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Are Breaks Better? A Comparison of Breaks Are Better to Check-In Check-Out

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Abstract

Identification and validation of effective Tier 2 interventions that address a wide range of student-level factors is critical to the sustainability of positive behavior interventions and supports (PBIS). Within the context of Check-in Check-out (CICO), function of behavior affects outcomes for many students, especially for those who engage in problem behavior to escape from tasks. Therefore, more research is needed to understand if and how we can support students with escape-maintained behavior. Breaks are Better (BrB) is a modified version of CICO that includes a system for taking breaks. The current research on BrB is limited but promising. The purpose of this study was to compare the effectiveness of CICO to BrB. Using a multitreatment design, we compared the effects of each intervention by measuring problem behavior and academic engagement across five elementary students who engaged in problem behavior to escape from tasks. Overall results were mixed and ranged from strong effects of BrB to no differential effects. However, despite the results, teachers and students consistently rated BrB as being a more preferable intervention. We conclude with limitations and implications for practice.

Keywords

behavioral, interventions, positive behavioral intervention and supports, multitiered systems of support

Students who engage in higher than average rates of problem behavior are viewed as at risk for developing emotional and behavioral disorders (EBD). Risk is often determined by criteria set by schools and may include data from universal screeners or behavior referral data. Without intervention, this population of students is likely to have some of the poorest outcomes of all students due to abundant academic, behavioral, and social risk factors (Algozzine et al., 2011; Lane et al., 2008; McIntosh, Flannery, et al., 2008; Morgan et al., 2008; Reid et al., 2004; Wagner et al., 2005). While a comorbidity of risk factors can negatively impact classroom experience (Nelson & Roberts, 2000; Scott et al., 2011), teachers can implement behavioral supports to increase students' prosocial behavior and school engagement.

Tier 2 Behavior Supports

Positive Behavior Interventions and Supports (PBIS) is a framework that includes a continuum of behavior support ranging from universal Tier 1 programs to highly individualized Tier 3 supports (Sugai & Horner, 2002). Tier 2 is an intermediate level, providing targeted, yet efficient, interventions for students who are at risk for developing long-term behavior or emotional problems. These targeted interventions include explicit instruction in behavioral skills, frequent feedback, progress monitoring, and parent communication (Anderson & Borgmeier, 2010). Tier 2 is touted as efficient because many programs are packaged as a standard protocol that can be applied in a similar fashion across many students (Anderson & Borgmeier, 2010). Schools are encouraged to assess student-level variables and use these data to match students with an appropriate Tier 2 program aligned with their needs. Examples of student-level variables include preference, function of behavior, and topography of behavior (Majeika, Bruhn, et al., 2020). While many Tier 2 standard protocols exist (e.g., social skills and coping power), Check-in Check-out (CICO; Crone et al., 2010) is a commonly researched and implemented program for students who engage in problem behavior in the classroom (Majeika, Van Camp, et al., 2020).

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CICO is implemented in a daily cycle and includes: (1) selection of an adult mentor, (2) morning check in with mentor, (3) use of a Daily Progress Report (DPR) to track student progress toward meeting behavioral expectations, (4) teacher feedback across the day, (5) afternoon check-out with mentor, and (6) parent communication (Crone et al., 2010). These components are intended to cultivate positive student–teacher relationships and increase behavioral feedback to students. The collective research on CICO shows evidence for increasing positive behavior and reducing problem behavior (Maggin et al., 2015; Wolfe et al., 2015). However, CICO does not work for all students, and a mismatch between CICO and function of problem behavior may account for nonresponse (Maggin et al., 2015; Swoszowski et al., 2013). Therefore, function of behavior, as assessed through a functional behavioral assessment (FBA), is a salient variable to consider when selecting and implementing Tier 2 interventions like CICO.

Functional Behavioral Assessment (FBA)

An FBA is a diagnostic approach used to understand the mechanisms through which behavior is maintained. FBA procedures exist along a continuum of precision and technical adequacy. Indirect assessments involve record reviews, rating scales, or interviews completed by individuals who frequently interact with a student (Cooper et al., 2019). Descriptive assessments involve the direct observation of antecedent and consequence events surrounding a target behavior (Cooper et al., 2019). Both indirect and descriptive FBA procedures provide correlational data on what environmental arrangements maintain behavior. At the most technically precise end of the FBA continuum is functional analysis, which is an experimental manipulation of environmental antecedent and consequence events to determine what reinforces problem behavior (Hanley et al., 2003; Iwata et al., 1994). While the most-intensive FBAs are commonly recommended at Tier 3 (Lewis et al., 2017), FBA interviews and brief observations are more common Tier 2 (Klingbeil et al., 2019).

The goal across all types of FBA is to identify the function of behavior and use that data to select and individualize interventions. Functions of behavior include (a) access to attention, (b) escape, (c) access to tangibles, or (d) access to sensory stimulation. Practitioners can use the function of behavior to choose interventions with components aimed to teach and reinforce prosocial replacement behaviors to reduce problem behavior (Umbreit et al., 2007). For students at risk for EBD in school settings, access to attention and escape from tasks are commonly reported functions of behavior (Anderson et al., 2015; Majeika et al., in preparation). At the Tier 2 level, most evidence-based Tier 2 programs increase access to adult attention and fail to specifically account for other functions of behavior that at-risk students are likely to display (Stormont & Reinke, 2013). This is problematic for students who have escape-maintained behavior. Therefore, assessing function during the intervention planning process is essential, given that function of behavior may affect a student's response to an intervention if the intervention does not appropriately target functionally equivalent replacement behaviors (e.g., March & Horner, 2002; McIntosh et al., 2009).

In the context of Tier 2, FBA data can be used to match students to an appropriate program or adapt one currently in place. For example, Fallon and Feinberg (2017) matched students with attention-maintained behavior to CICO to ensure students received an intervention that provided prosocial replacement behaviors for negative attention-seeking behavior. For students with escape-maintained behavior, researchers have matched students to Breaks are Better (BrB; Boyd & Anderson, 2013) and Academic and Behavioral CICO (ABC; Turtura et al., 2014). Both programs are adapted version of CICO that include components (e.g., breaks and contingent task escape) to address escape-maintained behavior. In a systematic literature review on 11 studies that implemented a function-based version of CICO, Klingbeil and colleagues (2019) found that the majority of studies adapted CICO to address attention or escape functions after using the standard protocol first. Of the three studies that selected a function-based program from the start of treatment, all did so for students with escape-maintained behavior (Boyd & Anderson, 2013; Swain-Bradway, 2009; Turtura et al., 2014). Selecting CICO for students with an escape function may not be an efficient use of resources if a more functionally aligned program can be used from the start of treatment instead. While none of the escape-focused programs used by studies in the review were evidence-based programs (Klingbeil et al., 2019), the implementation of these adapted versions for students with escape-maintained behavior is worthy of exploration to address the needs of this population of students.

Escape-Maintained Behavior

When behavior that allows an individual to avoid or escape from a task is reliably reinforced, an FBA will identify the function of that behavior as escape-maintained. To address this function of behavior, an intervention must include components that teach the student a functionally equivalent replacement behavior and reinforce that behavior, rather than the problem behavior (Cooper et al., 2019). Escape-related intervention components include functional communication training (i.e., asking for help or a break), instructional choice, curricular and instructional revision, or demand fading (Geiger et al., 2010). Currently, there is a paucity of evidence-based Tier 2 standards protocols that specifically include these elements within the intervention

package (Stormont & Reinke, 2013). As such, many researchers have adapted, or modified, Tier 2 interventions to better align with the needs of students with escape-maintained behavior.

