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## Promoting Appropriately Engaged Behavior in the Classroom with Student Self-Monitoring and Teacher Feedback

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Promoting Appropriately Engaged Behavior in the Classroom with Student Self-Monitoring and  
Teacher Feedback

Julia Jensen

Thesis Submitted in Partial Fulfillment of the Requirements for the  
Degree of Master of Arts in Education

California State University, Monterey Bay

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SELF-MONITORING OF BEHAVIOR AND TEACHER FEEDBACK

Promoting Appropriately Engaged Behavior in the Classroom with Student Self-Monitoring and  
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## SELF-MONITORING OF BEHAVIOR AND TEACHER FEEDBACK

### **Abstract**

Student engagement in classroom activities promotes deeper learning and higher academic achievement, while noncompliant-disruptive behavior can lead to negative indicators.

Acknowledging the need to support students whose conduct falls into the latter category, schools have implemented proactive behavioral systems in various educational contexts. Within one particular approach, School Wide Positive Behavior Interventions and Supports (SWPBS), teachers and staff members employ specific strategies that promote positive student-adult relationships. The current study made use of one manifestation of the Check In, Check Out (CICO) system by providing a Daily Behavior Report Card (DBRC) that included goals related to maintaining eye contact and using desk materials appropriately. Four students with demonstrated behavioral needs participated in an AB single case design study where the research focused on increasing time spent in Appropriately Engaged Behavior (AEB) through the process of providing teacher feedback on a DBRC and embedding a student self-monitoring task. Results demonstrated an increase in AEB across all participants, but did not indicate a functional relationship to the intervention itself based on analysis of Percentage of Non-Overlapping Data (PND). While inconclusive, such positive increases suggest that use of both specific teacher feedback on behavior and self-regulatory practices may be beneficial in increasing AEB in general education middle-school age students.

*Keywords:* SWPBS, Check In, Check Out, self-monitoring, teacher feedback, student behavior

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Promoting Appropriately Engaged Behavior in the Classroom  
with Student Self-Monitoring and Teacher Feedback

**Literature Review**

A teacher's role in the classroom is to set a variety of behavioral and academic expectations and norms to establish a social environment within which the student functions (Ryan & Patrick, 2001). Research suggests that if the student responds to such efforts in a way that demonstrates appropriate involvement in learning, this can positively impact factors related to academic achievement (Finn & Rock, 1997). On the other hand, noncompliance and disruptive classroom behavior that demonstrates the student is not attending to the task appropriately can increase a student's risk for continued behavior problems, poor grades, and other negative indicators (Finn & Rock, 1997). Students exhibiting characteristics associated with attentional difficulties in particular often experience academic challenges related to unfocused attention to task and are less likely to meet academic, social, and behavioral expectations (Fergusson, Lynskey, & Horwood, 1997). If a student is not following the teacher with his or her eyes, for example, this student may miss pertinent classroom information and be less equipped than his or her peers to succeed.

In middle or junior high school specifically, teachers are frequently challenged with behavior management, which can lead to negative teacher-student interactions (Obenchain & Taylor, 2005; Rusby, Crowley, Sprague, & Biglan, 2011). With the inclusion of socioemotional and hormonal changes that occur during adolescence, students must constantly shift awareness of self and others to match both adult and peer expectations. In fact, disruption and noncompliance often rise to the top of the rationale behind numerous Office Discipline Referrals (ODRs). After several classroom-based interventions, parent notices, and other teacher efforts in behavior

management, teachers send ODRs to the main office at a particular school site to communicate an ongoing or severe problem to administration (Tobin & Sugai, 1999). In addition, this data can be used by the local intervention team to select or guide intervention programs and to evaluate the efficacy of such programs in regard to student behavior on campus (Clonan, McDougal, Clark, & Davison, 2007). Though this data is valuable in creating additional supports and making necessary changes, to begin to address behavioral challenges, teachers and other school personnel first need to understand the importance of building positive adult-student relationships and other systems of support as a means of preventing anti-social and anti-academic behaviors (Gable, Hester, Hester, Hendrickson, & Sze, 2005).

### **School-Wide Positive Behavior Interventions and Supports (SWPBS)**

The use of reactive, punitive consequences as a method of discipline may contribute to a negative teacher-student relationship, create a perception of unfairness, promote antisocial behavior in students, and even decrease academic achievement (Gottfredson, Gottfredson, Payne, & Gottfredson, 2005; Mayer & Butterworth, 1995; Sugai & Horner, 2008). An alternative approach adopted by many schools in the current education system is referred to as School Wide Positive Behavioral Interventions and Supports (SWPBS; Center on Positive Behavioral Interventions and Supports, 2004; Hawken & Horner, 2003; Horner, Sugai, Todd, & Lewis-Palmer, 2005; Todd, Campbell, Meyer, & Horner, 2008). The key ideology behind SWPBS is the idea that if an entire school staff can promote a climate of positive behavior campus-wide, students will be more likely to achieve academic goals in terms of test scores and grades (Fleming et al., 2005). Rather than focusing on individual student behavior as need arises or reacting punitively when problem behavior occurs, proactive systems teach expectations in advance. In many schools, for instance, student expectations fall under specifically defined and

predetermined categories such as respect and responsibility. When students demonstrate positive behavior, they receive reinforcement yet when challenges arise there is a team and a system in place to respond effectively (Durand & Carr, 1992; Horner et al., 2005; Sugai & Horner, 2006). This represents a strategically implemented, systematic process in which students are supported at their own level of need and can receive more individualized strategies as necessary.

Ongoing data related to the implementation of SWPBS across the country suggests that opportunities to improve classroom behavior and social interactions among students creates a more optimal, more productive, and safer learning environment (Bradshaw, Waasdorp, & Leaf, 2012; Sugai & Horner, 2008). By modeling, teaching appropriate school conduct explicitly, and reinforcing behaviors, current research indicates a reduction in discipline referrals and an increase in perceived school safety among staff members (Bradshaw, Mitchell, & Leaf, 2010; Horner et al., 2009). Such an approach has garnered much support for being proactive and utilizing multiple tiers of support, with Tier I tailored to all students in the general school population. Specific examples of Tier I interventions include incentive programs to reward positive behavior, school-wide presentations regarding expectations, and utilization of best practices in classroom behavior management (Tillery, Varjas, Meyers, & Collins, 2010).

