Mean	48.25	63	67.75
Range	33-52	50-70	53-82
Pete			
Mean	57.5	63.25	64.5
Range	52-65	56-79	54-83

*Note.* BL = baseline; CICO FB = check-in/check-out with feedback; CICO WFB = check-in/check-out without feedback.

### Procedural Integrity

#### *Treatment Integrity.*

During each session, treatment integrity was assessed by the primary and secondary investigator through review of the CICO student daily record (Appendix H). Procedural integrity was measured through completion of the CICO Treatment Fidelity Check-List (see Appendix J) by the CICO coordinator at the completion of each day.

The secondary investigator completed the CICO Treatment Fidelity Check-List following SDO for a minimum 30% of the sessions for each student. Treatment integrity never fell below 80% ( $M = 87.5$ , range: 81.25-93.75) for any of the students across intervention phases. It should be noted that the treatment integrity checklist included “collects signed parent copy of CICO student home note from prior school day.” None of

the students brought back a signed CICO student home note which is why treatment integrity never reached 100%.

*Inter-Observer Agreement.*

Inter-observer agreement (IOA) was assessed for the use of the DBRC and SDO of AEB across a minimum of 30% of sessions across all phases. Either the secondary investigator or a trained graduate student observed one of the student's classes and independently filled out the DBRC based on their behavior during that observation period. Percent agreement between the independent rater and the teacher was calculated by dividing the total number of ratings agreed upon by the possible number of ratings and multiplying by 100.

Data Analysis

Each student's percentage of points earned on the DBRC was graphed for visual analysis (Kazdin, 1982, 1984) across baseline and treatment phases. AEB and ODRs earned per week were graphed and visually inspected to determine the levels of major disruptive behaviors across baseline and treatment conditions. Additionally, Cohen's  $d$  was calculated as a measure of effect size to demonstrate the level of intervention impact.

## CHAPTER III

### RESULTS

#### Dave

Results for the percentage of daily points earned by each student are depicted in Figure 1. Descriptive statistics are presented in Table 2. Dave's data were collected concurrently with Joe's data. Phase changes across these two participants were counterbalanced to control for order effects. During baseline, the mean percentage of daily points earned by Dave was 46.75% (range, 0% to 67%). However, Dave failed to earn any points on the first day of implementation. On subsequent days, he earned more points (range 60% to 67%). Visual analysis of data for the last three days indicated that data were stable at levels below mastery criterion (i.e., 80%), and CICO without feedback was implemented.

When CICO WFB was implemented, there was an immediate and substantial increase in the percentage of daily points earned by Dave ( $M = 94\%$ ; range, 87% to 98%). Visual analysis of these data reveal a slight decreasing trend; however, Dave's percentage of daily points remained above the criterion for each day, and CICO WFB was implemented. During the feedback phase, data remained at similar levels to the no feedback phase. With the exception of one datum where Dave only earned 74% of his points, the percentage of daily points remained stable across the feedback phase ( $M = 90.3\%$ ; range, 74% to 95%). CICO WFB was once again implemented, and data continued to remain stable throughout the phase.

When feedback was withdrawn Dave earned, on average, 91.5% of his daily points (range, 89% to 94%). These results are similar to those observed when the no

feedback phase was initially implemented. An additional replication of the feedback phase was introduced in which Dave earned, on average, 94.66% of his daily points (range, 91% to 97%). Across phases, Dave earned more points than the levels observed during baseline. Additionally, there was little difference between the rates observed with or without feedback.

Results garnered from direct observations of AEB were similar to data gathered on the DBRC (Table 3). In baseline, Dave averaged 65.33% (range, 61%-70%) AEB. Both CICO with and without feedback resulted in substantial increases in AEB, 94.6% (range, 93%-97%) and 95% (range, 93%-96%). IOA was conducted for ~33% of observations, resulting in 89% agreement (range, 80%-100%). Dave averaged 2 ODRs per week prior to intervention and did not receive any ODRs once intervention was implemented.

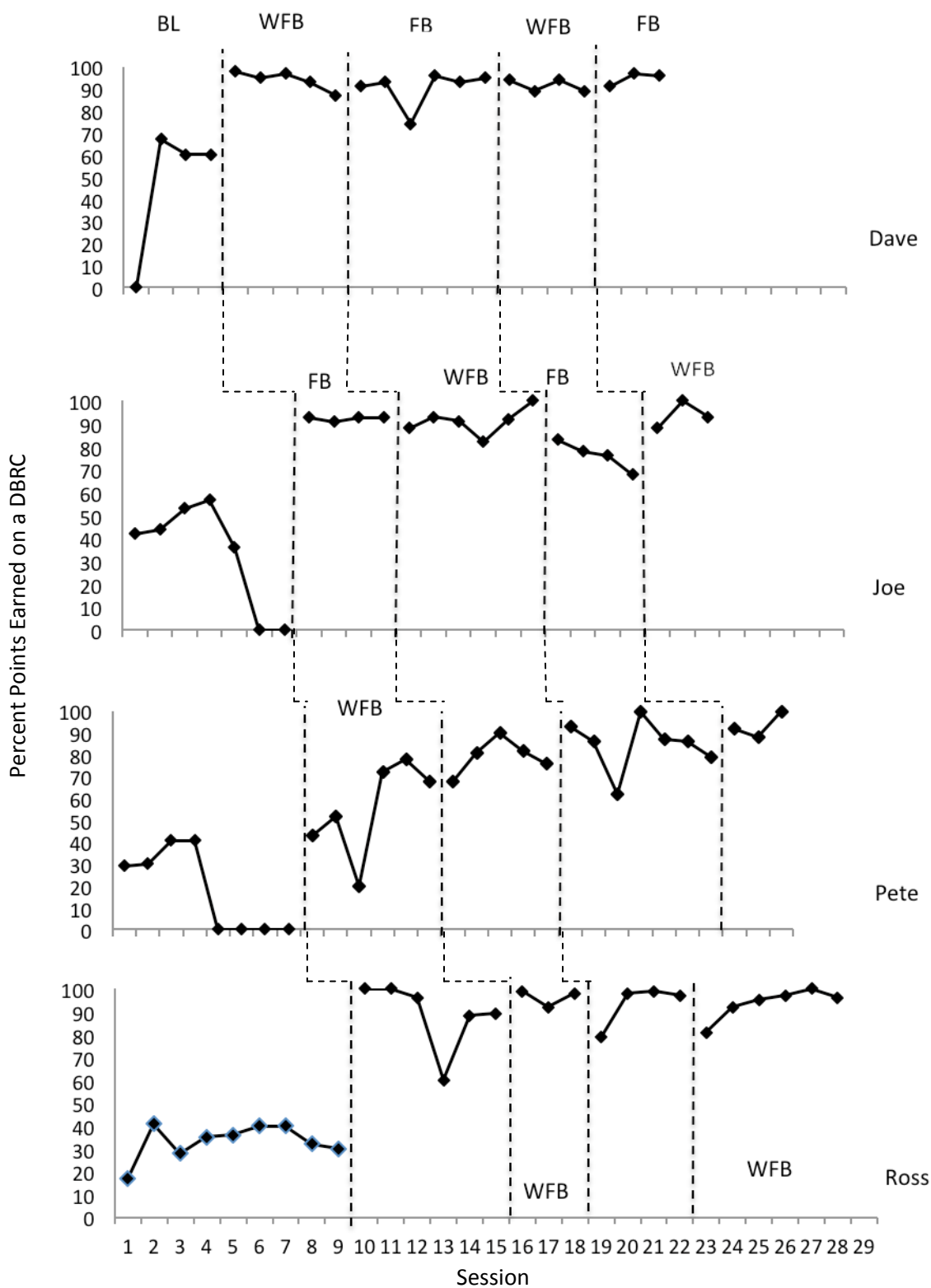


Figure 1. Percent Daily Points Earned on a Daily Behavior Report Card. Percent of points earned across phases. FB indicates phases during which participants received feedback; WFB indicates phases during which participants did not receive feedback.