For example, Kilgus and colleagues (2016) used the Functional Assessment Checklist for Teachers and Staff (FACTS; March et al., 2000) to assess the function of two elementary students. One participant engaged in attention-maintained behavior and the other engaged in escape-maintained behavior. The researchers used an alternating treatment design to compare the effectiveness of traditional CICO to an adapted version that includes a task escape contingency as a reward for meeting the daily point goal. The authors identified functional relations for increasing academic engagement and decreasing problem behavior across both participants for their function-aligned interventions. In other words, the participant with escape-maintained behavior was most successful in the conditions with adapted version of CICO. While Kilgus and colleagues implemented the adaptations from the onset of intervention, others have used a data-based decision-making (DBDM) process to implement individualized function-based adaptations due to nonresponse. MacLeod and colleagues (2016) adapted CICO for students who were not consistently meeting their daily goal and who had received at least one office discipline referral. Authors assessed function using an interview and direct observation of behavior. For the one participant with escape-maintained behavior, the adaptations to CICO included additional time to practice spelling words each week and self-monitoring for on-task behavior. Compared to baseline, the participant's problem behavior was lower during the implementation of the adapted version of CICO.

Despite the effectiveness of applying individualized function-based adaptations, these supports require additional resources (e.g., teacher training; time to select, train, and implement each adaptation). As a result, some may argue that using an FBA to plan individualized function-based supports to CICO is more closely aligned with Tier 3 supports than Tier 2. Moreover, teachers have acknowledged the lack of knowledge and buy-in for engaging with individual student-level data (Meyer & Behar-Horenstein, 2015; Reeves & Burt, 2006; Scott & Martinek, 2006). One solution is to focus on function-based standard protocols that align with the effective yet efficient logic of Tier 2. BrB (Boyd & Anderson, 2010) is one example of a function-based standard protocol designed for students with escape-maintained behavior.

BrB Program

BrB is an adapted version of CICO that includes scheduled breaks for students who have been identified as having escape-maintained problem behavior (Boyd & Anderson, 2010). The goal of BrB is to teach and reinforce taking breaks as prosocial replacement behavior for problem behavior. The program contains all components of CICO plus the following function-based modifications: (a) behavioral expectations defined for academic behaviors, (b) procedures for students to take breaks, and (c) feedback and reinforcement for taking breaks appropriately. While these elements alone are recommended practices for students with escape-maintained behavior (Geiger et al., 2010), students at the Tier 2 level may engage in behavior to access attention *and* escape from tasks; therefore, it is important that BrB still include all core components of CICO to account for all variations of function.

The current evidence to support BrB is promising but preliminary. Boyd and Anderson (2013) tested the effects of BrB on three typically developing elementary school boys with escape-maintained problem behavior using A-B-A-B designs. To assess function of behavior, the authors used the FACTS to interview the teachers in addition to a structural analysis (i.e., series of direct observations of student behavior). After identifying students with escape-maintained behaviors, teachers implemented BrB. Authors compared student behavior during BrB and no-intervention baseline phases. For two participants, the authors identified a functional relation between BrB and a reduction in off-task behavior. In an unpublished dissertation, Evans (2016) evaluated the effects of BrB with four typically developing males in elementary school with escape-maintained problem behavior. The author hypothesized function of behavior through an interview with the principal and classroom teachers but did not specify if a published interview protocol was used. After the function was hypothesized, the author trained the teacher to implement BrB in their classrooms. The results from the multiple baselines across participants design showed a functional relation between BrB and decreases in off-task behavior and increases in work completion. However, the authors used a nonconcurrent multiple baseline design which limits what we can infer from the results. While these two studies point to BrB's potential effectiveness, more research is needed.

Purpose

The bread and butter of Tier 2 logic is the notion of efficiency achieved using a standard protocol intervention. Therefore, it is important that teachers have multiple interventions to choose from when matching students to Tier 2 behavioral interventions. Given that students at risk for EBD are most likely to engage in problem behavior to access attention or escape from tasks (as opposed to sensory or escape attention; Majeika et al., in preparation), Tier 2 standard protocols that address either type of behavior should exist. Most Tier 2 standard protocols like CICO incorporate elements to provide positive access to adult attention (Stormont & Reinke, 2013). As such, there remains

a gap in the field for standard protocols addressing escape-maintained behavior. It is possible that BrB can fill this gap, but more evidence is needed to confirm its effectiveness. Moreover, more research is needed to test the effectiveness of a BrB above and beyond of the effects of a nonfunction-based standard protocol (i.e., CICO). Therefore, this study will answer the following research questions: (a) For elementary students with escape-maintained problem behavior, as compared to standard protocol CICO, does BrB decrease problem behavior and increase engagement? and (b) Do teacher and student social validity ratings reveal differential perceptions of CICO and BrB?

Method

Setting and Participants

This study took place in two elementary schools in an urban district in Tennessee. Emmanuel, Alexander, Diego, and Zoe attended School A, which served 603 students. School A was highly diverse and with 56.2% Hispanic/Latino, 24.2% white, 18.7% black, 0.9% Asian, and 0.2% Hawaiian or Pacific Islander. School A has implemented PBIS for the past 2 years and according to the Tiered Fidelity Inventory (TFI; Algozzine et al., 2019), was implementing 33% of the recommended Tier 1 practices (Note: there were no data available for Tier 2 implementation). With the TFI, scores of 70% typically indicate an acceptable level of implementation (Algozzine et al., 2019). Jeremiah attended School B, which served 333 students and included 19.8% Hispanic/Latino, 13.8% white, 64.9% black, and 1.5% Asian students. Close to half of the student body was male (52.8%) and 52.3% were considered economically disadvantaged. Based on TFI ratings, School B was implementing 70% of Tier 1 practices and 77% of Tier 2 practices for the past school year. We recruited five participants across four classrooms and four teachers.

All participants were nominated by a teacher due to problem behavior and met three additional inclusion criteria to confirm a need for Tier 2 intervention. First, students scored in the at-risk range on the Social Behavior subscale of the Social, Academic, and Emotional Behavior Risk Screener (SAEBRS; Kilgus et al., 2014) to confirm teacher reports of problem behavior. Second, the topography of problem behavior had to be nondangerous (i.e., behavior that is not a threat to self or others). This criterion was chosen because Tier 2 interventions are intended for students who display problem behavior that interferes with their learning but does not pose a safety risk (Anderson & Borgmeier, 2010). Finally, problem behavior had to be hypothesized as escape-maintained by the FACTS. None of the students nominated for the study were diagnosed with a disability and all received free and reduced lunch (FRL). Alexander and Emmanuel were already enrolled in CICO at the start of the study. We present detailed student and teacher demographic information in Table 1. Below, we provide the context in which each participant was observed. These settings were selected by teachers as the most problematic time of day for each individual student.

Alexander and Emmanuel. We observed Alexander during writing, which was the last section of first period English Language Arts (ELA) each morning. During this period, students completed independent work at their desks and then sat on the carpet for a whole-group lesson. We observed Emmanuel in the same classroom during word work, which was the very first 30 minutes of the ELA block each morning. Word Work included a whole class mini lesson followed by independent tasks. Emmanuel sat at his desk in a group with four other students during this time. Their classroom had 22 students (14 males, 2 with an Individualized Education Plan [IEP], 15 English Language Learners [ELLs], and 22 eligible for FRL). The classroom had groupings of six student desks and a carpet in the front of the room. Alexander's desk was in the back of the room not connected to a group.

Zoe. We observed Zoe during the mini lesson and independent work portion of her writing block each afternoon. During independent work, Zoe worked at a student table or at a small group table with two or three other students. The classroom teacher monitored student work or met with a small group during this time. Her classroom consisted of 25 students (16 male, 0 with an IEP, and 1 ELL). The classroom was arranged with five student tables, a carpet in the front of the room by the whiteboard, a small group table, and a classroom library.

Jeremiah. Observations occurred in the afternoons at the end of whole-group math (instruction provided by student teacher) and the beginning of centers when Jeremiah was at the iPad station. He sat at a table with two other students. During this time, his teacher instructed a small group while simultaneously monitoring student behavior. The student teacher and a paraprofessional also monitored students. Jeremiah's classroom consisted of 18 other students (9 males, 6 with an IEP, 5 ELL, and 17 eligible for FRL). The classroom was arranged with five student tables, a carpet by the whiteboard, and a small group teacher table.