Students who do not respond to the school-wide approach receive a more tailored, structured approach that helps them develop the skills needed to be successful in all areas. This would take the form of what is referred to as a Tier II intervention (Crone, Hawken, & Horner, 2004). Tier II interventions are intended to support 5-15% of the student population and can include strategies such as social skills training or creation of an individualized behavior plan (Crone et al., 2004). Some general examples at various school sites might include checking in daily with an adult, completing a Daily Behavior Report Card (DBRC) in each class period, or

participating in an activity or group program designed to improve social skills (Hoyle, Marshall, & Yell, 2011; Sugai et al., 2010). While many Tier II interventions might be site specific in terms of institutional implementation, the Check In, Check Out (CICO) intervention is both practical and useful in a variety of settings.

**Behavior Education Plan (BEP) or Check In, Check Out (CICO).** One commonly-implemented Tier II intervention is widely-known as CICO. This system provides students with adult feedback related to progress towards meeting the school-wide expectations and a means of helping students to learn to monitor their behavior (Hawken & Horner, 2003; March & Horner, 2002). As a general example, a student in CICO may spend five minutes before the first school bell *checking in* with an adult on campus such as the intervention specialist or another faculty member in order to review pertinent daily behavior goals. Then, the student's teachers would log positive changes in each class period and the student would *check out* at the end of the day with the same adult as the morning. Therefore, the CICO system leverages the student-adult relationship by allocating a consistent person with whom the student begins and ends each day.

To monitor progress, school staff might employ data garnered from rates of ODRs, direct observation data, or perhaps points earned on a DBRC. In one study involving 12 elementary-aged students, the number of ODRs was significantly decreased in over one-third of the students involved in the more specialized intervention of a Behavior Education Plan (BEP) in the classroom (Hawken, MacLeod, & Rawlings, 2007). Since a BEP is a slightly altered version of CICO, it is commonly used with students who present more acute behavior problems (Crone et al., 2004). For instance, whereas CICO might be implemented by the Intervention Specialist on site as a result of a teacher referral to the program, a BEP would most likely represent a product of more formal input from various sources such as the Student Site Team (SST), administration,

counseling, and SWPBS committee. Regardless, both represent coordinated efforts by a team of people to support student behavioral and academic goals.

To continue, other researchers also observed an increase in student time spent in Appropriately Engaged Behavior (AEB)--defined operationally as looking at the teacher and involved with task materials--as well as decreased rates of disruptive behavior (Miller, Dufrene, Sterling, Olmi, & Bachmeyer, 2014). In fact, research has demonstrated the use of direct observation in observing student gains (Campbell & Anderson, 2011; March & Horner, 2002; Miller et al., 2014; Mong, Johnson, & Mong, 2011). These studies represent positive behavioral growth for students within a system involving adult feedback and daily progress monitoring. Acknowledging the impact of this teacher-student relationship, the conversation regarding behavioral goals must be multidimensional and offer both participants the space to share their perspectives. As such, the student's voice can be incredibly powerful in this process and should be interwoven into the fabric of the intervention.

### **Self-Monitoring**

One way that a student's voice can lend itself to an enhanced facilitation of the behavioral intervention is to include the self-regulatory practice of self-monitoring. As previously explored, a typical manifestation of CICO or BEP in the classroom is the use of a DBRC that provides space for the aforementioned teacher-student communication and reflection and typically involves some type of rating or points system (Lane, Capizzi, Fisher, & Ennis, 2012; McCurdy, Kunsch, & Reibstein, 2007). Building upon the idea of student voice and input, there is a case to be made for the inclusion of self-monitoring as an additional component of the DBRC by embedding a student self-rating scale. Self-regulatory practices are inclusive of student self-awareness and ability to control behavior, which are essential skills to develop so

that over time systems of support can be removed to deepen independence. This represents a coordinated effort in leveraging socio-emotional learning to improve academic performance (Zins, Weissberg, Wang, & Walberg, 2004). By doing so, more responsibility for growth towards performance indicators (e.g., academic and behavior goals) rests with the student. The fact that it is crucial for teachers to reinforce or address both productive and unproductive classroom behaviors cannot be overlooked, but adult feedback becomes less prevalent (or perhaps simply less available) in a young person's life as they age and receive greater responsibilities in an effort to move towards autonomy and independence (Hunt, 1975). Therefore, it is critical that students develop the practice of self-monitoring and regulating their own progress both academically and behaviorally as a means of attaining skills conducive to academic success.

Placing responsibility on the student in managing their behaviors can help them form stronger connections to future learning and growth (Gureasko-Moore, DuPaul, & White, 2007). Forming the pivotal backbone of social cognitive learning theory, Bandura (1986, 1991) and Zimmerman (1989) both highlight the importance of self-regulation in making sense of one's environment, responding to input, and tailoring behavior accordingly. To apply these theories to classroom practices, students must tailor their actions to coincide with teachers' expectations for classroom behavior as well as their own self-reactive actions based on perceived consequences and rewards (Bandura, 1991).

Research is consistent in supporting the efficacy of self-monitoring, as evidenced through the implementation of a variety of methods and strategies across all grade levels and classroom scenarios (Ganz, 2008; Graham-Day, Gardner, & Hsin, 2010; Mooney, Ryan, Uhing, Reid, & Epstein, 2005; Wood, Murdock, & Cronin, 2002). A study by Wood, Murdock, Cronin, Dawson,

and Kirby (1998) implemented self-monitoring across three distinct content courses. The purpose was for general education students to track their on-task and off-task behavior. Results indicated that students were immediately more attentive to their academic tasks and improvement in academic achievement followed after the trial period (Wood et al., 1998). Another group of researchers studied one specific tactile strategy as a subset of self-monitoring routines, finding that the results of the intervention could be sustained short term as well (Moore, Anderson, Glassenbury, Lang, & Didden, 2013). These findings demonstrate the feasibility of applying this strategy of self-monitoring within the classroom and its efficacy in positively impacting behavioral changes.