Across phases, Dave earned more points than the levels observed during baseline.

Additionally, there was little difference between the rates observed with or without feedback.

Results garnered from direct observations of AEB were similar to data gathered on the DBRC (Table 3). In baseline, Dave averaged 65.33% (range, 61%-70%) AEB. Both CICO with and without feedback resulted in substantial increases in AEB, 94.6% (range, 93%-97%) and 95% (range, 93%-96%). IOA was conducted for ~33% of observations, resulting in 89% agreement (range, 80%-100%). Dave averaged 2 ODRs per week prior to intervention and did not receive any ODRs once intervention was implemented.

Table 2

*Percentage of Points Earned by Each Student*

Participants		BL	CICO FB I	CICO FB II	CICO WFB I	CICO WFB II
Dave	Mean	46.75	90.3	94.6	94	91.5
	Range	0 – 67	74 – 96	91 – 97	87 – 98	89 – 94
Joe	Mean	33.14	92.5	76.25	91	93.6
	Range	0 – 57	91 – 93	68 – 83	82 – 100	88 – 100
Ross	Mean	33.22	88.83	93.25	96.33	93.5
	Range	17 – 41	60 – 100	79 – 99	92 – 99	81 – 100
Pete	Mean	17.62	79.4	93.33	55.5	84.71
	Range	0 – 41	68 – 90	88 – 100	20 – 78	62 – 100

*Note.* BL = baseline; CICO FB = check-in/check-out with feedback (phase I and II); CICO WFB = check-in/check-out without feedback (phase I and II).



Table 3

*Percentage of Appropriately Engaged Behavior by Each Student*

Participants		BL	CICO FB I	CICO FB II	CICO WFB I	CICO WFB II
Dave	Mean	65.33	95	94	94	96
	Range	61 – 70	93 – 97	*	93 – 95	*
Joe	Mean	29.4	90	96	94	94
	Range	8 – 65	*	*	91 – 97	*
Ross	Mean	66.25	96	91.5	93	94
	Range	62 – 71	*	91 – 92	90 – 96	*
Pete	Mean	11.5	92	91	84	95
	Range	5 – 21	90 – 94	90 – 92	*	*

*Note.* BL = baseline; CICO FB = check-in/check-out with feedback (phase I and II); CICO WFB = check-in/check-out without feedback (phase I and II); \* single observation in phase.

## Joe

Visual analysis of Joe's data indicated an initial increasing trend in the percentage of points earned during baseline, although none of these data points were above the criterion (i.e., 80%). After the fourth session, there was a decrease in the percentage of points earned, which stabilized at 0 for the last two sessions. Joe earned, on average, 33% of his daily points during baseline (range, 0% to 57%).

CICO FB was the first intervention to be implemented for Joe. Once the intervention was introduced, there was an immediate and substantial increase in the percentage of daily points earned. Data remained stable across this phase ( $M = 92.5\%$ ; range, 91% to 93%), and the feedback component was withdrawn. When CICO WFB was implemented, the percentage of daily points earned remained consistent with the

feedback phase ( $M = 91\%$ ; range, 88% to 82% to 100%); however, more variability was observed. The last three data points during this phase indicated an increasing trend and CICO FB was re-implemented. When feedback was once again introduced, there was a decrease in the percentage of daily points earned from the previous no feedback phase. A decreasing trend across the phase was observed, and all but one datum was below the established criterion ( $M = 76.25\%$ ; range, 68% to 83%). When the no feedback phase was implemented again, Joe demonstrated an immediate increase in the percentage of daily points earned, and all data points were above the criterion ( $M = 93.66\%$ ; range, 88% to 93%).

Across all phases, Joe demonstrated substantial increases in the percentage of daily points earned when CICO was implemented. Overall, Joe's data were less variable, and his average percentage of daily points was higher during the implementation of CICO WFB. Based on the results of the FAIR-T, it was hypothesized that Joe's behaviors were maintained by escape. It is conceivable that Joe responded better to the no feedback phase, as it allowed him to escape teacher attention.

Direct observations of AEB were similar to data gathered on the DBRC (Table 3). In baseline, Joe averaged 29.4% (range, 8%-65%) AEB. Both CICO with and without feedback resulted in substantial increases in AEB, 92.75% (range, 90-96%) and 93.5% (range, 91%-97%). IOA was conducted for ~33% of observations, resulting in 93% agreement (range, 85%-100%). Joe averaged 3 ODRs per week prior to intervention and did not receive any ODRs once intervention was implemented.

## Pete

Pete's data were collected concurrently with Ross's data. Phase changes were counterbalanced across these two participants to control for order effects. During baseline, Pete initially exhibited an increasing trend in the percentage of daily points earned; however, all data points remained below the criterion. During the last four sessions of this phase, Pete earned none of his daily points. On average, Pete earned 17.62% of his daily points during baseline (range, 0% to 41%).

CICO WFB was the first intervention implemented for Pete. There was an immediate increase in the percentage of daily points earned from the previous four data points during baseline. Overall, visual analysis of Pete's data during the no feedback phase indicated an increasing trend in the percentage of daily points earned. However, there was considerable overlap with data points in baseline and Pete never reached acceptable levels for percentage of daily points earned ( $M = 55.5\%$ ; range, 20% to 78%). When feedback was implemented, Pete's data initially remained at levels similar to those observed during the no feedback phase. After feedback was implemented, there was an increasing trend observed for the next three sessions; however the last three data points of the phase indicated a decreasing trend. During the initial feedback phase, Pete earned an average of 79.4% of his daily points (range, 68% to 90%). Feedback was once again withdrawn and there was an immediate increase in the percentage of daily points earned to acceptable levels. During this phase, Pete met the criterion on all but two days ( $M = 84.71\%$ ; range, 62% to 100%). Although, on average, Pete earned a higher percentage of daily during this phase than the previous phases, a decreasing trend was observed during the last three sessions. When feedback was once again instituted, Pete exhibited an

increase in the percentage of daily points earned ( $M = 93.3\%$ ; range, 88% to 100%).