Diego. We observed Diego during number talks in the math block. During this time, students sat on the carpet while the teacher presented a problem, provided a review, and then students discussed the solution with a partner. Diego's math classroom had 22 students (13 males, 4 with an IEP, 13 ELL, and 22 eligible for FRL). The classroom had five large tables, a small group table, a large carpet for whole-group instruction, and a small carpet area used during centers.

Table 1a. Student Demographics for BrB Versus CICO Study.

Student	Grade (age)	Race	Services	Teacher-rated performance	ODRs	Behavior	Function
Alexander	4th (10)	H	Counseling	Below GL	3	DB	AA, E
Emmanuel	4th (9)	H	T2 Math	Below GL	0	DB, OT	AA, E
Zoe	1st (7)	B	Social work	Below GL	0	DB, WC, SS	AA, E
Jeremiah	2nd (8)	B	T3 Reading	Below GL	0	DB, OT	E
Diego	1st (7)	H	NA	At/Above GL	0	DB, OT	AA, E

Table 1b. Teacher Demographics for BrB Versus CICO Study.

Teacher	Participant(s)	Role	Gender	Race	Experience	Degree	Certification
Ms. Stratford	Emmanuel, Alexander	T	F	Multi	12	M. Ed. + 30	EE, ELL, Admin
Ms. Camden	Diego	T	F	Asian	2	M. Ed.	ELL, ECE
Ms. Whitby	Jeremiah	T	F	White	11	M. Ed.	EE, SPED
Ms. Greenwich	Jeremiah	ST[a]	F	Asian	0[a]	B.S.	Psychology
Ms. Nottingham	Zoe	T	F	White	6	B.S.	ECE
Ms. Islington	Emmanuel	M	F	White	16	M. Ed.	ELL; ECE
Ms. Hoxton	Alexander	M	F	White	5	M. Ed.	PSC
Ms. Kensington	Diego, Zoe	M	F	White	17	M. Ed.	ELL; ECE
Dr. Hamm	Jeremiah	M	F	White	20	Ed.D.	LPC

Note. Data for student age and teacher experience are presented in years. Teacher-rated Performance represents teacher ratings gathered from a questionnaire on the extent to which a student broadly is or is not meeting grade-level standards. ODR = Office Discipline Referrals (received in last month); H = Hispanic; GL = Grade Level; DB = Disruptive Behavior; AA = access adult attention; E = escape from tasks; T2 = Tier 2; OT = off-task behavior; B = black; WC = work completion; SS = social skills; T3 = Tier 3; T = Teacher; EE = elementary education; ELL = English language learner; Admin = Administration; ECE = early childhood education; SPED = special education; ST = student teacher; M = mentor; PSC = professional school counselor; LPC = licensed professional counselor; At-risk = risk status determined by scores on Social, Academic, & Emotional Behavioral Risk Screener.

[a]Student teacher in student teaching placement working toward M.Ed.

Screening Measures

SAEBRS. The SAEBRS is a universal screener used to identify students at risk for behavioral and emotional problems. The tools assess overall risk based on a composite score across three subscales: *Social Behavior*, *Academic Behavior*, and *Emotional Behavior*. For elementary students, the SAEBRS has high reliability and validity as evidenced by high internal consistency (0.89–0.94) and concurrent validity (0.79–0.90; Kilgus et al., 2013, 2014; Von der Embse et al., 2016).

FACTS. After each potential student was nominated by his or her teacher or counselor, the first author conducted the FACTS interview with the primary classroom teacher (March et al., 2000). The FACTS is a 20-minute interview conducted with a student's teacher to define a target behavior and then list events that are likely to precede and follow that behavior. The information is used by the interviewer and informant to hypothesize the function(s) of behavior. While researchers have found the FACTS to be a reliable and valid measure to hypothesize function for determining function when the target behavior occurs frequently (McIntosh, Horner, et al., 2008), the data are correlational in nature (Cooper et al., 2019). The FACTS was implemented by the first author, a board-certified behavior analyst who has extensive training in FBAs. Results are listed in Table 1.

Dependent Variables

The research team selected problem behavior as the primary dependent variable (DV) based on information from the teachers and results from the SAEBRS indicating all students were engaging in these behaviors. Problem behavior was defined as any action made by a target child that interfered with participation and productive classroom activity for the target child or his or her peers. The secondary DV was engagement, defined as a student working on the assigned/approved activity or appropriately waiting for directions. We included more detailed descriptions of the DVs in the Supplemental Materials. The definitions and the accompanying examples of behaviors were aligned to be certain that our observations captured the specific behaviors the participants exhibited in their classrooms and teachers found most challenging to address. See the Supplemental Materials for detailed definitions and examples for DVs.

Observation procedures. The first author served as the primary researcher and, at the time of the study, was a doctoral candidate with experience implementing behavior interventions in school settings using single-case designs. The

research team also included a team of master's level research assistants (RAs). The cooperating teachers worked in collaboration with the first author and research team to implement the components of the study. Master's level RAs served as the primary coders, and the first author served as reliability coder for the majority of sessions. The first author and a project coordinator with extensive experience using observation software trained the RAs during an extensive three-part training program (see Appendix A in the Supplemental Materials for a detailed description of the training procedures). RAs collected direct observation data for measures of problem behavior and engagement using the Multiple Option Observation System for Experimental Studies (MOOSES) software program on handheld tablets (Tapp & Wehby, 2000). RAs collected data on the frequency of problem behavior using timed event coding, which is intended to capture discrete events of problem behavior. RAs collected data on engagement using total duration recording. This system provides a total proportion of the session the student was or was not engaged.

Interobserver agreement. To establish reliability of observations, we collected interobserver agreement (IOA) data for at least 16% of sessions within each condition for each participant. During IOA sessions, two data collectors collected data simultaneously. Coders then used the MOOSES program to calculate IOA using a point-by-point method for both DVs. We set the MOOSES program to calculate IOA agreements using a 5-second window of agreement between coders. This window was important, given that (a) multiple disruptive behaviors may have happened at once and (b) the initial onset and offset of engagement may be difficult to capture. The point-by-point method involved dividing the number of agreements by the total number of agreements plus disagreements and multiplying by 100.

Study Design and Procedures

We evaluated treatment response using multitreatment comparison designs (Wolery et al., 2018) to directly compare standard protocol CICO to BrB. To detect and rule out sequence effects, we randomly selected the initial treatment condition when possible using a randomization table. Consistent with procedures to analyze results for single-case design research, all observational data were graphed and analyzed via visual analysis. We used formative visual analysis focused on the primary DV to make decisions regarding phase changes based on level, trend, and consistency in data (Barton et al., 2018). We also calculated an effect size metric for our data using the log response ratio and, for space, we included those in the Supplemental Materials (see Table 4S and Appendix B).

Baseline. During Baseline, all typical classroom procedures and instructional routines remained unchanged by the research team. In School A, behavioral practices included praise paired with points on Class Dojo. At School B, teachers used PBIS tickets. Jeremiah's and Zoe's classroom had a "Calm Down Corner" where students could take a break. Students could choose to use this space or a teacher could prompt a student to take a break. However, students did not have a set routine for requesting breaks, nor were appropriate breaks reinforced. Alexander and Emmanuel were already enrolled in CICO prior to this study and did not participate in a baseline phase.

Teacher and student training. Directly after the last baseline session and prior to the first CICO and BrB phases, the first author met with teachers. While the specific timing varied by participant, these sessions typically occurred no more than 4 days prior to the initial implementation of an intervention. Since all teachers had prior experience implementing CICO, the CICO meetings were 20-minute sessions in the teacher's classroom to review essential components and answer questions. For BrB training, the teacher and researcher met for another 20-minute session to plan break routines and practice procedures. This practice included role-playing, where the first author pretended to be the target student asking for a break and the teacher practiced responding. The first author used a procedural fidelity checklist to ensure sessions were standardized across all teachers. All training sessions were implemented with 100% fidelity. The first author collected fidelity data during the first days of implementation for each intervention and provided coaching to teachers for any steps that were missed.

