Check-In/Check-Out in High Schools: An Exploratory Analysis

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Abstract

Check-In/Check-Out (CICO) is an effective and widely used Tier 2 behavior program in elementary and middle schools. This article describes a pilot study focused on examining the impact and usability of an adapted CICO program in a high school. We used a single-case multiple baseline design across five 9th grade students to evaluate the effects of the program on student academic engagement and disruption/non-compliance. In addition, we administered social validity questionnaires to school personnel and students to assess the usability of the program. Findings were mixed in terms of impact on student behaviors. Both school personnel and students found the program useable. Based on these findings, we discuss limitations and offer recommendations for how high school personnel could use CICO to support students at-risk of school failure.

Keywords: Check-In/Check-Out, CICO, High School, Tier 2, Positive Behavioral Interventions and Supports, PBIS

Check-In/Check-Out in High Schools: An Exploratory Analysis

Check-In/Check-Out (CICO; Crone, Hawken, & Horner, 2010) is a Tier 2 behavior program designed to support at-risk students. CICO has been evaluated in multiple empirical studies, and found to be both effective at improving student behavior (Campbell & Anderson, Miller, Dufrene, Sterling, Olmi, & Bachmeyer, 2015; Todd, Campbell, Meyer, & Horner, 2008). A recent synthesis of CICO research led the authors to identify the program as an "evidence-based practice" for improving social behavior of students in elementary and middle schools (Maggin, Zurheide, Pickett, & Baillie, 2015).

Designed as a Tier 2 program, CICO is a common implemented within school-wide multi-tiered system of support framework, such as Positive Behavioral Interventions and Support (PBIS; Crone, Hawken & Horner, 2010). As a Tier 2 program, CICO is typically implemented as standardized program for all students identified as eligible for Tier 2 supports. The conceptual logic guiding CICO is to (a) increase the structure of a student's day by adding pre-defined prompts for self-management, (b) provide explicit training in self-regulation skills such as self-monitoring, self-evaluation, self-delivered consequences, and self-recruited support, (c) use behavioral momentum to launch the school day and each class period with a positive interaction, (d) create opportunities for predictable and frequent adult recognition for appropriate behavior, (e) reduce inadvertent rewards contingent on problem behavior, (f) increase coordination of student support between home and school, and (g) collect and use daily data to adapt CICO elements to fit the needs of students (Crone, Hawken, & Horner, 2010; Hawken and Horner, 2003). Five procedural components of CICO are designed to meet these conceptual goals:

a) *Daily Check-in/check-out:* At the beginning and end of each day, the student briefly checks-in and out (e.g., 2-5 min) with an identified member of the school faculty/staff

(CICO Coordinator; e.g., counselors, teachers, behavioral specialists). The morning check-in allows an opportunity for the student to start each day with a positive interaction, and to pre-empt a potentially negative start to the day if a student arrives unprepared for school. The afternoon check-out with an adult allows a quick review of the day, and the opportunity to prompt positive behavior for the next school day.

b) *Daily point card*: A daily point card is used in each class period throughout the day to monitor if the student meets expectations for social behavior. The daily point card lists school-wide expectations and has a place for each teacher to rate the student on each expectation as exhibited during their class period (e.g., 0 = did not meet expectations, 1 = partially met expectations, and 2 = met expectations). It also includes a point goal and a total of points available for the day (see Figure 1 for example). Many schools enter the daily points into the School-wide Information System (CICO-SWIS; May et al., 2016; https://www.pbisapps.org), a web-based data system for managing data entry and report generation on student performance in CICO.

c) *Self-regulation training:* The CICO coordinator teaches each student behavioral expectations for the school, and the daily routine of CICO checks and card use. Emphasis is placed on student self-management and the skills needed for class by class success.

d) *Rating and feedback:* At predetermined transitions (e.g., end of class periods), the student uses the daily point card to first self-assess their behavior, and then prompt their teachers to provide feedback on their performance. The teacher feedback includes verbal praise for behavioral expectations met during that time period and encouraging, corrective feedback if the student did not meet the expectations.