During this phase, Pete met the criterion each day.

Pete earned a higher percentage of daily points compared to baseline when CICO was implemented both with and without feedback. On average, Pete earned a greater percentage of daily points during the feedback phase, and there was less variability observed in his scores.

Direct observations of AEB for Pete resulted in outcome data similar to data gathered through the DBRC (Table 2). In baseline, Pete averaged 11.5% (range, 5%-21%) AEB. Both CICO with and without feedback resulted in substantial increases in AEB, 91.75% (range, 90%-94%) and 89.5% (range, 84%-95%). IOA was conducted for 33% of observations, resulting in 96% agreement (range, 93%-99%). Pete averaged 1.5 ODRs per week prior to intervention and did not receive any ODRs once intervention was implemented.

#### Ross

Ross's data were collected concurrently with Pete's data. Phase changes were counterbalanced across these two participants to control for order effects. Visual analysis of Ross's data indicated that during baseline his percentage of points earned was low and relatively stable and showed a slight decreasing trend in the last 3 days of baseline. Ross earned, on average 33.2% of the possible points on the DBRC during baseline (range, 17%-41%).

CICO FB was the first intervention to be implemented for Ross. Once the intervention was introduced, there was an immediate and substantial increase in the percentage of daily points earned (from 33% to 100% between the last day of baseline

and the first day of intervention). Data showed a slight decreasing trend across this phase, however, Ross's percent of points earned remained above 80% except for one day ( $M = 88.83\%$ ; range, 60% to 100%). When CICO WFB was implemented there was a slight increase in percent points earned but it overall remained fairly consistent with the feedback phase ( $M = 96.33\%$ ; range, 92% to 99%). When feedback was once again introduced, there was an immediate and substantial decrease in the percentage of daily points earned from the previous no feedback phase (below 80% criterion). This effect was quickly reversed, and Ross's percent points earned on the DBRC remained high for the remainder of that phase ( $M = 93.25$ ; range, 79-99). The same trend was demonstrated when the no feedback phase was implemented again; there was an immediate decrease in the percentage of daily points Ross earned, though his percentage did not fall below criterion (81%). Following the initial phase change, the data demonstrated a slight increasing trend and remained above criterion ( $M = 93.5\%$ ; range, 81%-100%).

Across all phases Ross demonstrated substantial increases in the percentage of daily points earned when the CICO interventions were implemented, though they were somewhat variable. While there were not substantial differences between CICO with and without feedback, Ross generally had higher rates and lesser variability in the CICO WFB phase ( $M = 94.4\%$ ; range, 81-100) in comparison to the CICO FB phase ( $M = 90.6\%$ ; range, 60%-100%).

Direct observations proved to be more stable in comparison to data gathered on the DBRC (Table 3), and did not demonstrate meaningful differences in AEB between CICO phases, however showed substantial differences from baseline. In baseline, Ross averaged 66.25% intervals engaged in AEB (range, 62%-71%). Both CICO with and

without feedback resulted in substantial increases in AEB, 91.6% (range, 90%-96%) and 92% (range, 90%-95%). IOA was conducted for 33% of observations, resulting in 92% agreement (range, 89%-100%). Ross averaged .5 ODRs per week prior to implementation of intervention and did not receive any ODRs once intervention was implemented.

Measures of effect size were calculated using Cohen's  $d$  to determine the measure of treatment effects between baseline and combined treatment phases (CICO FB and CICO WFB) as well as the difference in treatment effects between both treatment phases. Historically, scores of 0.8 or higher are thought to have large treatment effects (indicating that there was a large magnitude of treatment effect). Effect sizes may also be used to determine percent by which treatment groups do not overlap each other (Cohen, 1988).

When CICO FB and CICO WFB scores were combined ( $M = 86.97$ ,  $SD = 14$ ) and compared to scores obtained in baseline ( $M = 30.68$ ,  $SD = 20.99$ ), large treatment effects were found ( $d = 3.16$ , effect size: 0.84) indicating that 47.4% of scores obtained in treatment phases did not overlap with baseline scores. Conversely, when CICO FB ( $M = 88.11$ ,  $SD = 10.27$ ) and CICO WFB ( $M = 85.98$ ,  $SD = 16.67$ ) treatment phases were compared to each other large treatment effects were not found ( $d = 0.1538$ , effect size: 0.0767) indicating that all scores obtained overlapped.

Similar results were found when effect sizes were calculated for each student. For Dave, CICO combined scores ( $M = 92.33$ ,  $SD = 5.49$ ) compared to baseline ( $M = 46.75$ ,  $SD = 31.34$ ) resulted in relatively large treatment effects ( $d = 2.02$ , effect size: 0.7) indicating that 43% of scores obtained in treatment phases did not overlap with baseline scores. Conversely, when CICO FB phases ( $M = 91.77$ ,  $SD = 7.01$ ) were compared to

CICO WFB phases ( $M = 92.88$ ,  $SD = 3.78$ ) treatment effects were not found ( $d = 0.197$ , effect size: 0.09) indicating that all scores obtained overlapped. For Joe, CICO combined scores ( $M = 91.8$ ,  $SD = 5.73$ ) compared to baseline ( $M = 33.14$ ,  $SD = 23.68$ ) resulted in large treatment effects ( $d = 3.10$ , effect size: 0.84) indicating that approximately 47.4% of scores obtained did not overlap between baseline and treatment phases. When CICO FB phases ( $M = 84.37$ ,  $SD = 9.62$ ) were compared to CICO WFB phases ( $M = 91.88$ ,  $SD = 5.73$ ) small treatment effects were found ( $d = 0.951$ , effect size: 0.429) indicating that approximately 27.4% of scores obtained did not overlap. Similar to visual data, these findings indicate that while the average of scores for both CICO phases met criterion, CICO WFB was a more effective intervention for Joe. For Pete, CICO combined scores ( $M = 76.33$ ,  $SD = 19.45$ ) compared to baseline ( $M = 17.62$ ,  $SD = 19.33$ ) resulted in relatively large treatment effects ( $d = 3.02$ , effect size: 0.834) indicating that approximately 47.4% of scores obtained in treatment phases did not overlap with baseline scores. When CICO FB phases ( $M = 84.62$ ,  $SD = 10.01$ ) were compared to CICO WFB phases ( $M = 71.23$ ,  $SD = 22.32$ ) small treatment effects were found ( $d = 0.774$ , effect size: 0.361) indicating that approximately 23.3% of scores did not overlap. For Ross, CICO combined scores ( $M = 92.42$ ,  $SD = 9.96$ ) compared to baseline ( $M = 33.22$ ,  $SD = 7.62$ ) resulted in relatively large treatment effects ( $d = 6.67$ , effect size: 0.95) indicating that between 51.6% and 55.4% of scores obtained in treatment phases did not overlap with baseline scores. Conversely, when CICO FB phases ( $M = 90.6$ ,  $SD = 12.70$ ) were compared to CICO WFB phases ( $M = 94.44$ ,  $SD = 5.76$ ) minimal treatment effects were found ( $d = 0.38$ , effect size: 0.19) indicating that approximately 7.7% of scores did not overlap.