After teacher training, the teachers or first author trained students. Due to scheduling constraints, Alexander, Emmanuel, and Diego were trained by their teachers. Zoe and Diego were trained by the first author. During CICO training, the trainer reviewed the procedures and answered questions. During BrB training, the trainer provided explicit instruction to participants in procedures for requesting a break, procedures for taking a break, procedures for when the break is over, and procedures for when a teacher denies a break request. The student added to the list of preapproved break activities in consultation with the teacher. Next, the teacher and student practiced break procedures three times. Student training fidelity was 100% across all participants, as measured by self-report data from the trainers. These data provide evidence that the students were able to successfully ask for breaks during the practice sessions.

Check-in Check-out. CICO began with each student's primary classroom teacher assigning the student an adult mentor. This mentor was an adult in the building with whom the student had a positive relationship (e.g., special education

teacher, counselor, and another teacher) and who was not the student's primary classroom teacher. Next, the research team worked with the classroom teacher to develop the DPR that included the behavioral expectations, a rating scale, and place for daily goals. After the mentor was chosen and the DPRs created, students engaged in the CICO procedures listed below on a daily basis.

The school day began with each student meeting with their mentor to check in, receive a new DPR, review their behavioral expectations, and review their goal. The daily goal was the percentage of points the student had to earn to earn a reward. Each mentor set the daily goal with the student and was usually set based on the previous day's percentage of points earned. Students carried their DPR throughout the day and received praise and feedback at the end of each class period from their primary classroom teacher. The feedback sessions were brief (e.g., 2–5 minutes) and included teachers rating the student's behavior and having a conversation about what went well and what the student should improve on in the next period. The number of opportunities for feedback ranged from 8 to 10 across participants, and each student could earn up to two points per class period for meeting expectations. At the end of the day, the student met with their mentor again. During this check-out session, the mentor reviewed the DPR, tallied points earned, and engaged in a conversation with the student about how the day went. If the student met their goal, they received access to a reward. If the student did not meet their goal, the mentor helped them consider ways to improve the following day. Each student was able to choose their own rewards. Examples of rewards included candy, time with a preferred adult, and free time.

Breaks are Better. The materials for BrB included a timer, break cards, and updated DPRs. Each participant's DPR was updated during the BrB condition to include a break tracker, a way for teachers to rate how appropriate the breaks were, and a visual that outlined break procedures. The break tracker was a column that included three letter "B," to show how many breaks each student was allowed during each period and to track when a break had been taken. The DPR also included an additional column for teachers to provide a rating as to whether the student took breaks in an appropriate way. The back of the DPR included the steps for requesting a break, steps to take if a break was denied, and the activities a student could engage in during a break.

The BrB daily cycle included all of the components of CICO listed above but with the new materials created for BRB. In addition, each student could take up to three breaks per class period. To take a break, students were trained to raise a break card in the air and wait for a teacher response. If the student asked appropriately and the teacher approved of the break, she gave the student a thumbs up. To take a break, the student set a timer (i.e., sand timer or digital timer) for 2 minutes. During this time, the student could engage in break activities previously agreed upon with the teacher (e.g., drawing, reading, and playing with blocks). When time was up, the student immediately returned to work. If it was not a good time for a break (e.g., during a timed assessment, during a transition) or the student asked inappropriately (e.g., while shouting or out of seat), the teacher temporarily denied a break with a thumbs down and gave an explanation. Then, the student set the timer for 2 minutes and continued to work. Once the time was up, the student could re-request a break. Students earned a bonus point on the DPR if they asked for and took breaks in an appropriate manner during that period. At the end of each day, each student checked out with their mentor as they did in CICO.

Treatment Fidelity

We collected fidelity data via direct observation across all intervention phases and all components of CICO and BrB. To help prevent cross-treatment interference, all BrB materials were color coded blue and removed during the CICO phases. RAs used a checklist to note the presence or absence of each component. We calculated fidelity by summing the total number of yeses and dividing that by the total number of components and multiplying by 100. We collected fidelity data on at least one component of the CICO or BrB cycle for at least 42.86% of days in each condition across participants.

During CICO, average fidelity of implementation for Alexander was 93.2%, Emmanuel was 92.2%, Zoe was 98.2%, Jeremiah was 100%, and Diego was 91.9%. For BrB, average fidelity for Alexander was 94.4%, Emmanuel was 90.8%, Zoe was 99.3%, Jeremiah was 97.4%, and Diego was 96.9%. During CICO, none of the teachers erroneously provided breaks to students. As CICO and BrB include multiple components with multiple adults, the results varied due to some common issues including a mentor being absent for check-in, a student being late to school and missing a check-in, a student leaving early and missing check-out, or a teacher forgetting to provide feedback directly after class. To assess IOA on fidelity, a secondary observer collected data with the primary data collector for a few sessions per week. We calculated IOA with a point-by-point method and divided the agreements by the number of agreements and disagreements and multiplied by 100. The percentage of sessions in which we measured IOA of fidelity ranged from 16% to 75% of fidelity sessions across participants (see Table 2S in the Supplemental Materials for detailed reporting of fidelity and IOA of fidelity).

Social Validity

At the conclusion of the study, each teacher completed the Intervention Rating Profile-15 (IRP-15; Witt & Elliott,

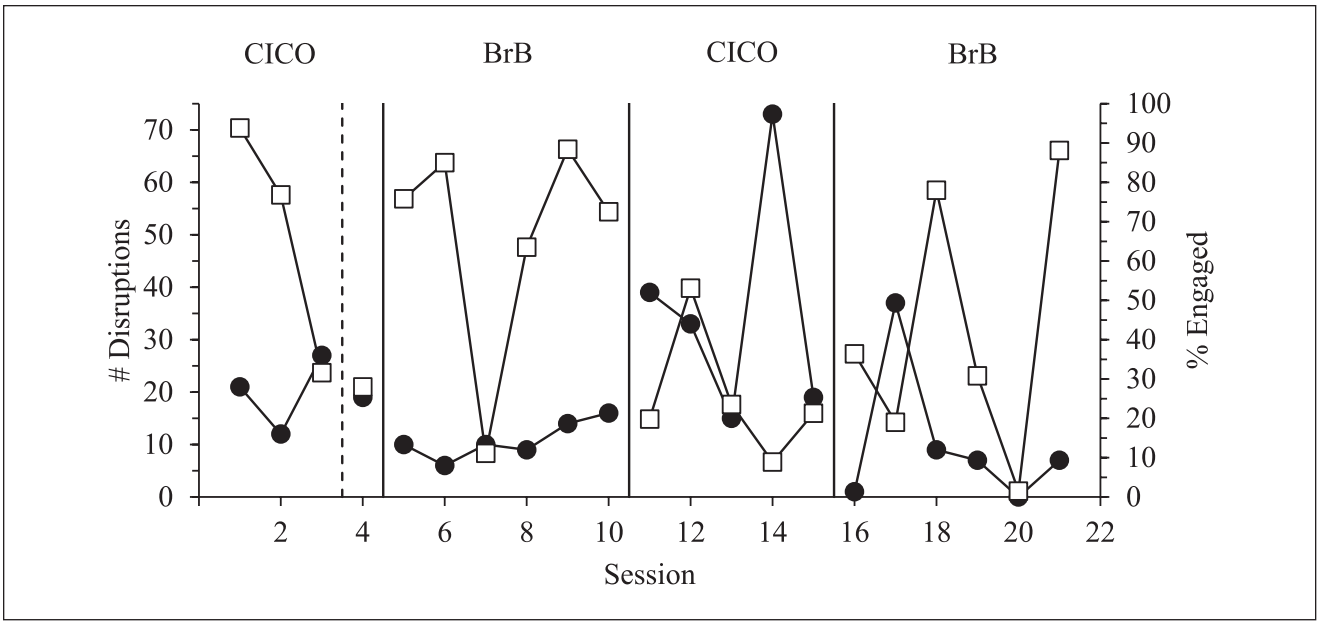

Figure 1. Alexander's problem behavior and academic engagement.
Note. The closed circles represent the number of disruptions. The open squares represent the percentage of time engaged. The dashed line represents a slight variation made to CICO by the mentor who added in a midday point goal.