A number of studies have been conducted with students in special education settings who demonstrate necessity for accommodations. For example, in research conducted with elementary students with Attention Deficit Hyperactivity Disorder (ADHD), self-monitoring of behavior was effective in increasing students' attention to task (Edwards, Salant, Howard, Brougher, & McLaughlin, 1995). Further, students with behavior disorders required fewer reminders within the special education resource setting (McLaughlin, Krappman, & Welsh, 1985). Such research continues to highlight the capacity of self-monitoring strategies to positively impact changes in student behavior, yet it is equally important to consider the role of the teacher in the process of promoting such growth.

### **Teacher Feedback**

Students, particularly those in transition between the elementary system and secondary environments, in their early years of adolescence, would likely benefit from additional support in self-monitoring, as reinforced by an adult. Additionally, teachers have the potential to play an essential role in students' self-regulation of behavior. For example, Otero and Haut (2015) found

that adult reinforcement in the form of comparing observer ratings with students' personal ratings of on-task behavior was successful in increasing accuracy of self-monitoring and reflection of behaviors as well as the incidence of on-task behavior. As a byproduct, this process of reinforcement and reflection often facilitates the building of a stronger teacher-student relationship (Hamre & Pianta, 2006).

Additional research supports the idea that factors related to poor school performance in young people can be ameliorated through the development of such relationships (Gable et al., 2005; Greenwood, 2001; Osher et al., 2004). If teachers can leverage this capacity for building relational connections within the classroom context, students' work in assessing their behavior can take on deeper levels of self-reflection and increase the likelihood of taking ownership of their education. Since this represents an opportunity to further increase the likelihood of student success in self-monitoring of behavior, there is still much to be researched on the topic.

### **Gaps in Current Research**

Miller, Dufrene, Olmi, Tingstrom, and Filce (2015) suggest that self-monitoring is a key factor in the process of decreasing the prevalence of the teacher feedback component in CICO under specialized circumstances. However, it is clear that both student self-monitoring *and* teacher feedback are essential to the efficacy of this system. Further research is needed in general education settings to explore the impact of a student self-rating system that has been strategically interwoven with teacher feedback. Specifically, this research should seek to explore the influence of a tailored student self-rating scale as a component of CICO as a means of increasing on-task behavior and decreasing disruptive outbursts (Otero & Haut, 2015). Given the ever-evolving role of positive behavioral supports in the contemporary United States general education system, further research is needed to explore the concept that student self-rating of classroom behavior

accompanied by teacher rating (feedback) may be effective in increasing incidence of AEB and, in turn, decreasing frequency of off-task, disruptive behavior.

## **Methods**

### **Research Question**

Does self-monitoring (i.e., student rating) combined with teacher feedback (i.e., teacher rating) increase the incidence of AEB of middle school students in the general education classroom?

### **Hypothesis**

It is hypothesized that the process of combining self-monitoring--a technique that has been validated over various methodologies in its use within both the general and special education classroom settings (Edwards et al., 1995; Ganz, 2008; Graham-Day et al., 2010; McLaughlin et al., 1985; Mooney et al., 2005; Moore et al., 2013; Wood et al., 2002; Wood et al., 1998)--with added teacher feedback will increase incidence of AEB in students.

### **Research Design**

This study used an AB single-case design with four students. This allowed for the effect of the independent variable on the dependent variable to be clearly observed and measured in each individual participant.

The baseline period (i.e., Phase A) consisted entirely of teacher rating of behavior on the DBRC and students were not given any feedback or asked to self-score on the rating form. Incidence of disruptive behavior for each student was recorded on the frequency tracking sheet (See Appendix A) with a minimum of five stable data points prior to beginning the intervention. Stability was reached at +/- 3 incidences of disruptive behavior. Once a stable baseline (i.e., Phase A) was achieved, the intervention period (i.e., Phase B) began and continued until a

therapeutic trend was observed. During the intervention, the students self-monitored their own behavior by marking a score on the student scale of the DBRC, but the teacher rating scale on the other side of the card constituted the DBRC portion of collected data and associated trends. The student rating scale served solely as a discussion piece as to whether the student's perception of behavior matched the teacher's. Data related to incidence of disruptive behavior for each student determined movement from baseline to intervention (i.e., phase change).

**Independent variable.** The independent variable in this study was the use of an individualized BEP in the specific form of a DBRC (Hawken & Horner, 2003; March & Horner, 2002). Student self-monitoring using a rating scale and corresponding teacher rating/feedback was embedded into the DBRC (Edwards et al., 1995; McLaughlin et al., 1985; Moore et al., 2013; Otero & Haut, 2015; Wood et al., 1998). Refer to Appendix B for a copy of the specific form.

**Dependent variable.** Miller and colleagues (2014) operationally defined AEB as looking at the teacher and being involved with task materials. To develop this definition further, students demonstrated AEB when: (a) looking at the teacher during instruction, (b) working with a peer when instructed to do so, (c) reading silently or writing to complete assignments when instructed to do so, (d) participating in a teacher-approved activity following the completion of work, or (e) talking with the teacher about academic work. The primary dependent variable (i.e., dependent variable used for phase change decisions) was frequency of exhibited disruptive behavior. Since academic engagement can be rather subjective in nature, disruptive behavior was embedded to indicate phase change on an objective basis. If a student was disrupting instruction by being off-task and calling out, it followed then that they were not engaged appropriately in the task.

### **Setting and Participants**

The experiment took place at a Central California public middle school. The middle school has 1075 total students (472 females and 603 males). This includes 391 English Language Learners. The school is 97.7% Hispanic or Latino, 1.3% White, 0.6% Filipino, 0.3% Black or African-American, and 0.1% American Indian or Alaska Native (California Department of Education). 93.2% of the students are socioeconomically disadvantaged.

The study was conducted in a general education classroom with approximately 25 students. Participants consisted of four middle school students, aged 12-14 years, all of whom were currently enrolled in seventh or eighth grade coursework. Because the researcher worked as a certificated teacher at the school in which the study took place, convenience sampling was used. Non-random sampling was used because participating students had all demonstrated a need for behavioral intervention based on data related to ODRs, teacher observation, recommendations, and academic achievement. Four students comprised the study sample. Each participant has been assigned a pseudonym to protect confidentiality.