## CHAPTER IV

### DISCUSSION

The current study expanded upon the DBRC and CICO literature by evaluating the effectiveness of CICO with and without feedback on a DBRC on increasing rates of appropriate behavior for middle school students who had been identified as having inappropriate levels of problem behavior. CICO is considered to be a Tier 2 intervention program and is typically used as an addition to DBRC programs (Hawken & Horner, 2003). CICO has been shown to be effective at diminishing problem behaviors (as measured by ODRs and SDO) and increase teaching opportunities (establishing expectations at the beginning of the day, reviewing and “trouble shooting” at the end of the day), feedback (consistent and timely feedback throughout the day), and reinforcement opportunities for a student who has been identified as not appropriately responding to Tier 1 strategies (Hawken & Horner, 2003; March & Horner, 2002).

Current limitations in the literature regarding CICO include an overreliance on ODRs to determine treatment effects. Chafouleas et al., (2005) have demonstrated that points earned on a DBRC can be sensitive enough to behavioral change and environmental context and can lend themselves to analysis and progress monitoring. The current study examined intervention effects by assessing percentage of points earned on a DBRC in addition to SDO for AED and ODRs. Additionally this intervention, given the increased access to teacher attention, has been thought to be most effective with students who have attention-maintained behavior. To date, there have been no studies that measure function of behavior in relation to the effectiveness of CICO. This study incorporated a brief functional assessment interview (FAIR-T) in order to help develop



hypotheses regarding the function of problem behavior. Finally, given the current state of education and the increasing restraints on resources, it is imperative that interventions are both efficient and effective. To these ends, this study assessed whether or not standard CICO procedures were necessary to result in meaningful behavioral change. More specifically, this study directly assessed whether or not consistent feedback on a DBRC was necessary or, rather, if a student could simply “check-in” and “check-out” with a CICO coordinator.

#### CICO as an Effective Tier 2 Behavioral Intervention

Similar to results garnered from previous studies (Hawken & Horner, 2003; March & Horner, 2002), implementation of CICO resulted in an increase in appropriate classroom behavior and a decrease in ODRs from baseline. In this study appropriate behavior and academic engagement were measured by percent of points earned on a DBRC and percent intervals of AEB. All four participants obtained immediate and substantial increases in appropriate behavior following implementation of both forms of CICO interventions, further supporting CICO as an effective Tier 2 strategy.

During baseline, all participants earned a low percentage of points on the DBRC indicating that they engaged in low levels of appropriate behavior throughout the school day. Following implementation of CICO, all four participants had immediate and substantial increases in appropriate behavior across the school day, increases in AEB and no ODRs for the remainder of the study. Cohen’s  $d$  for effect size was calculated between baseline and CICO (CICO FB + CICO WFB) across all participants and was found to have a large effect ( $d = 3.16$ , effect size: 0.84) indicating that treatment effects were meaningful and that at least 47.4% of scores obtained in the treatment phases did

not overlap with scores obtained in baseline. Additionally, SDOs for AEB demonstrated an increase in academic engagement for all students following implementation of CICO interventions. Taken together with ODR data, this intervention seems to lend itself to increasing not only academic engagement, but also access to teaching opportunity (e.g. decreasing ODRs and removal from classroom for disruptive behavior, increasing access to feedback through utilization of CICO coordinator at a minimum and access to teacher feedback throughout the day for CICO FB phases) a benefit identified by Hawken and Horner (2003).

#### DBRC as a Dependent Variable

One of the limitations identified in the current CICO literature was an overreliance on ODRs as a dependent variable, that ODRs may not be sensitive enough to true behavioral change within a classroom setting. Recent studies (Chafouleas et al., 2005) have demonstrated that points earned on a DBRC can be sensitive enough to behavioral change that they can serve as a means of analysis and progress monitoring. The current study examined intervention effects by assessing percentage of points earned on a DBRC in addition to SDO for AED and ODRs. Using a 10-point scale, identified as being easiest for interpretation and visual analysis (Chafouleas, 2011), data were collected by teachers *in vivo* and used to interpret intervention effectiveness.

Results gathered from DBRC data were not only consistent with SDO data but were also sensitive enough to demonstrate change between phases. Initial designs of the DBRC for this study involved using a 3-point scale and did not produce data that allowed for meaningful interpretation and analysis. More recent literature stated that a minimum of six indicators (rating 0-6) was necessary for interpretation and visual analysis (Briesch

et al., 2011; Chafouleas, 2011) and this study, though anecdotally, lends some support. At this time further research should be conducted assessing the sensitivity and utility of various scales for a DBRC within the context of analyzing the effectiveness of a CICO intervention. Further, teacher accuracy compared to SDO should be measured across DBRC scales as progress monitoring of intervention effectiveness may have significant real-world implications for students needing Tier 2 behavioral supports.

#### CICO Related to Function of Behavior

Given that CICO increases access to teacher attention, it has been widely accepted that this intervention is most appropriate for students whose problem behaviors are attention maintained. To date, this hypothesis has not been experimentally manipulated. While not directly assessed, the FAIR-T was conducted with each teacher across all participants as a method of developing hypotheses regarding the function of problem behaviors. Only one participant, Dave, was hypothesized to be attention maintained. Pete and Ross were hypothesized to have problem behaviors that were dually maintained by escape and attention, and Joe was hypothesized to have problem behaviors maintained by escape (particularly escape from teacher attention).

The hypothesized escape function of Joe's problem behavior may have played a role in his reaction to intervention methods. Specifically, he started in the feedback phase, and the level of his behavior remained above the 80% criterion when he was switched to the WFB phase. However, when Joe switched back to the FB phase, his percent points earned on the DBRC started to drop, demonstrating a decreasing trend. Anecdotally, Joe refused to see the CICO coordinator at the end of the day to check-out during the second feedback phase. In response, the CICO coordinator sought Joe out and

gave him the appropriate feedback on his behavior. For three out of four days, Joe's performance as reflected in his DBRC data allowed him access to reinforcement, which he refused to take. On the final day of the phase, Joe's DBRC data dropped below criterion, and he was switched back to the WFB phase. Following the change back to WFB, Joe's performance as depicted in his DBRC immediately increased, he became compliant with the CICO procedures, and accessed reinforcement at the end of each day for the remainder of the study. For the remaining three participants, the hypothesized function of behavior did not seem to play a role. The remaining participants being at least partly attention maintained, however, may explain this. Further assessment of the relationship between function and behavioral outcomes needs to be conducted to help determine the effectiveness of CICO for behaviors with various maintaining consequences. Variations of CICO (e.g. CICO WFB) may be most effective for students who engage in escape maintained problem behaviors. From a practical standpoint, while functional assessments are not typically conducted for Tier 2 levels of support, matching a student with an intervention that operates within the hypothesized function of the problem behavior could be prudent, particularly if a brief interview/screener (i.e. the FAIR-T) was utilized to develop hypotheses.