1985) for CICO and BrB separately. They were given one IRP-15 form and asked to rate CICO and then they were given a second IRP-15 form and asked to rate BrB. The IRP-15 is a 15-question assessment that asks the rater to rate intervention goals, procedures, and outcomes on a Likert-type scale ranging from *Strongly Disagree* (1) to *Strongly Agree* (6). The first author also met with student participants to complete the Children's Intervention Rating Profile (CIRP; Witt & Elliot, 1985) for CICO and BrB separately. The students were given one CIRP form and asked to rate CICO and then they were given a second CIRP form and asked to rate BrB. The CIRP is a 5-question assessment that asks students to rate their thoughts about the intervention on a 6-point Likert-type scale ranging from *Strongly Disagree* (1) to *Strongly Agree* (6). The IRP-15 and CIRP have both been shown to have sufficient reliability (Martens et al., 1985; Turco & Elliott, 1986). In addition to the IRP-15 and CIRP rating scales, the first author met with the teachers and students to discuss their ratings and allow participants to verbally note any thoughts on the interventions. These anecdotal reports are presented in the results section alongside the data from the IRP-15 and CIRP.

Data Analysis

Using summative visual analysis, we identified a functional relation by first evaluating level, trend, and variability within each condition. Next, we evaluated changes between adjacent conditions to note immediacy of effect and changes in level or trend. We defined a functional relation as an immediate and consistent change in level in the expected direction upon the introduction or withdrawal of an intervention that was demonstrated at least three times (Barton et al., 2018). We used median (MED) as a proxy for level and calculated it by ordering the data points within each phase and reporting the middle number (or average of the two middle numbers in instances with even number of data points). To report trends across phases, we used the split-middle method to draw trend lines on each graph.

Results

Results for individual participants are in Figures 1 to 5 and individual summary statistics and IOA are reported in the Supplemental Materials. During BrB, the number of breaks taken ranged from zero to four per day across participants. We identified a functional relation for Alexander, providing evidence that BrB led to decreased problem behavior as compared to CICO. We provide a detailed summary of Alexander's data and a briefer summary of the other participants for whom we did not identify a functional relation.

Problem Behavior

During the first and second CICO phases of CICO, the MED values of Alexander's disruptions were 20 and 33, respectively, with an increasing trend in the first phase. During the first and second phases of BrB, the MED values for disruptions were 10 and 7, respectively, with a low variability in the first BrB phase. Upon the first introduction of

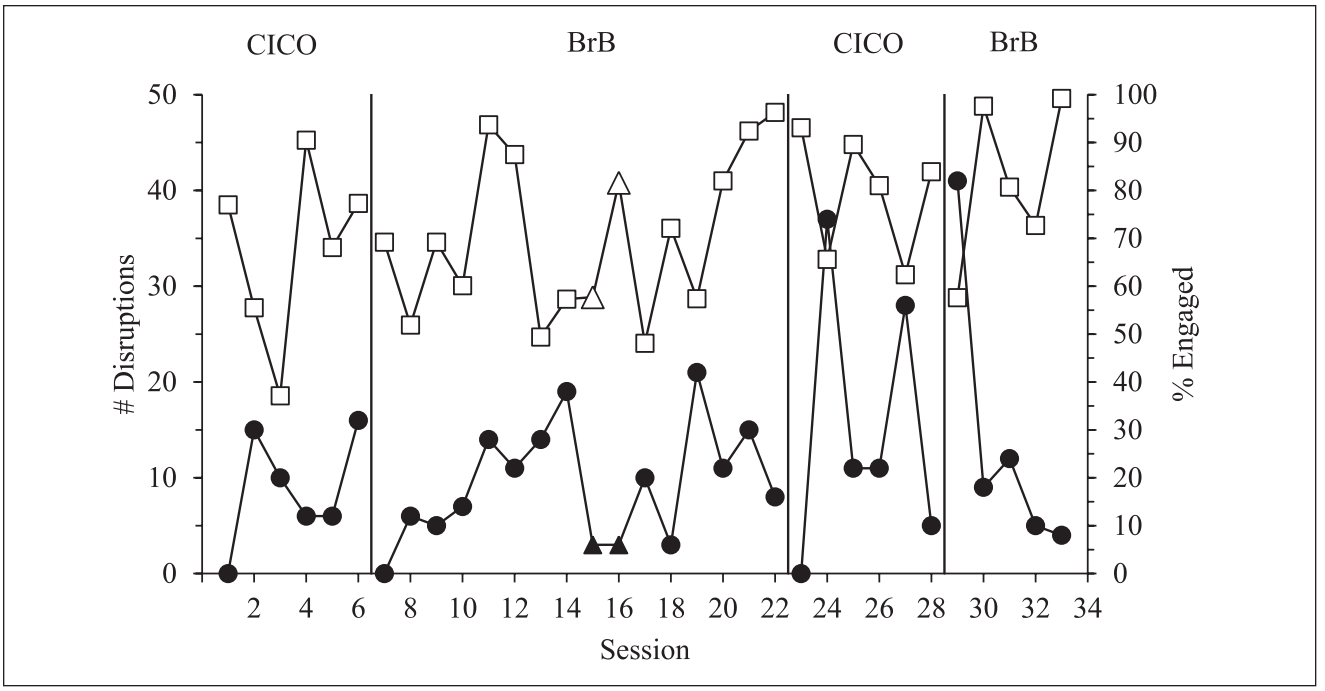

Figure 2. Emmanuel's problem behavior and academic engagement.
Note. The closed circles represent the number of disruptions. The open squares represent the percentage of time engaged. The triangles represent sessions where Emmanuel's teacher provided prompts to take breaks.