**Delilah.** The first student is a 14 year old Hispanic female. In the first two quarters of school, the student received multiple F's on her report card. Delilah often speaks out of turn during whole-class instruction. While engaging with a partner, the student is often passive and rarely completes an assignment in its entirety. Delilah has been observed using technology unrelated to task during class rather than engaging in the coursework. When asked to get back on task, the student is often reticent to admit that her attention is focused elsewhere. Delilah's problem behaviors were off-task and talking out. Off-task was defined as failure to attend to the teacher during instruction (e.g., eyes diverted from teacher) or attend to assigned activities for at least three seconds (e.g., failure to manipulate relevant task materials) when instructed to do so.

The definition of talking out was any audible irrelevant vocalization or vocalization made without permission.

**Jared.** The second student is a 12 year old Hispanic male. Jared often turns around in class to face classmates rather than the teacher. When asked to return to the task at hand, the student struggles to maintain focus and often chooses to play with objects on his desk rather than share with a partner. Jared requires frequent reminders to concentrate on the task, even what is simply to be copied from a teacher-modeled activity. Jared's problem behaviors were off-task and talking out. The definitions of off-task and talking out reflect the same definitions in the previous student description.

**Mikaela.** The third student is a 13 year old Hispanic female. Mikaela has received several ODRs for defiance throughout the school year. The student has been known to leave the classroom without permission, use unapproved technology, and engage in social conversations during class time. As a result, the student has earned multiple unsatisfactory citizenship marks. Also, the student is typically looking or engaging elsewhere during partner work and commonly falls behind in completing work. Mikaela's problem behaviors were off-task and talking out. The definition of off-task and talking out reflect the same definitions in prior student descriptions.

**Jeremiah.** The fourth student is a 13 year old Hispanic male. Jeremiah earned multiple D's and F's in the first three quarters of school. The student is often observed speaking to peers across the classroom during whole-class instruction. He has difficulty staying faced towards the front of the class, in the assigned seat, and beginning work. Jeremiah has been observed engaging in an alternate task for another class in many instances rather than working on the classroom material. Jeremiah's problem behaviors were off-task and talking out. The definition of off-task and talking out reflect the same definitions in prior student descriptions.

**Measures**

To measure the effect of self-monitoring combined with teacher feedback on increased incidence of student time spent in AEB, a modified version of a DBRC was used. The DBRC included rating scales for both teacher and student in reference to identified target classroom behaviors under the categories of respect and responsibility. The paper form reflected the specific school-wide expectations of the researcher's educational setting, and included a rating scale for the student to personally self-monitor his or her own progress related to AEB.

Both student and teacher rating scales were designed as 5-point Likert-type scales. The scale moves from 1-5 with 1 as the behavior never observed and 5 as the behavior always observed. A sample form used to collect intervention data can be found under Appendix B.

**Validity.** The DBRC and teacher feedback in CICO as a general process has been implemented as a viable behavioral intervention tool in a classroom setting to be implemented by a general education teacher (Miller et al., 2014). Since it has been tailored to fit a specific educational context, the criteria related specifically to the school-wide expectations and were valid in the setting in which they were utilized. In terms of data collection, three inter-rater data collectors were used in this study, in addition to the primary researcher. All observers utilized the same data recording sheet and calibrated after each observation period.

**Reliability.** Initially conceptualized by the generic labeling of DBRC, point cards and self-monitoring items began to be used as a means of assessment rather than simply communication (Chafouleas, Riley-Tillman, & McDougal, 2002). In the current application through the CICO systematic Tier II intervention, the DBRC is a specific manifestation of what more recent literature has termed Direct Behavior Rating (DBR), a process that involves evaluative observation by adults in the natural classroom setting (Christ, Riley-Tillman, &

Chafouleas, 2009). Since it relies on estimation related to frequency of observed behavior, feasibility of implementation can be sustained in the general education classroom without the need for counting or tallying every specific occurrence. However, in seeking an objective measure, specific incidence of disruptive behavior was used as criteria for phase change from baseline to intervention.

Over the course of the study, three additional, independent observers on the school campus rated behavior for 20% of the sessions and achieved 80% inter rater reliability, an acceptable percentage when conducting educational research (Graham, Milanowski, & Westat, 2012). This represented an effort to calibrate scores and ensure reliability without researcher effect.

### **Intervention**

The components of the individualized intervention consisted of a DBRC in the form of a sheet of paper on the student's desk. Upon entering the classroom at the beginning of an instructional period, the student handed the form to the teacher to check-in regarding the behavioral focus points related to AEB. Consecutive intervention periods lasted fifty-minutes each and the student rated their behavior in the two categories (i.e., respect and responsibility) in the last two minutes of the intervention time. Then, the observer rated student behavior on the same sheet of paper and gave positive oral feedback related to AEB in the classroom. The check-out process took place in the minute following the end of the observation period and consisted of collecting the form and comparing ratings. The teacher rating was recorded as data related to AEB for the allocated intervention time. As previously noted, frequency of disruptive behavior was also recorded throughout the intervention period by the researcher.

## **Procedures**

During the intervention (i.e., Phase B), teacher feedback (e.g., positive commentary related to student performance) was given after the conclusion of marking the rating scales and was based on the extent to which the raters' scores matched. All feedback was positive and reflected the growth in the student rather than the areas of continued challenge. No feedback was given, however, during the baseline data collection period (i.e., Phase A).

**Data collection.** Data related to behavioral progress towards more time spent in AEB was recorded on the DBRC at the end of each 50-minute period of instruction. At the end of the academic period, the participant marked his or her score on the DBRC in the self-monitoring column (1-5 Likert-type scale). The researcher did the same on the teacher feedback portion of the DBRC (See Appendix B). This process was repeated daily during the intervention condition (i.e., Phase B). Teacher rating without student self-monitoring took place during the baseline condition to establish stability. In collecting phase change data related to disruptive behavior, the researcher used a frequency tracking sheet over subsequent 15-minute sessions.