#### CICO with and without Feedback on a DBRC

As school districts are held increasingly responsible for student academic and behavioral outcomes, resources have become scarce. The incorporation of well-documented and research-based secondary interventions is imperative to decrease the number of children who will require more intensive interventions. Further, given that up to 20% of the school's population (if the school is engaged in an effective universal

behavioral strategy) may be in need of a secondary level of support, researchers must develop time and resource efficient intervention strategies to address the needs of these students. To these ends, this study further examined whether or not standard CICO procedures were necessary to result in meaningful behavioral change. More specifically, this study directly assessed whether or not consistent feedback on a DBRC was necessary or, rather, if a student could simply “check-in” and “check-out” with a CICO coordinator.

When subjects switched between CICO phases, performances varied, but overall there were markedly little differences in percent points earned on the DBRC across the participants, and scores remained higher compared to baseline. Cohen’s  $d$  was calculated to measure effect size between CICO WFB and CICO FB across all participants and no treatment effects were found ( $d = 0.1538$ , effect size: 0.0767). These results indicate that all scores overlapped and that differences in treatment effects were not meaningful and could be considered functionally equivalent. Further, differences in AEB between treatment phases were small, and all participants averaged above 80% criterion.

The results of the CICO FB and CICO WFB comparison could have significant practical implications. Assuming that either form of CICO is functionally appropriate for the student; results indicate that students may respond to a minimum of checking-in and going without feedback until they check-out at the end of the day. In addition to being a more efficient use of teacher and student time (and potentially more effective for students who engage in escape-maintained behaviors), this finding may also have implications for staff training. Though additional research is needed, these results indicate that the CICO

coordinator may be the most important change agent in this intervention and, therefore, the staff member who should be targeted for intensive training and support.

As students progress from one grade to another, the number of teachers and staff members who work with the student throughout the day/week typically also increases. This study was conducted with middle school students who had between six and eight teachers per day and in total involved training 23 teachers and one CICO coordinator. The training for each teacher and the CICO coordinator was rather intensive and included didactic instruction, written instructions, modeling, and feedback. Additionally, fidelity data were collected in 33% of the sessions for all teachers and the CICO coordinator. These training procedures may not be feasible in applied settings when multiple change agents are involved. The results of this study indicate that teacher feedback throughout the day may not be necessary. In other words, students may exhibit improvements in behavior when receiving feedback at the end of the day from a CICO coordinator, rather than each period. These results have potential implications for practitioners and may address concerns regarding the feasibility of training multiple teachers. Given the results of this study, it is conceivable that school psychologists can simply train one or two CICO coordinators to implement the CICO program. While there would be the need to train teachers on how to score the DBRC, this may eliminate the need to provide intensive training for multiple teachers, and can thereby free trainer resources to intervene with a greater number of students.

#### Treatment Fidelity and Acceptability

Overall, measures of treatment fidelity and acceptability were relatively high. Procedural integrity was measured using the CICO Treatment Fidelity Checklist.

Acceptability was measured using the modified IRP-15, and both intervention phases were found to be acceptable for teachers and the CICO coordinator.

### Limitations

While the current study extends the literature for CICO as an efficient and effective Tier 2 intervention there are a number of limitations that warrant further review. First, although this study used a multiple baseline design not all participants were run concurrently. The two pairs were run non-concurrently. Watson and Workman (1981) reviewed the use of a non-concurrent multiple baseline and reported that the design could protect against history as a threat to internal validity within an applied setting.

A second limitation is that there was no experimental control for incidental praise and reinforcement during the WFB phase. During the WFB phase, teachers were instructed to not give feedback specifically on the point data earned on the DBRC. They may, however, have given students feedback in the form of praise or redirection not related to the DBRC. While praise statements or redirection may have affected student behavior, they occurred within the context of universal classroom management strategies. This level of intervention is appropriate within the context of a three-tier system (Walker et al., 1996). Students who are in need of additional academic and behavior supports (Tiers 2 and 3) do not receive these interventions outside of universal strategies. Rather, Tier 2 and 3 interventions are additive, as they are done *in addition* to Tier 1. Therefore, any universal classroom strategies in place were considered appropriate, as they were also present in baseline.

A third limitation involves procedural integrity specifically for home-school communication. Interestingly, the DBRC was originally developed to increase school-

home communication, a factor thought to be important for increasing appropriate student behavior at school (Edlund, 1969; Smith et al., 1983). Throughout the study, none of the participants returned any of the home-notes, and whether or not parents gave feedback on school performance could not be determined. During the conduct of the study, communication was attempted with parents/guardians to remind them of this study component. This did not, however, result in returning of home-notes.

Recent literature indicates that the home component of the SHN may not play as significant a role as initially thought (Filter et al., 2007). It is possible that the home-note may not be a crucial component in the intervention package so long as an appropriate reinforcement system (e.g. school-based) is in place. This could have significant implications for students who struggle with the home environment, for students whose parents refuse to participate in their child's intervention process, or for parents of children who are not able to provide reinforcement.

Finally, functions of behavior were not clear or specific for all students. A FAIR-T was conducted with each teacher, which resulted in a brief synopsis of problem behaviors, setting events in which the target behaviors occurred, and consequences that typically followed occurrence of the target behavior. This information led to a hypothesized function of behavior for all of the participants. In order to better understand the relationship between function of behavior and CICO an experimental functional analysis should be conducted with participants to determine specific functions of behavior.



## Summary

Taken together, the results of this study indicate that CICO FB and WFB throughout the day may be effective at increasing appropriate behaviors as measured by percentage of points earned on a DBRC. Further, similar to the DBR (Chafouleas, 2011), these methods allowed for data to be collected in a quick and efficient manner, while being directly related to what is taking place in the classroom environment and targeting contextually relevant behavior. This resulted in data that were meaningful, thus adding to the utility of the DBRC as an effective progress-monitoring tool. Finally, CICO seemed to be an effective behavioral intervention strategy across multiple hypothesized functions of behavior (not just attention-maintained behavior, as previously hypothesized) and could be altered based on hypothesized function while maintaining intervention effects.

In summary, the results of this study demonstrate that CICO with and without feedback on a DBRC is an effective Tier 2 intervention that may assist in diminishing problem behaviors that are maintained by multiple functions. Additionally, percent of points earned on a DBRC was shown to be a sensitive and effective measure, demonstrating usefulness as a progress-monitoring tool. Also, these results are promising and provide practitioners with alternate approaches to implementing CICO. But, it remains that further research needs to be conducted.