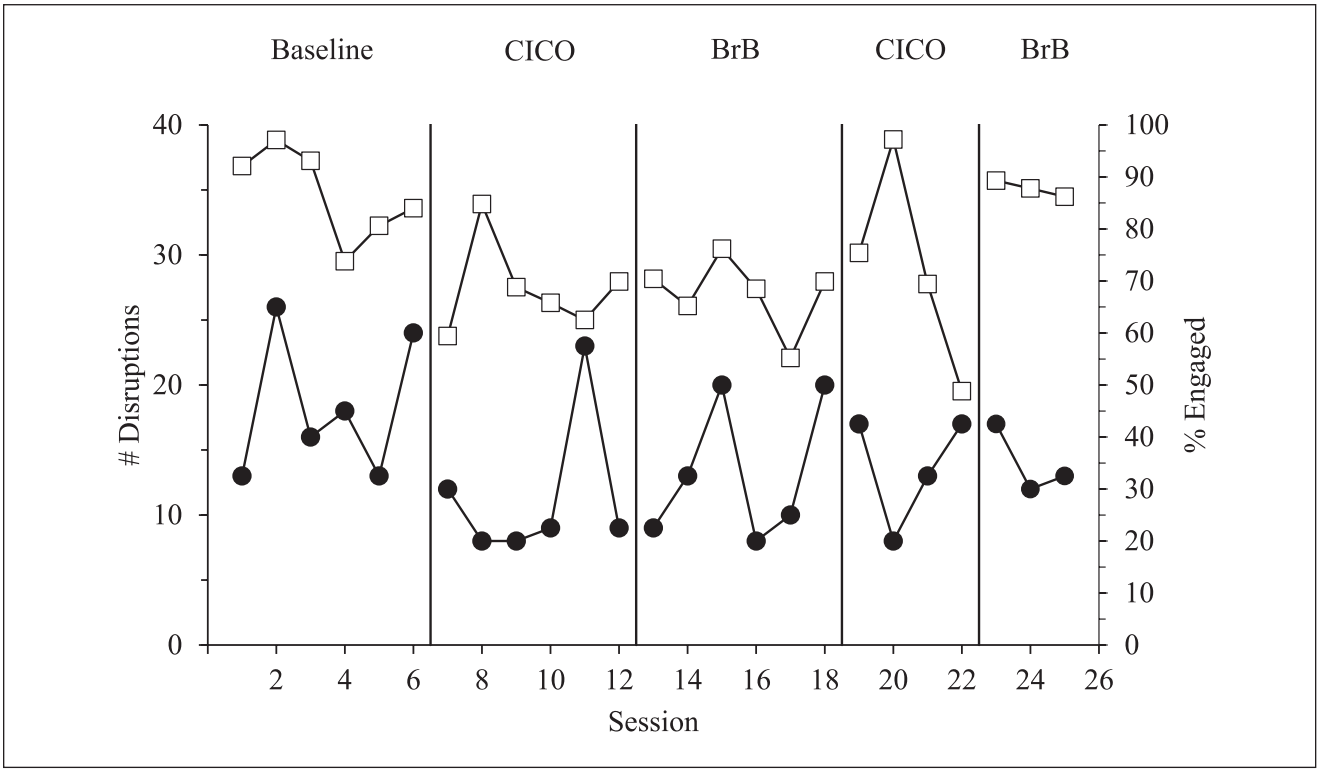

Figure 3. Zoe's problem behavior and academic engagement.
Note. The closed circles represent the number of disruptions. The open squares represent the percentage of time engaged.

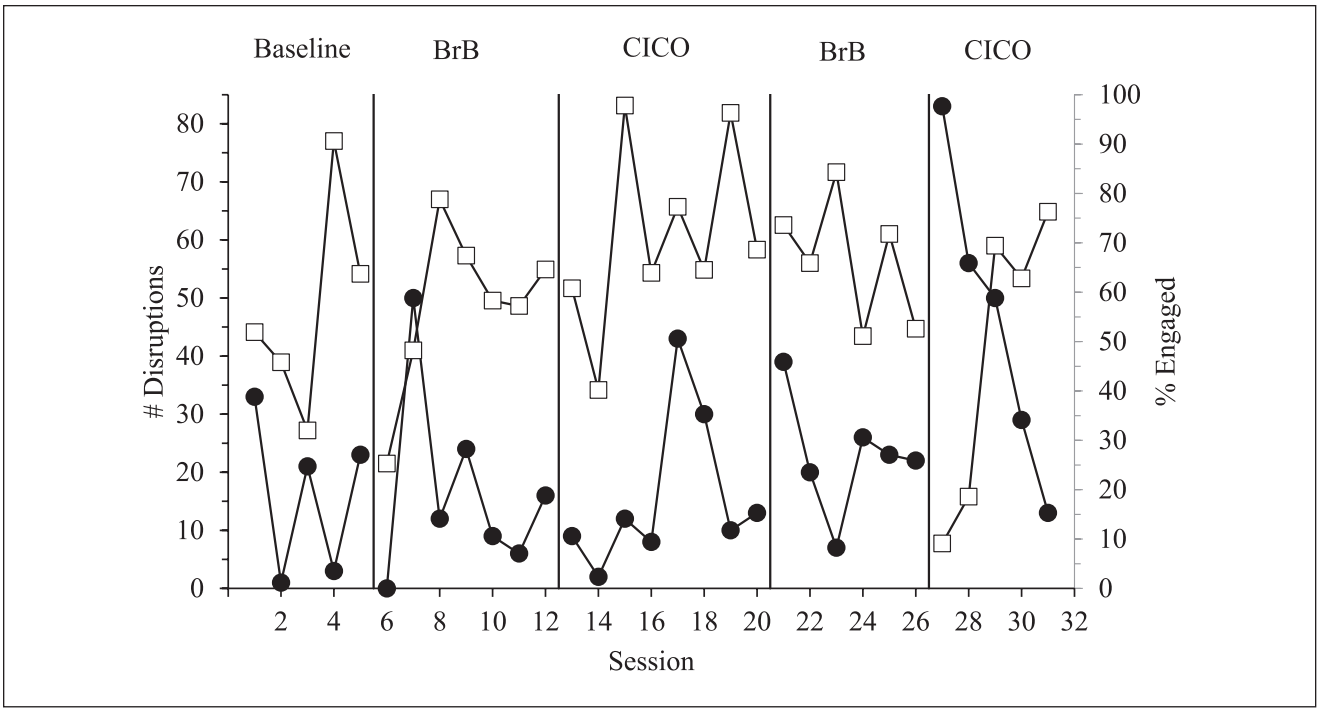

Figure 4. Jeremiah's problem behavior and academic engagement.
Note. The closed circles represent the number of disruptions. The open squares represent the percentage of time engaged.

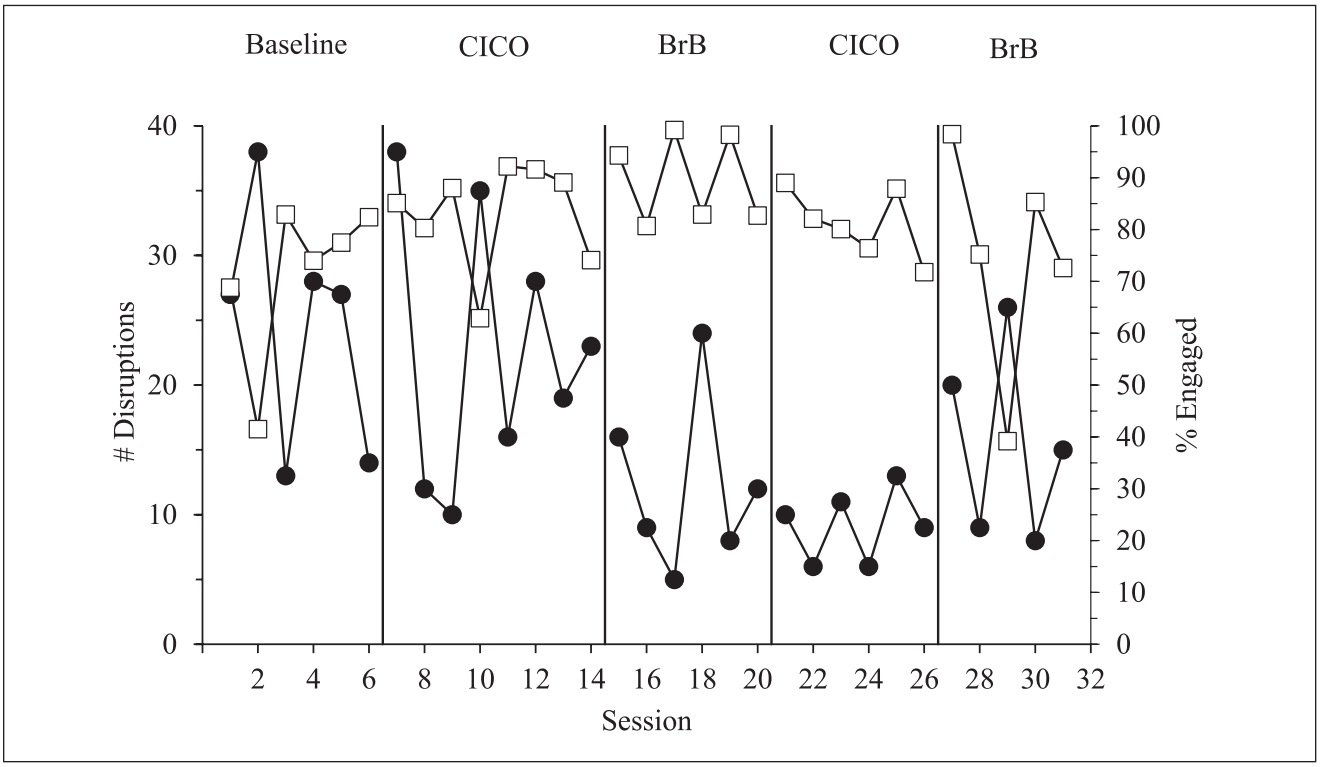

Figure 5. Diego's problem behavior and academic engagement.
Note. The closed circles represent the number of disruptions. The open squares represent the percentage of time engaged.