**Baseline.** Baseline data on the sample was collected through teacher rating on the DBRC. Classroom conditions remained normal, with no usage of the student portion of the DBRC or rating scale associated with self-monitoring as a behavioral tool. The researcher recorded frequency of disruptive behavior to determine phase change (See Appendix A).

**Intervention.** Once the frequency data had stabilized in the baseline condition, the intervention and subsequent data collection on both the frequency tracking sheet and both rating scales (i.e., student and teacher) on the DBRC commenced. The student and teacher checked-in daily, participated in a 50-minute class period, rated incidence of AEB on both rating scales (student and teacher), and discussed or gave feedback to check-out of class. This continued until

a therapeutic trend in the data was observed, as evidenced by the data points reported on the frequency tracking sheet.

**Fidelity.** Use of a DBRC with self-monitoring procedures and teacher feedback was provided during the intervention. During the baseline period, classroom conditions remained in normal routine, with no DBRC utilized with the student. The researcher was assisted in the facilitation of the intervention by three other observers on-site for 20% of the sessions. Both the researcher and outside observers compared and discussed ratings. See Appendix C for the complete Fidelity Checklist. Also, the researcher met once with the Intervention Specialist overseeing the process in the instructional setting to ensure facilitation of the intervention for identified students.

### **Social Validity**

At the completion of the study, all three inter-raters completed a four-point Likert scale (i.e., 1 = *strongly disagree* to 4 = *strongly agree*) social validity questionnaire (See Appendix D). The questionnaire, adapted from Berger, Manston and Ingersoll (2016), consists of six questions designed to understand the perceived usefulness, significance and satisfaction with the implemented intervention (Kennedy, 2005). Participant responses were kept confidential and responses were summarized.

All three responders expressed agreement in the following areas: the treatment was effective; the treatment was acceptable for increasing the student's skills; the treatment quickly improved the student's skills; the responder would be willing to carry out the treatment in his or her own context to increase the student's skills; and the responder would suggest the use of this treatment to other individuals. Two of the responders also expressed agreement that the student's skills would remain at an improved level even after the treatment ends, but one was unsure and

chose not to respond.

### **Ethical Considerations**

Each student included in the study was assigned a pseudonym to protect confidentiality. The use of a DBRC in the classroom did not present a risk for any of the participants and was facilitated without a major change in daily student routine. Since the intervention took place on campus during a typical educational day, students did not spend any additional time outside of the school day.

In addition, the students included in the study may have received additional benefits from direct tailoring of a behavior plan within the classroom in which the researcher perceived the academic or behavioral challenge. The other students, however, were reasonably excluded due to a lack of demonstrated need for such individualized support. Generalized supports for all students remained in place.

**Validity threats.** Since evidence of experimental control was only evident in the comparison of student to self, there were certain limitations related to size of sample. Results across multiple participants or varying contexts would have the potential to signal relationships and other generalizations. Due to the single case study design, the ability to draw conclusions across individuals and settings was minimal. In addition, it may be important to note that other factors related to academic engagement, such as teacher delivery of content, influential presence of other peers, and other such extraneous variables may have contributed to the behavioral challenges in one specific class period. To every degree possible, the researcher kept other behavioral responses stable and followed general classroom norms. The observations took place at different times of the day due to the school site's daily rotating schedule. This represented a typical student experience and was unavoidable since the observations took place in only one

particular class period. Lastly, as previously noted, bias was minimized by utilizing independent observers.

### **Data Analyses**

Data was analyzed for visual trends to determine the degree to which participants' AEB increased, decreased, or remained unchanged in the intervals of time spent during baseline and intervention. Descriptive statistics and Percentage of Non-Overlapping Data (PND) were also reported.

### **Results**

Data were graphed for each study participant (See Figures 1 to 4). Two graphs were created for each participant to report data related to both average incidence of disruptive behavior over subsequent 15-minute intervals (i.e., dependent variable used for phase change decisions) and AEB (primary dependent variable). In the first set of graphs for each participant, the horizontal x-axis displays the session and the y-axis displays the average incidence of disruptive behavior. In the second set of graphs for each participant, the horizontal x-axis displays the session and the y-axis displays AEB. In the graphs that show AEB, two categories that denote eye contact with teacher (*respect*) and appropriate interaction with desk materials (*responsibility*) are displayed as separate variables. Both categories were averaged to calculate change in AEB.

### **Delilah**

**Disruptive behavior.** Delilah's average incidence of disruptive behavior during the baseline period was 9.7 with a range of 4 to 15. In the intervention phase, Delilah had a mean incidence of disruptive behavior of 4 with a range of 1 to 8 (See Figure 1). From baseline to

intervention, Delilah showed a decrease in disruptive behavior by almost six incidences per 15 minute interval. This is a 58.8% decrease.

**AEB.** Average AEB was calculated using the five-point Likert-type scale and divided into two categories: eye contact (*respect*) and appropriate use of materials (*responsibility*). In the first category, Delilah scored a 4 during baseline and a 5 during intervention. In the second category, she scored a 3 during baseline and a 5 during intervention. In the first category, Delilah moved across scores on the Likert-type scale, in baseline demonstrating a score of 4 (*almost every time*) and during intervention scoring a 5 (*every time*). In addition, in the second category, she improved her score from 3 (*occasionally/sometimes*) to 5 (*every time*) by the end of the intervention. Averaging these positive changes, this represents a 37.5% increase in AEB (See Figure 1).