## APPENDIX A

## STUDENT CONSENT FORM

University of Southern Mississippi

Consent Document for Research Participants

**Title of Study:**

Effects of Check-In/Check-Out with and without Access to Feedback from a Daily Behavior Report Card on the Levels of Appropriate Behavior in Secondary School Students

**Purpose**

Your child is being asked to participate in a study that is studying the effects of an intervention in 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 received at least three office discipline referrals during the current school year, he or she was recommended by a teacher or administrator due to presenting social behavior concerns, and because his or her problem behaviors do not include serious, dangerous, or infrequently occurring 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 coordinator in the morning, and that individual will discuss his or her behavioral expectations. Your child will then go to class and he or she may or may not get feedback on his or her behavior in class. At the end of the day, your child will check-out with the coordinator, who will provide praise and/or corrective feedback as well as a reward if your child met his or her goal that day. The coordinator will then provide your child with a home progress note to take home for you to review and sign, which will then be returned to school the following day.

**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 use 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 Nichole Weakley or Dr. Joe Olmi at (601) 266-5255 or via email at nichole.jaskiw@usm.edu or D.Olmi@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.

**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*

## TEACHER/STAFF CONSENT FORM

University of Southern Mississippi

Consent Document for Research Participants

### **Title of Study:**

Effects of Check-In/Check-Out with and without Access to Feedback from a Daily Behavior Report Card on the Levels of Appropriate Behavior in Secondary School Students

### **Purpose**

You are being asked to participate in a study that is studying the effects of an intervention in increasing appropriate 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 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 Nichole Weakley or Dr. Joe Olmi at (601) 266-5255 or via email at nichole.jaskiw@usm.edu or D.Olmi@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.

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This Section to be Completed by Teacher/Staff

\_\_\_\_\_

*Name of Teacher/Staff*

\_\_\_\_\_

*Date*

## INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL



THE UNIVERSITY OF  
SOUTHERN MISSISSIPPI

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**INSTITUTIONAL REVIEW BOARD**

118 College Drive #5147 | Hattiesburg, MS 39406-0001 Phone: 601.266.6820 |  
Fax: 601.266.4377 | www.usm.edu/irb

**NOTICE OF COMMITTEE ACTION**

The project has been reviewed by The University of Southern Mississippi Institutional Review Board 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: R10012201** □ **PROJECT TITLE: Effects of Check-In/Check-Out with and without**

**Access to Feedback on a Daily Behavior Report Card** PROJECT TYPE:  
**Previously Approved Project**

RESEARCHER/S: **Nichole M. Jaskiw-Weakley** COLLEGE/DIVISION: **College of Education & Psychology** DEPARTMENT: **School Psychology** □ FUNDING AGENCY: **N/A** □ IRB COMMITTEE ACTION: **Expedited Review Approval**  
PERIOD OF PROJECT APPROVAL: **01/24/2012 to 01/23/2013**

**Lawrence A. Hosman, Ph.D. Institutional Review Board Chair**

## 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.)

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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?

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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?  
\_\_\_\_\_ Yes    \_\_\_\_\_ No    If yes, briefly explain:  
\_\_\_\_\_
- 
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 | Time  | 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.)

<u>Observation #1</u> (Back-up)	<u>Observation #2</u>	<u>Observation #3</u>
Date_____	Date_____	Date_____
Time_____	Time_____	Time_____

### 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. Rate how manageable the behavior is:

- |                       |                        |   |   |   |   |
|-----------------------|------------------------|---|---|---|---|
| a. Problem Behavior 1 | 1                      | 2 | 3 | 4 | 5 |
|                       | UnmanageableManageable |   |   |   |   |
| b. Problem Behavior 2 | 1                      | 2 | 3 | 4 | 5 |
|                       | UnmanageableManageable |   |   |   |   |
| c. Problem Behavior 3 | 1                      | 2 | 3 | 4 | 5 |
|                       | UnmanageableManageable |   |   |   |   |

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 |

Antecedents: Problem Behavior # \_\_\_\_\_ : \_\_\_\_\_ Yes  
No

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.

<u>Consequence</u>	Yes	No
Access to Preferred Activity	_____	_____
Termination of Task	_____	_____
Rewards	_____	_____
Peer Attention	_____	_____
Teacher Attention	_____	_____

Praise	_____	_____
Ignore	_____	_____
Re-direction	_____	_____
Interrupt	_____	_____
Reprimand	_____	_____

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

### DAILY BEHAVIOR REPORT CARD

**Check-in Check-Out (CICO) Daily Behavior Report Card**

NAME: \_\_\_\_\_ CICO Specialist: \_\_\_\_\_ DATE: \_\_\_\_\_



Teachers, using the above scale, please mark a score that best reflects student performance on each target behavior during your class period and initial. Provide feedback only if instructed by the CICO Specialist.

Behavior Goals → Period ↓	Target Behavior 1:	Target Behavior 2:	Target Behavior 3:	T.I.
1.				
2.				
3.				
4.				
5.				
6.				
7.				
<b>Total</b>				

Points Earned:	
Point	
Goal:	

**Incentive Box:**

I Met My Goal

I Did Not Meet My Goal

Student Signature: \_\_\_\_\_

Signature of CICO Specialist: \_\_\_\_\_

APPENDIX F  
BEHAVIORAL DEFINITIONS

<b>Target Behaviors</b>	<b>Replacement Behaviors</b>
<p>Specific problem behaviors that the teacher wishes to decrease.</p> <p>Target behaviors should be clearly defined and measurable behaviors that occur within the setting</p>	<p>Appropriate behaviors that will be reinforced in replacement of the target behavior.</p> <p>Alternative behaviors should be clearly defined, measurable behaviors that occur within the setting, and should be positively worded (a “do” command versus a “don’t” command).</p>
<p><b>Inappropriate Vocalizations:</b> Any academically irrelevant vocalization or verbal noise made by the <b>XXXXX</b>. This includes such things as humming, making unusual vocal noises, speaking, whispering, or making noises with one’s teeth.</p>	<p><b>Raises Hand:</b> Any time <b>XXXXX</b> raises the level of her hand above her head for a period of more than 3 seconds.</p>
<p><b>Off-Task:</b> if <b>XXXXX</b> interrupts her attention to the task at hand to engage in some other behavior for three seconds. That is, if <b>XXXXX</b> breaks eye contact with the task materials.</p>	<p><b>On-Task:</b> Any time <b>XXXXX</b>’s attention (has eyes oriented towards materials for more than 3 seconds) is focused on and working towards completing the task at hand. Periods of time during which <b>XXXXX</b> has her hand raised and is waiting for assistance will also be considered “on-task”.</p>
<p><b>Out-of-Seat:</b> any time <b>XXXXX</b> is completely out of seat. No part of buttocks or legs can be in contact with the seat.</p>	<p><b>In-Seat:</b> Any time <b>XXXXX</b>’s buttocks and thighs have contact with her seat.</p>





APPENDIX H

CHECK-IN/CHECK-OUT STUDENT DAILY RECORD FORM

CICO Coordinator: \_\_\_\_\_

Check In					Check Out	
Date	Student Name	Review Rules	Review points	Signed Parent Copy	School Copy Retained	Daily Points %

APPENDIX I  
CICO STUDENT HOME NOTE

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Points earned: \_\_\_\_\_

Student met his/her point total:      YES              NO

Did well with:

Could work on:

Additional Comments:

Parent/Guardian Signature:

\_\_\_\_\_

Comments:

APPENDIX J  
CICO TREATMENT FIDELITY CHECKLIST

**Check In:**

- Greets student, chatting to establish rapport
- Collects signed parent copy of CICO Student Home Note from prior school day
- Provide student with new DBRC (if appropriate)
- Does not provide student with new DBRC (if appropriate)
- Review point goal and strategies to earn points
- Offer reinforcement to student for checking-in
- Encourage student to have a good day
- Document student's check in on CICO Record Form

**Check Out:**

- Provide student with praise for compliance with expectations
- Provide student with corrective feedback for noncompliance with expectations
- Calculate percentage of points earned on DBRC (with or without student present, depending on treatment phase).
- Determine whether student met goal
- Provide student with incentive for checking out
- Provide student with incentive for meeting goal, if applicable
- Fill out CICO student home note and instruct student to get signature from parent/guardian.
- Document the student's check out on the CICO Record Form

## REFERENCES

- Aaron, P. G., Joshi, R. M., Gooden, R., & Bentum, K. E. (2008). Diagnosis and treatment of reading disabilities based on the component model of reading: An alternative to the discrepancy model of LD. *Journal of Learning Disabilities, 41*, 67-84.
- Ardoin, S. P., Roof, C. M., Klubnick, C., & Carfolite, J. (2008). Evaluating curriculum-based measurement from a behavioral assessment perspective. *The Behavior Analyst Today, 9*, 36-49.
- Atkeson, B. M., & Forehand, R. (1979). Home-based reinforcement programs designed to modify classroom behavior: A review and methodological evaluation. *Psychological Bulletin, 86*, 1298-1308.
- Barlow, D. H., & Hersen, M. (1984). *Single case experimental designs: Strategies for studying behavior change. Second Edition*. Boston, MA: Allyn and Bacon.
- Barnes, A. C., & Harlacher, J. E. (2008). Clearing the confusion: Response-to-intervention as a set of principles. *Education and Treatment of Children, 31*(3), 417-431.
- Barth, R. (1979). Home-based reinforcement of school behavior: A review and analysis. *Review of Educational Research, 49*, 436-458.
- Briesch, A. M., Kilgus, S. P., Chafouleas, S. M., Riley-Tillman, T. C., & Christ, T. J. (2011). The influence of alternative scale formats on the generalizability of data obtained from direct behavior rating single item scales (DBR-SIS). *Assessment for Effective Intervention, 35*, 436-458.
- Carr, E. G., Horner, R. H., Turnbull, A. P., Marquis, J., Magito-McLaughlin, D., McAtee, M. L., Smith, C. E., Anderson-Ryan, K., Ruef, M. B., & Doolabh, A. (1999).

*Positive behavior support for people with developmental disabilities: A research synthesis.* Washington, DC: American Association on Mental Retardation.

Chafouleas, S. M. (2011). Direct behavior rating: A review of the issues and research in its development. *Education and Treatment of Children, 34*, 575-591.

Chafouleas, S. M., Christ, T. J., & Riley-Tillman, T. C. (2009). Generalizability of scaling gradients on direct behavior ratings. *Educational & Psychological Measurement, 69*, 157-173.

Chafouleas, S. M., McDougal, J. L., Riley-Tilman, T. C., Panahon, C. J., & Hilt, A. M. (2005). What do daily behavior report cards (DBRCs) measure? An initial comparison of DBRCs with direct observation for off-task behavior. *Psychology in the Schools, 42*(6), 669-676.

Chafouleas, S. M., Riley-Tilman, T. C., & McDougal, J. L. (2002). Good, bad, or in-between: how does the daily behavior report card rate? *Psychology in the Schools, 39*(2), 157-169.

Chafouleas, S. M., Riley-Tilman, T. C., & Sassu, K. A. (2006). Acceptability and reported use of daily behavior report cards among teachers. *Journal of Positive Behavior Interventions, 8*(3), 174-182.

Chafouleas, S. M., Riley-Tilman, T. C., Sassu, K. A., LaFrance, M. J., & Patwa, S. S. (2007). Daily behavior report cards: an investigation of the consistency of on-task data across raters and methods. *Journal of Positive Behavior Interventions, 9*(1), 30-37.

- Cheney, D., Flower, A., & Templeton, T. (2008). Applying response to intervention metrics in the social domain for students at risk of developing emotional of disorders. *Journal of Special Education, 42*(2), 108-126.
- Cohen, J. (1988). *Statistical power analysis for behavior sciences*, 2<sup>nd</sup> edition. Hillsdale, NJ: Erlbaum.
- Colvin, G., & Kame'enui, E. J. (1993). Reconceptualizing behavior management and school-wide discipline in general education. *Education and Treatment of Children, 16*, 361-381.
- Crone, D. A., Hawken, L. S., & Bergstorm, M. K. (2007). A demonstration of training, implementing, and using functional behavior assessment in 10 elementary and middle school settings. *Journal of Positive Behavior Interventions, 9*(1), 15-29.
- Crone, D. A., Horner, R. H., & Hawken, L. (2003). *Responding to problem behavior in the school: The behavior education program*. New York, NY: Guilford.
- Doggett, R. A., Edwards, R. P., Moore, J. W., Tingstrom, D. H., & Wylczynski, S. M. (2001). An approach to functional assessment in general education classroom settings. *School Psychology Review, 30*, 313-328.
- Dufrene, B. A., Doggett, R. A., Henington, C., & Watson, T. S. (2007). Functional assessment and intervention for disruptive classroom behaviors in preschool and head start classrooms. *Journal of Behavioral Education, 16*, 368-388.
- Edlund, C. V. (1969). Rewards at home to promote desirable school behavior. *Teaching Exceptional Children, 1*, 121-127.
- Edwards, R. P. (2002). A tutorial for using the functional assessment informant record for teachers. *Proven Practice, 4*, 31-33.

- Fairbanks, S., Sugai, G., Guardino, D., & Lathrop, M. (2007). Response to intervention: Examining classroom behavior support in second grade. *Exceptional Children, 73*(3), 288-310.
- Filter, K. J., McKenna, M. K., Benedict, E. A., Horner, R. H., Todd, A. W., & Watson, J. (2007). Check in/check out: a post-hoc evaluation of an efficient, secondary-level targeted intervention for reducing problems behaviors in schools. *Education and treatment of Children, 30*(1), 69-84.
- Fletcher, J. M., Coulter, W. A., Reschly, D. J., & Vaughn, S. (2004). Alternative approaches to the definition and identification of learning disabilities: Some questions and answers. *Annals of Dyslexia, 54*(2), 304-331.
- Fuchs, D. & Fuchs, L. S. (2006). Introduction to responsiveness-to-intervention: What, why and how valid is it? *Reading Research Quarterly, 4*, 93-99.
- Gresham, F. M. (2007). Response to intervention and emotional and behavioral disorders: Best practices in assessment for intervention. *Assessment for Effective Intervention, 32*(4), 214-222.
- Hawken, L. S. & Horner, R. H. (2003). Evaluation of a targeted intervention within a schoolwide system of behavior support. *Journal of Behavioral Education, 12*, 225-240.
- Hawken, L. S., Horner, R. H., & Todd, A. W. (2005). Check in check out (CICO) program description. *Journal of Positive Behavior Interventions, 6*, 90-104.
- Hawken, L. S., MacLeod, K. S., & Rawlings, L. (2007). Effects of the behavior education program (BEP) of office discipline referrals of elementary school students. *Journal of Positive Behavior Interventions, 9*(2), 94-101.