BrB, the level of Alexander's disruptions immediately decreased and remained low and stable. When CICO was reintroduced, disruptions immediately increased and were variable. When the final BrB phase was put back into place, disruptions immediately decreased and the phase had a decreasing trend. With three replications of an effect, we identified a functional relation and determine that BrB led to lower levels of problem behavior for Alexander. Emmanuel's level of problem behavior was consistent across all phases and MED values ranged from 8 to 11. Upon the first introduction of BrB, problem behavior immediately decreased but then steadily increased during the first half of the phase. At this point, the classroom teacher reported, and data from his DPR showed that Emmanuel was not taking many breaks. The first author encouraged the teacher to prompt him to take breaks across the day for two consecutive days. During prompting, disruptions immediately decreased but then became variable for the second half of the phase. During the final implementation of BrB, problem behavior increased. For Zoe and Jeremiah, problem behavior decreased after baseline but the level increased over time, regardless of the intervention in place. For Diego, the level of problem behavior decreased over the first three phases after baseline, regardless of the intervention in place, before increasing in a counter-therapeutic manner in the final BrB phase. Data for Emmanuel, Zoe, Jeremiah, and Diego do not support the identification of a functional relation. See Table 3S in the Supplemental Materials for summary statistics and IOA across participants and DVs.

Engagement

The MED level of Alexander's engagement during the first and second CICO phases was 54.2% and 21.3%., respectively. The level of Alexander's engagement during the first and second BrB phases was higher with MED of 74.3% and 33.7%, respectively, with data moderately stable. Upon the first introduction of BrB, Alexander's engagement immediately increased and remained fairly stable for the entire phase outside of one low data point. When CICO was reinstated, Alexander's engagement immediately decreased and data had a decreasing trend for the phase. When the final BrB phase began, Alexander's engagement increased once again. Data were variable during this phase and there was an overall increasing slope. Emmanuel's data were variable and MED levels of engagement during both CICO phases (72.6%; 82.45%) than BrB phases (69.2%; 80.70%). The MED level of Zoe's engagement decreased between baseline (88.1%) and the first CICO phase (MED: 67.3%). After this initial decrease in level, Zoe's level of engagement increased over time regardless of the intervention in place. The MED level of Jeremiah's engagement increased across the first four phases regardless of the intervention, with no differential differences between CICO and BrB. Diego had a MED level of engagement of 75.5% during baseline. His engagement increased during CICO (MED: 86.6%) and BrB (MED: 88.6%) phases. His level of engagement decreased to 75.2% during the final BrB phase, which is lower than any other phase. Collectively, graphs for all participants do not have consistent data within phases and fail to show consistent changes between CICO and BrB to identify functional relations.

Social Validity

Teachers rated CICO on the IRP-15 and results show that teachers rated CICO as having moderate social validity with an average rating of 4.6 (out of 6; see Tables 5S and 6S in the Supplemental Materials for raw data from the IRP-15). The summative rating for CICO across teachers ranged from 3.67 to 5.27 and the average rating across questions ranged from 4 to 5.5. The question with the lowest average rating (4) was "CICO was effective in changing the student's problem behavior." When the first author asked teachers for more information on this rating, most teachers reported feeling that CICO was not enough for their student. On a second copy of the IRP-15, teachers rated BrB. For this program, teachers rated BrB with an average rating of 4.92 (range: 3.27–5.6). Most teachers reported that they liked the break system and felt student behavior was improved with BrB. Diego's teacher rated BrB more poorly than CICO and did not agree that it (or CICO) helped his behavior.

Based on results from the first copy of the CIRP asking students to rate CICO, students rated CICO as having moderate social validity with an average rating of 4.12 across participants (range: 2.6–5; see Tables 7S and 8S in the Supplemental Materials for raw data from the CIRP). Collectively, they gave the lowest rating to the questions "CICO was easy to participate in." When asked to explain this rating, many said that it was difficult to not be able to take breaks during CICO. Based on the second copy of the CIRP asking students to rate BrB, students rated BrB as having higher social validity with an average rating of 5.56 across participants (range: 4.6–6). Anecdotally, all participants said they liked being able to take breaks and that the breaks helped them calm down.

Discussion

A Tier 2 paradox exists—what a standard protocol achieves in feasibility and efficiency, it lacks in procedures to individualize components for student-level variables. However, with too much adaptation and individualization, a Tier 2 intervention becomes a resource-intensive Tier 3 intervention. Therefore, Tier 2 must walk the line between effectively addressing student needs and efficiency. Some

researchers are developing frameworks that embed DBDM into Tier 2 supports (Kern & Wehby, 2014; McDaniel et al., 2015) while others continue to advocate for individualization at the Tier 3 level (Lewis et al., 2017). However, what both approaches have in common is a stance that function of behavior can impact response to intervention (Gage et al., 2012; Kilgus et al., 2016).

To better align interventions with student characteristics at the Tier 2 level, function is one variable to consider. Research on CICO has often included function-based adaptations for students with both attention- and escape-maintained behavior; however, most has been on layering on adaptations after the standard protocol of CICO was implemented (Klingbeil et al., 2019). For some groups of students who may be more likely to be nonresponsive to CICO, it is important to better understand the role standard protocols with escape-based adaptations can play at the Tier 2 level. The goal of this study was to determine if students would benefit more greatly from BrB, an intervention that addresses escape-maintained behavior. Collectively, results varied across participants.

Are Breaks Better?

The results from this study provide one example of a functional relation to show BrB as more effective at reducing problem behavior than CICO. The remainder of the cases show indiscernible differences between the implementation of CICO and BrB. For three participants (Emmanuel, Zoe, and Jeremiah), there were indiscernible differences in problem behavior between CICO and BrB. In other words, BrB was not better or worse than CICO. For Zoe, the levels of problem behavior during both CICO and BrB remained lower than baseline levels. However, for one participant, Diego, problem behavior decreased over time regardless of the intervention before increasing in the last BrB phase. He, and other participants, may have benefited from a DBDM approach that allowed for additional function-based adaptations to enhance treatment effects and further reduce the level and variability of problem behavior during the BrB phases.

At-risk students with escape-maintained problem behavior are likely to have concomitant academic deficits (McIntosh, Flannery, et al., 2008). Therefore, we also measured the impact of CICO and BrB on student engagement. Across all participants, BrB did not lead to reliable increases engagement as compared to CICO. For all participants, the ability to take breaks did not enhance engagement above and beyond that of CICO. From these findings, it can be posited that BrB may need to be paired with other academic supports to further increase engagement for students with skill deficits. For Diego, engagement decreased over time, regardless of the intervention in place. It is important to note that Diego was the only participant in the study who was above grade level academically. Therefore, his escape-maintained behavior may be a result of motivational deficits rather than skill deficits. As such, even with a break system to account for motivation, his intervention programming may have benefited from additional adaptations to enhancing motivation and self-regulation.

Results from this study mirror some findings from prior research. Boyd and Anderson (2013) included a sample of students with similar profiles and functions to our study. The graphs of problem behavior show variability in data across baseline and BrB phases. The authors identified a functional relation for only two of the three participants. In another study on BrB, authors did not specify details on the FBA and only noted that participants had an escape function. The results show highly stable data within the multiple baseline design and a clear functional relation across both DVs. However, the authors used a nonconcurrent multiple baseline design and observation methods that did not allow for point-by-point IOA, which limits our confidence in the results.