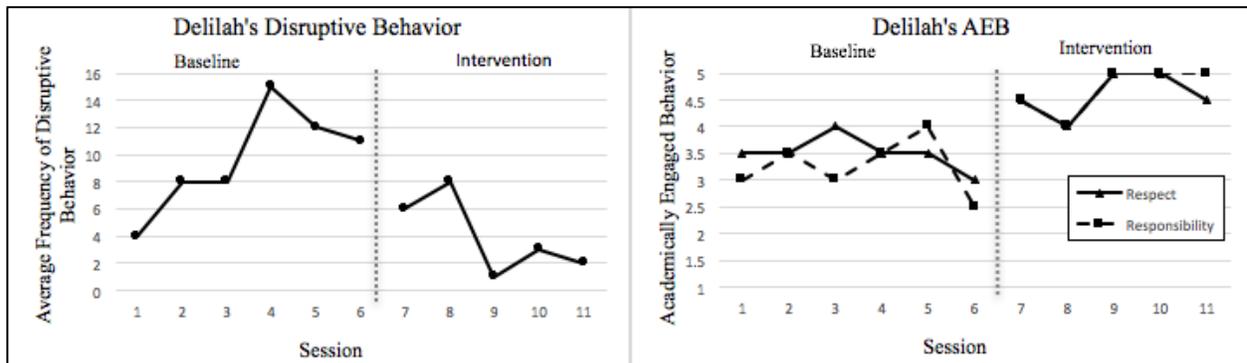


Figure 1. Delilah's average incidence of disruptive behavior over 15-minute intervals (left); AEB ratings over multiple sessions of DBRC use (right).

## Jared

**Disruptive behavior.** Jared's average incidence of disruptive behavior during the baseline period was 12.9 with a range of 6 to 21. In the intervention phase, Jared had a mean incidence of disruptive behavior of 8.5 with a range of 4 to 15 (See Figure 2). From baseline to

intervention, Jared showed a decrease in disruptive behavior by approximately 4 incidences per 15 minute interval. This is a 34.1% decrease.

**AEB.** Average AEB during baseline was calculated using the five-point Likert-type scale and divided into two categories: eye contact (*respect*) and appropriate use of materials (*responsibility*). In the first category, Jared scored a 2 during baseline and a 3 during intervention. In the second, he scored a 2 during baseline and a 4 during intervention. In the first category, Jared moved across scores on the Likert-type scale, in baseline demonstrating a score of 2 (*almost never*) and during intervention earning a 3 (*occasionally/sometimes*); however, in the second category, he improved his score from 2 (*almost never*) to 4 (*almost every time*) by the end of the intervention. Averaging these positive changes, this represents a 37.5% increase in AEB (See Figure 2).

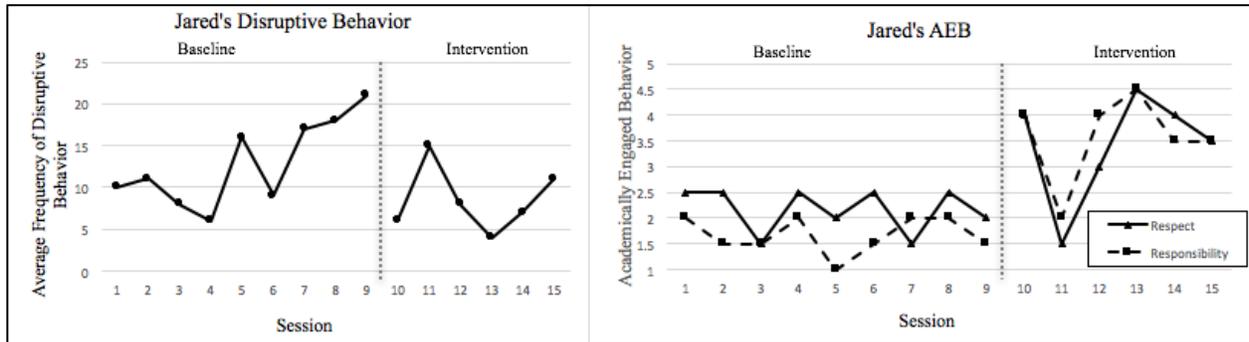


Figure 2. Jared’s average incidence of disruptive behavior over 15-minute intervals (left); AEB ratings over one session of DBRC use (right).

**Mikaela**

**Disruptive behavior.** Mikaela’s average incidence of disruptive behavior during the baseline period was 10.1 with a range of 3 to 14. In the intervention phase, Mikaela had a mean incidence of disruptive behavior of 4.7 with a range of 2 to 9 (See Figure 3). From baseline to

intervention, Mikaela showed a decrease in disruptive behavior by approximately 5 incidences per 15 minute interval. This is a 53.5% decrease.

**AEB.** Average AEB during baseline was calculated using the five-point Likert-type scale and divided into two categories: eye contact (*respect*) and appropriate use of materials (*responsibility*). In the first category, Mikaela scored a 3 during baseline and a 4 during intervention. In the second, she scored the same, a 3 during baseline and a 4 during intervention. In both categories, Mikaela improved her score from 3 (*occasionally/sometimes*) to 4 (*almost every time*) by the end of the intervention. This is a 25% increase in AEB (See Figure 3).

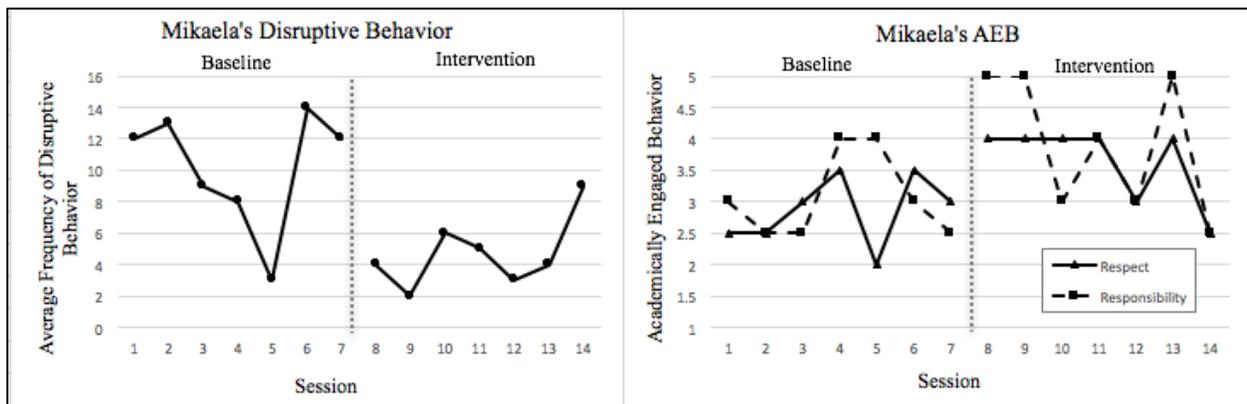


Figure 3. Mikaela's average incidence of disruptive behavior over 15-minute intervals (left); AEB ratings over one session of DBRC use (right).