e) *Home-school communication*: After daily check-outs, the option exists for the student to take the daily point card home for a parent/ guardian to sign. The student then returns the signed daily point card to school the following morning. Parents/guardians are encouraged to provide positive feedback to the student and not to establish any punitive contingencies for not meeting goals. This feature increases parent/guardian communication, awareness, and involvement, but is optional based on family and student preference (Crone et al., 2010; Hawken, Bundock, Kladis, O'Keeffe, & Barrett, 2014; Hawken and Horner, 2003; Wolfe et al., 2016).

Although CICO is proven to be an effective program for students in elementary and middle schools, its application and effectiveness for students in high schools is uncertain. For example, due to the developmental age of high school students, and the organizational features and structures of high schools, it is more complex to implement behavior programs in these environments (e.g., larger class sizes, multiple buildings and teachers, increased emphasis placed on students to meet academic expectations; Flannery, Frank, Kato, Doren, & Fenning, 2013). In addition, Swain-Bradway (2009) also found certain adaptations to the traditional CICO program to be useful in high schools. For example, using a single-case multiple-baseline design across six high school students, the author evaluated the effects of traditional components of the CICO program, combined with an academic seminar-type class focused on increasing study skills, such as notebook organization, test taking strategies, goal setting (Swain-Bradway, 2009). Results indicated that after implementation of the adapted CICO program, there was an increase in student academic engagement.

Moreover, in a recent survey study conducted by Kittelman, Monzalve, Flannery, & Hershfeldt (2018) provides some evidence that school personnel are focused on implementing

and adapting CICO in high schools. Of personnel surveyed from 18 high schools, the authors found that the majority had adapted at least some traditional procedural components of CICO. Adaptations included having students check-in and check-out with multiple school personnel and varying times of the day, providing feedback to family members electronically, and students receiving ratings and feedback from high school teachers based on behavior and academic expectations (Kittelman et al., 2018). The authors indicated that some adaptions were made because students were not buying into traditional procedural components of the CICO program (Kittelman et al., 2018).

Based on these findings, it is plausible that adaptations to CICO are necessary in high schools for (a) students to participate in the program and (b) fit within the organizational structures and content of high schools. It might be possible to adapt certain procedural components of CICO, such as the daily point card, are helpful to increase daily student participation in the program. Therefore, there is a need for additional exploratory research in this domain to test and evaluate impact and usability of CICO in high schools.

Present Study

The purpose of this study was to further explore the usability and impact of CICO for high schools. We conducted an exploratory pilot study designed to evaluate whether an adapted CICO program for high schools could be implemented with high fidelity. We also sought to evaluate whether implementation of the adapted program would result in improve student outcomes (i.e., increased academic engagement and decreased disruption/non-compliance behaviors) and be rated useable in high schools by school personnel and students. The research questions for this pilot study were:

1. To what extent can CICO-Secondary be implemented with fidelity?

2. Does implementation of CICO-Secondary result in improve student behaviors in high schools?
3. Do school personnel and students find CICO-Secondary useable in high schools?

Method

Setting and Participants

The participants were five ninth grade students, their teachers, and one school behavior specialist (CICO Coordinator) from a midsize, suburban high school in the Pacific Northwest. The study took place from April to June of the 2017-18 school year. According to school demographic data from the National Center for Education Statistics (NCES) database, the high school included a total of 1,403 students. The majority of students were identified as either White (57%) or Hispanic (30%). In addition, 860 (61%) were free lunch eligible and 118 (8%) were reduced-price lunch eligible.