There are a few explanations for our findings and the findings of other BrB studies. To start, there may be other variables at play that impacted the effectiveness of BrB. For example, participants did not take breaks very often during the BrB phases, and thus, did not access the prosocial replacement behavior often. While each had the opportunity to take three breaks per class period, most averaged around one per day. The low number of breaks requested may signify a need for enhanced instruction on the process of taking breaks. Students in this study were exposed to a training that was focused on the procedures for taking a break. While this training taught students *how* to take breaks, students may have lacked the skills needed to self-identify *when* a break was necessary. Self-regulation is an individual's ability to monitor and manage their own behavior. Self-regulation skills, often through the use of self-monitoring, can successfully be used by students to increase prosocial behavior and decrease problem behavior (see Bruhn et al., 2015 for review). Future research on BrB may benefit from incorporating self-regulation training into the break procedures to help students be more aware of when to take a break (e.g., when bored, frustrated, or can't do a task).

Another explanation is that the breaks within BrB address motivational deficits but do not address academic skill deficits. The majority of participants in this study were performing below grade level academically and research shows that this may be more common for students with escape-maintained behavior (McIntosh, Horner, et al., 2008). When students escape from tasks, they lose access to instructional content that helps promote successful academic skills. Therefore, while BrB teaches students how to take a break, it does not address the need to take a break because the task is too difficult. Some students may need an intensified version of BrB that includes academic skill

training (e.g., mini lessons, review, and peer tutoring) plus break training. A final explanation is that the students in our sample who did not show differential results and continued to display problem behavior may require something different (alternative Tier 2 program) or something more (i.e., intensive Tier 3 supports). Future studies may benefit from using a design flexible enough to incorporate DBDM to better account for nonresponse during implementation of an intervention.

Regardless of results from our direct observations, most teachers, and all students, rated BrB as having higher social validity. Social validity ratings may support teacher and student preference to BrB over CICO. Other research notes that teacher buy-in (Miramontes et al., 2011) and preference (Shogren et al., 2011) are important considerations during intervention implementation. Therefore, BrB may be viable as one choice on a menu of Tier 2 interventions.

Limitations

The results of this study must be interpreted with the following limitations in mind. To begin, we conducted 15-minute observation sessions multiple times per week to estimate problem behavior and engagement. Longer sessions may have led to a more accurate estimate of these behaviors (Yoder et al., 2018). In addition, our measurement systems may not have fully captured the constructs of behavior that teachers find most problematic. While most teachers anecdotally reported that BrB led to more positive behavior than CICO, the majority of our data did not support this conclusion. Outcomes for CICO or BrB may have been more divergent if we had measured behavior during longer sessions or across multiple periods during the day. A second limitation is the change in Alexander's CICO protocol shortly before BrB began. The decision to add this procedure was made by the mentor independent of the study procedures. The mentor added a midday point goal tied to an opportunity for reinforcement. During the afternoon checkout, the mentor determined if one or both goals were met. If Alexander met his midday goal, he earned a reward. If he met his afternoon goal, he earned an additional reward. While this change did not increase time spent with the mentor or increase the dosage of feedback throughout the day, it altered the schedule of reinforcement. As such, this change may be a confound that affects confidence in the determination of a functional relation.

A third limitation is that most of the students were hypothesized to have problem behavior motivated by both access to attention and escape from demands. While it is possible for students to be motivated by both functions, this may also be a direct product of using a purely descriptive measure of function (i.e., FACTS) that relied heavily on teacher recall. Therefore, we cannot be confident that all students needed intervention components that addressed escape from tasks, which may partially explain why there were mixed results for the effectiveness of BrB. It is interesting to note that Boyd and Anderson (2013) used descriptive methods and reported participants with dual functions. Relatedly, our results may have been different had we included a sample of student who had behavior solely maintained by escape. Future studies on BrB may benefit from using a more technically precise FBA method to find a sample of students with escape-maintained behavior.

Another limitation is the lack of data on teachers' approval or denial of breaks during the BRB conditions. We trained teachers to deny a break request if it was not feasible to give the student the break (e, g., transition, assembly, and timed test). Data collection did not include a record of breaks requested by a student but denied by the teacher. The DPRs did provide data on number of breaks taken but information on the total number of breaks requested would provide information about the percentage of breaks approved versus denied.

An additional limitation is low IOA for one observational session (e.g., 64%). Our use of a point-by-point method, which is the gold standard for IOA (Yoder et al., 2018), paired with low rates of behavior impacted IOA. Student problem behaviors are not always discrete with clear onsets and offsets. While we used highly trained RAs, our rigorous approach to IOA methods may explain why there were a few sessions with lower than acceptable IOA. A final limitation is the timing of the study. Data were collected in the spring semester at the end of the academic year. Often multitreatment designs require extended phases and more data than an alternating treatment design or withdrawal design (Wolery et al., 2018). However, we had to make phase change decisions based on patterns in data and in conjunction with the amount of time left in the school year. This timing impacted our ability to continue interventions or add phases to account for student preference or additional adaptations to enhance treatment effects.

Implications

A standard protocol is one core component of a Tier 2 system; however, it should not be equated with a one-size-fits all approach to intervention planning. A school offering a single intervention at Tier 2 (e.g., CICO) is insufficient, given that not all students respond to a program in the same way (Klingbeil et al., 2019). Therefore, schools need access to multiple interventions or procedures to address a range of student factors, varying ecological classroom contexts, and teacher and student preference (Majeika, Bruhn, et al., 2020). Research is needed to establish additional function-based Tier 2 programs and procedures that can be used for students with escape-maintained behavior within a PBIS context.

With multiple intervention options and approaches, and as a way to address the paradox of Tier 2, schools will need a system in place for DBDM if they plan to adapt Tier 2 programs based on student needs. DBDM procedures outline a process to (a) identify students who need intervention, (b) match students with an intervention, (c) monitor student progress, and (d) adapt the program as needed. School teams can use DBDM to more efficiently and systemically assess and address student-level factors to best align and adapt interventions. While we address function of behavior in the context of CICO implementation, there are other student-level factors that can and should be considered when adapting Tier 2 programs. More research is needed to determine which student-level factors are essential components of Tier 2 and, and once identified, how they can be leveraged within DBDM for Tier 2 interventions. Moreover, we need to encourage schools to use assessment data of student-level factors to *match* students with programs rather than rely heavily on adaptations. Adapting interventions for students may lead to better outcomes, but is resource intensive, may not be an efficient means to provide support, and can quickly border on Tier 3 territory. Function of behavior is one example of a student-level factor but comes with its own set of nuances that should be addressed in future research as well.

Advocating for a functional approach at Tier 2 is, in many ways, easier than identifying a feasible, yet valid and reliable process for conducting an FBA. While the FACTS is commonly used in the context of Tier 2, there is limited evidence to support its validity and reliability (Dufrene et al., 2017). It is useful to confirm the results of the FACTS with direct observation, but this requires more resources and training than may be available at the Tier 2 level where up to 15% of students need support. More research is needed to validate the FACTS. Furthermore, research is needed to establish a framework for how to embed FBA procedures into DBDM across all tiers within PBIS.

Conclusion

As teachers continue to grow increasingly frustrated and burned out from challenging classroom environments, student behavior has never been a more salient variable for intervention. Intervening early for at-risk students is essential to promoting positive classroom environments and supporting student needs. Aligning targeted interventions to student-level characteristics is important to achieve the efficiency of a Tier 2 support. As efforts to scale-up PBIS continue, researchers and practitioners will benefit from access to tools to feasibly assess student characteristics and access to a broad range of effective interventions that can support students in need.

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Supplemental Material

Supplemental material for this article is available on the *Behavioral Disorders* website with the online version of this article.

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