## Jeremiah

**Disruptive behavior.** Jeremiah's average incidence of disruptive behavior during the baseline period was 10.6 with a range of 2 to 17. In the intervention phase, Jeremiah had a mean incidence of disruptive behavior of 5.7 with a range of 2 to 10 (See Figure 4). From baseline to intervention, Jeremiah showed a decrease in disruptive behavior by close to 5 incidences per 15 minute interval. This is a 46.2% decrease.

**AEB.** Average AEB was calculated using the five-point Likert-type scale and divided into two categories: eye contact (*respect*) and appropriate use of materials (*responsibility*). In the first category, Jeremiah scored a 3 during baseline and 4 during intervention. In the second, he scored the same, a 3 during baseline and a 4 during intervention. In both categories, Jeremiah moved from 3 (*occasionally/sometimes*) to 4 (*almost every time*) by the end of the intervention. This is a 25% increase in AEB (See Figure 4).

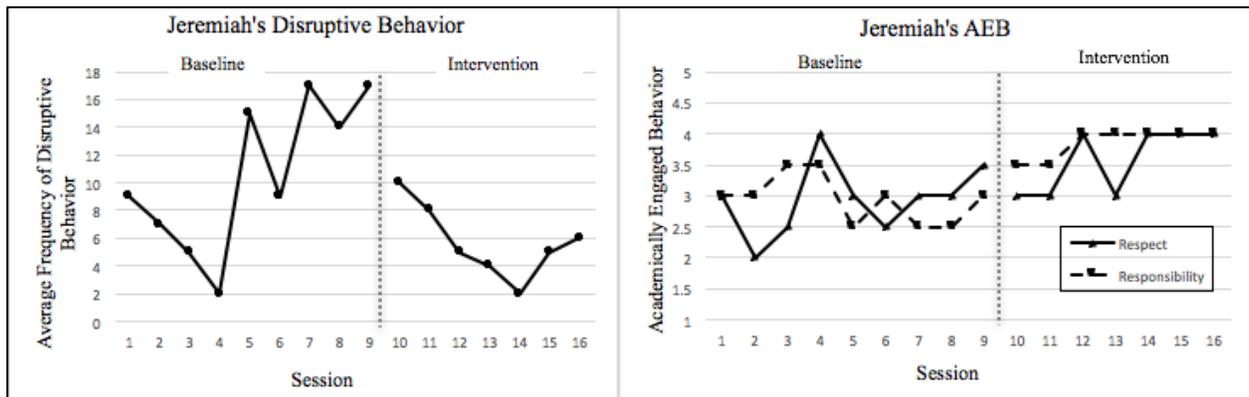


Figure 4. Jeremiah’s average incidence of disruptive behavior over 15-minute intervals (left); AEB ratings over one session of DBRC use (right).

Overall, all students recorded some measure of growth in both areas: decrease in disruptive behavior and increase in AEB. See Table 1 for a summary of the results.

Table 1

*Decrease in Disruptive Behavior/Increase in AEB/PND*

Participant	Decrease in Disruptive Behavior	Increase in AEB	PND
Delilah	58.8%	37.5%	60%
Jared	34.1%	37.5%	16.7%
Mikaela	53.5%	25%	16.7%
Jeremiah	46.2%	25%	0%

Note. PND = Percent of non-overlapping data.

### Discussion

The purpose of this study was to provide another empirical demonstration of the efficacy of a behavior modification tool (DBRC) plus additional factors in positively improving classroom conduct. It was hypothesized that the inclusion of teacher feedback and self-monitoring with the use of a DBRC within the general education classroom would increase AEB. Since this tool is included in the CICO system within SWPBS, the current research sought to explore several tools working in conjunction with one another on a DBRC tailored to a specific school context.

In considering the results of this study through the lens of previously cited research, all students experienced a positive, upward trend in AEB, reinforcing the efficacy of the use of a DBRC with teacher feedback (Otero & Haut, 2015) and self-monitoring (Ganz, 2008; Graham-Day et al., 2010; Mooney et al., 2005; Wood et al., 1998; Wood et al., 2002). Specifically, the increase in AEB for Delilah and Jared was 37.5%; both Mikaela and Jeremiah demonstrated a 25% increase. Although this demonstrated progress in promoting positive student behaviors, the percentage of non-overlapping data (PND) for the primary dependent measure used for phase change (i.e., disruptive behavior) for the four participants reflected a varied data set: Delilah 60%, Jared 16.7%, Mikaela 14.3%, and Jeremiah 0%. Delilah was the only participant whose data represented even questionable effectiveness within the range of 50-70% PND (Scruggs & Mastropieri, 1998). Although Delilah's PND was sizable, the other three participants' data trends demonstrated numerous instances of overlap between baseline and intervention phases. Therefore, there was not a functional relationship between increased AEB and the process of providing teacher feedback on a DBRC within the CICO system on campus and embedding a student self-monitoring task. Refer back to Table 1 for a summary of the results.

Further, no positive correlation could be maintained with such data sets. This was largely due in part to a few outliers in the baseline data sets. During data collection, there was at least one day per participant that another student's absence impacted the class dynamic. Also, certain activities seemed to appeal to the participants more or required a different level of focus than others. Lastly, early morning and late afternoon hours saw dips or spikes in disruptive behavior since many students may still have been waking up or beginning to consider after-school plans respectively. Considering that the results were largely inconclusive, there was no way to confidently associate the intervention with a definitive increase in AEB, seeing as the behavior was highly variable.

It is important to note that this study was somewhat unique in that use of the DBRC with teacher feedback and student self-monitoring was not separated into multiple intervention periods. As such, while Miller and colleagues (2015) found that self-monitoring could be a maintenance strategy for CICO that would help continue the positive effects of the DBRC and teacher feedback, increase in AEB was associated with both use of DBRC and teacher feedback with or without self-monitoring. Based on the results of the current study, the use of both teacher feedback and self-monitoring concurrently adds to the potential for increased AEB. Also, since the aforementioned study used only primary grade students, this study suggests that older students will experience enhanced positive behavioral trends as well.