- Hawken, L. S., Vincent, C. G., & Schumann, J. (2008). Response to intervention for social behavior: Challenges and opportunities. *Journal of Emotional and Behavioral Disorders, 16*(4), 213-225.
- Hintz, J. M. (2005). Formative assessment using CBM-R cut scores to track progress toward success on state-mandated tests: Comparison of methods. *Journal of Psychoeducational Assessment, 23*(4), 304-325.
- Horner, R. H., & Sugai, G. (2002). *School-wide Positive Behavior Support: Implementers blueprint and self-assessment*. Eugene, OR: OSEP Center on Positive Behavior Support.
- Irving, L. K., Horner, R. H., Ingram, K., Todd, A. W., Sugai, G., Sampson, N. K., & Boland, J. B. (2006). Using office discipline referral data for decision making about student behavior in elementary and middle schools: An empirical evaluation of validity. *Journal of Positive Behavior Interventions, 8*(1), 10-23.
- Individuals with Disabilities Education Act of 2004 (IDEA). (2004). Public Law 108-446.
- Jones, V. (1993). Assessing your classroom and school-wide student management plan. *Beyond Behavior, 4*, 9-12.
- Kavale, K. A., & Spauling, L. S. (2008). Is response to intervention food policy for specific learning disability? *Learning Disabilities Research and Practice, 23*(4), 169-179.
- Kazdin, A. E. (1984). *Behavior modification in applied settings*. Homewood, IL: Dorsey Press.



- Kazdin, A. E. (1982). *Single-case research design: Methods for clinical and applied settings*. New York, NY: Oxford University Press.
- Klassen, R. M., Neufeld, P., & Munro, F. (2005). When IQ is irrelevant to the definition of learning disabilities: Australian school psychologists' beliefs and practice. *School Psychology International, 26*, 297-316.
- Landau, S., & Swerdlik, M. E. (2005). Commentary: What you see is what you get: A commentary on school-based direct observation systems. *School Psychology Review, 34*(4), 529-536.
- March, R. E., & Horner, R. H. (2002). Feasibility and contributions of functional behavior assessments in schools. *Journal of Emotional and Behavioral Disorders, 10*(3), 158-170.
- McCurdy, B. L., Kunsch, C., & Reibstein, S. (2007). Secondary prevention in the urban school: Implementing the behavior education program. *Preventing School Failure, 51*, 12-21.
- McLeod, A. M. (2007). Effects of the behavior education program (BEP) on office discipline referrals of elementary school students. *Journal of Positive Behavior Interventions, 9*(2), 94-101.
- Mellard, D. F., & Johnson, E. (2008). *RTI: A practitioners guide to implementing response to intervention*. Los Angeles, CA: Corwin Press.
- No Child Left Behind Act (NCLB). (2001). Public Law 107-110.
- Riley-Tillman, T. C., Chafouleas, S. M., & Briesch, A. M. (2007). A school practitioner's guide to using daily behavior report cards to monitor student behavior. *Psychology in the Schools, 44*(1), 77-89.

- Riley-Tillman, T. C., Chaouleas, S. M., Briesch, A. M., & Eckert, T. (2008). Daily behavior report cards and systematic direct observations: An investigation of the acceptability, reported training and use, and decision reliability among school psychologists. *Journal of Behavioral Education, 17*, 313-327.
- Smith, M. A., Williams, R. L., & McLaughlin, T. F. (1983). The daily report card as an intervention technique for classroom academic and social behavior: A review. *Journal of Special Education, 7*, 369-379.
- Sprague, J. R., Sugai, G., & Walker, H. (1998). Antisocial behavior in schools. In S. Watson & F.M. Gresham, (Eds.), *Handbook of Child Behavior Therapy*, 451-474.
- Steege, M. W., Davin, T., & Hathaway, M. (2001). Reliability and accuracy of a performance-based behavioral recording procedure. *School Psychology Review, 30*, 252-261.
- Sugai, G. (2003). Commentary: establishing efficient and durable systems of school-based support. *School Psychology Review, 32*(4), 530-535.
- Sugai, G. (2001). School climate and discipline: School-wide positive behavior support. Keynote presentation to and paper for the National Summit on Shared Implementation of IDEA. Washington, DC.
- Sugai, G., & Horner, R. H. (2002). The evolution of discipline practices: School-wide positive behavior supports. *Child and Family Behavior Therapy, 24*, 23-50.
- Sugai, G., & Horner, R. (2001). *School climate and discipline: Going to scale*. Paper presented at the National Summit on the shared implementation of IDEA.

- Todd, A. W. (2006). The effects of a targeted intervention to reduce problem behaviors: Elementary school implementation of check-in check-out. *Journal of Positive Behavior Interventions, 10*(1), 46-55.
- Todd, A. W., Horner, R. H, Sugai, G., & Sprague, J. R. (1999). Effective behavior support: Strengthening school-wide systems through a team-based approach. *Effective School Practices, 17*(4), 23-37.
- Todd, A. W., Kaufman, A., Meyer, G., & Horner, R. H. (2008). The effects of a targeted intervention to reduce problem behaviors: Elementary school implementation of check-in/check-out. *Journal of Positive Behavioral Interventions, 10*, 46-55.
- Turnbull, H. R. (2008). Today's policy contexts for special education and students with specific learning disabilities. *Learning Disability Quarterly, 32*, 3-9.
- Vannest, K. J., Davis, J. L., Davis, C., Mason, B. A., & Burke, M. D. (2010). Effective intervention for behavior with a daily behavior report card: A meta-analysis. *School Psychology Review, 39*, 654-672.
- Walker, B., Cheney, D., Stage, S., & Blum, C. (2005). Schoolwide screening and positive behavior support: Identifying and supporting students at-risk of school failure. *Journal of Positive Behavior Interventions, 7*, 194-204.
- Walker, H. M., Horner, R. H., Stage, S., & Blum, C. (2005). School-wide screenings and positive behavior supports: Identifying and supporting students at risk for school failure. *Journal of Positive Behavior Interventions, 7*(4), 194-204.
- Walker, H. M., Horner, R. H., Sugai, G., Bullis, M., Sprague, J. R., Bricker, D., & Kaufman, M. J. (1996). Integrated approaches to preventing antisocial behavior

patterns among school-age children and youth. *Journal of Emotional and Behavioral Disorders*, 4, 194-209.