### **Limitations and Further Research**

While study results add to the potential for use of this combination of strategies with students exhibiting disruptive and disengaged behavior in the classroom, a notable limitation in assigning meaning to the results is that the study included only four participants selected through purposeful convenience sampling. This was a direct result of time constraints, student

qualification in the area of need, and accessibility of the sample to the researcher. In addition, this type of sampling also relied upon the fact that the researcher had to be particular in selecting students across multiple class periods, so as to facilitate feasible data collection for each student. Also, some students simply did not qualify due to lack of identified behavioral need. Notably, the study began with five students, but one was dropped due to excessive absences. Additionally, the limited length of this study from baseline to intervention indicates that it is rather challenging to assign long-term implications to this study. Since the intervention was not withdrawn, either, it remains unknown whether the effects of the intervention will continue past the use of the DBRC or even transfer to other educational contexts.

As such, further research should explore the long-term maintenance of AEB with middle school general education students, preferably with a larger, random sample. Since there is a plethora of research with elementary school students, it is important to demonstrate efficacy with the student population of the middle grades. Such studies should withdraw self-monitoring techniques, for example. To go back to the purpose of SWPBS as a whole, given access to a variety of classroom settings, research exploring parent involvement in this system could add to the body of knowledge surrounding implementation of CICO and other individual intervention programs across campus and into student homes.

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**Appendix A**

Frequency of Behavior Tracking Sheet

- a) **Off-Task:** failure to attend to the teacher during instruction (e.g., eyes diverted from teacher) or attend to assigned activities for at least three seconds (e.g., failure to manipulate relevant task materials) when instructed to do so.
- b) **Calling Out:** any audible irrelevant vocalization or vocalization made without permission.

\*\*Fill out all necessary student information, time, and date. Then, begin timer for 15 minute intervals, recording the start and end times. Within each 15-minute period, mark a tally for each observed instance of disruptive behavior (criteria listed above). In the column on the far right, calculate the total disruptive behaviors observed in the time interval.

<u>Student Pseudonym:</u>	<u>Date:</u>	<u>Class Period Time Frame:</u>	<u>Observer:</u>
<u>Interval 1:</u> 15 min	START TIME: _____  END TIME: _____	<u>Frequency Count:</u>  _____	TOTAL:  _____
<u>Interval 2:</u> 15 min	START TIME: _____  END TIME: _____	<u>Frequency Count:</u>  _____	TOTAL:  _____
<u>Interval 3:</u> 15 min	START TIME: _____  END TIME: _____	<u>Frequency Count:</u>  _____	TOTAL:  _____

Appendix B

Daily Behavior Report Card (DBRC)

**Daily Behavior Report Card**

Student Name: \_\_\_\_\_ ID: \_\_\_\_\_ Date: \_\_\_\_\_ Teacher: \_\_\_\_\_

**Check-In:**

- Student greets teacher at the door.
- Student retrieves card from folder
- Teacher reminds student of expectations for the class period.

School Expectation	Student Rating	Teacher Feedback
<b>R</b> <b>RESPECTFUL</b>	I looked at the teacher while she was speaking to the whole class. 1 Never 2 Almost Never 3 Occasionally /Sometimes 4 Almost every time 5 Every time	Student looked at me as I spoke to the whole class. 1 Never 2 Almost Never 3 Occasionally /Sometimes 4 Almost every time 5 Every time
	I looked at the teacher while she was speaking directly to me. 1 Never 2 Almost Never 3 Occasionally /Sometimes 4 Almost every time 5 Every time	Student looked at me as I spoke to him/her. 1 Never 2 Almost Never 3 Occasionally /Sometimes 4 Almost every time 5 Every time
<b>R</b> <b>RESPONSIBLE</b>	I started on the work immediately after receiving instructions. 1 Never 2 Almost Never 3 Occasionally /Sometimes 4 Almost every time 5 Every time	Student began work right away and only had to be asked once. 1 Never 2 Almost Never 3 Occasionally /Sometimes 4 Almost every time 5 Every time
	I used materials on my desk to accomplish the task effectively. 1 Never 2 Almost Never 3 Occasionally /Sometimes 4 Almost every time 5 Every time	Student used materials on desk to accomplish work. 1 Never 2 Almost Never 3 Occasionally /Sometimes 4 Almost every time 5 Every time

**Check-Out:**

- Student rates behavior at end of class period.
- Student gives card to teacher to rate behavior.
- Teacher and student take 30 seconds to debrief about the successes/challenges during class period.

**Appendix C**

## Intervention Fidelity Checklist

**\*Place a checkmark as items are observed.**

1. Daily Behavior Report Card (DBRC) placed on student desk prior to entering class. \_\_\_
2. Teacher begins timer for five minute intervals and marks score on frequency tracking form for each student. \_\_\_
3. Teacher moves through daily routine at the beginning of class: taking attendance, reminding students of warm-up task, passing out papers. \_\_\_
4. Teacher checks in with student, quietly reminding him or her of the daily goals. \_\_\_
5. Only positive comments given to students prior to student exit from the class. \_\_\_
6. Both teacher and students mark the overall ratings in the categories on the student and teacher portions of the DBRC respectively. \_\_\_
7. Teacher collects card and ends the conversation with student. \_\_\_

**Appendix D**

Social Validity Questionnaire

<b>Questions:</b>		<b>1</b> <b>Strongly disagree</b>	<b>2</b> <b>Disagree</b>	<b>3</b> <b>Agree</b>	<b>4</b> <b>Strongly Agree</b>
1	This treatment was effective				
2	I found this treatment acceptable for increasing the student's skills				
3	I think the student's skills would remain at an improved level even after the treatment ends				
4	This treatment quickly improved the student's skills				
5	I would be willing to carry out this treatment myself if I wanted to increase the student's skills				
6	I would suggest the use of this treatment to other individuals				