Students. Of the five students, three were males and two were females. Two male students were White and the other Black. Two of the males were 15 and the other 14 years old. Both female students were White and 15 years old. None of the students had IEPs. To be eligible to participate they had to have: (a) received multiple office discipline referrals during the school year, and/or (b) be nominated by a teacher, team, administrators, or behavior specialist due to frequent classroom problem behaviors (e.g., off-task, disruption). Similar inclusion criteria was used by Hawken and Horner (2003) when evaluating some of the initial effectiveness of the traditional CICO program. Since the high school operated with an alternating A day (periods 1, 3, 5, 7) and B day (periods 2, 4, 6, 8) schedule, school personnel were asked to identify two classes (one A and one B day) in which each student struggled with academic engagement and/or

problem behavior. These classes were used for collection of direct observational data. Classes were 90 min long, expect on early release days when classes were 65 min.

Andrew. The two classes that Andrew was observed in were Science 9 (A days) and Career and College Readiness (B days) classes.

Bethany. The two classes that Bethany was observed in were English 9 (A days) and Career and College Readiness (B days).

Colin. The two classes that Colin was observed in were English 9 (A days) and Algebra 1 (B days).

David. The two classes that David was observed in were Science 9 (A days) and English 9 (B days) classes. During the first three observations in baseline on A days, David was observed in Career and College Readiness; however, his schedule was changed and the remaining observations on A days occurred in Science 9.

Ellise. The two classes that Ellise was observed in were English 9 (A days) and Algebra 1 (B days).

Teachers. The participating teachers provided instruction in each of the identified classes for the students. Note that direct observation was limited to the two classes selected as most relevant for each student (one A day and one B day class), but students (and teachers) used the daily point card in all classes. A total of 24 teachers participated in the study.

CICO coordinator. The CICO coordinator was a white, female doctoral student in educational leadership and policy, who also worked as a full time learning behavior specialist at the high school. The CICO coordinator had a total of 10 years of experience working in education. The CICO coordinator participated in the study approximately 30 min per day, and

did not have full-time equivalent (FTE) specifically dedicated toward implementing the adapted CICO program.

Measures

Academic engagement and disruption/non-compliance. To evaluate the impact of CICO-Secondary, direct observation data were collected on two student behaviors: academic engagement and disruption/noncompliance. During one academic period, 2-3 days per week, observations occurred during the first 15 min of class and were recorded using a 10-s whole interval recording protocol to assess the percentage of intervals students were academically engaged. Direct observations began 5 min after class started and lasted for 10 min. Students were recorded as being academically engaged if they were performing behaviors that matched classroom instruction for at least seven of the 10-s in an interval. Examples of academic engagement included: (a) body orientated toward teacher or activity, (b) asking or answering questions, and (c) following teacher requests.

The second variable of interest was disruption/non-compliance and was measured using a 10-s partial interval recording system. Disruption behaviors were defined as behaviors that were distracting or upsetting for teachers or peers (e.g., taking out of turn or interrupting, inappropriate physical contact). Non-compliance was defined as students failing to comply with a teacher's requests within five seconds (e.g., ignoring a teacher's request or not following directions). If students came late to class, but within the first 15 min of class, data collectors were instructed to begin conducting the student observations at that time. Observations occurred only on school days when normal instruction was scheduled (e.g. not when exams or tests were taking place).

Interobserver agreement (IOA). A total of eight data collectors participated in the study. Data collectors included special education doctoral students, a school psychology masters

student, an undergraduate student, and a former general education teacher. The first author collected all IOA data (secondary data collector) throughout the study, and served as a primary data collector on limited occasions when other data collectors were not available. Data collectors were trained by the first author to collect observational data on the two student dependent variables (academic engagement and disruption/non-compliance). The training included three 1-2 hour sessions. Trainings included: (a) discussions of the context and data collector responsibilities, (b) overview of CICO, (c) reviewing operational definitions (i.e., examples and non-examples), and (d) practicing taking direct observational data using videos simulations within classroom environments. During practice video simulations, IOA was assessed and compared to observational data collected from the first author and data collectors. Any disagreements after video simulation were discussed until 100% agreement was obtained.

IOA in the study was calculated by dividing the exact item agreements by the exact item disagreements plus agreements and then multiplying by 100%. IOA data were collected in 41 observation periods: at least 25% of the observations for baseline (M = 35%) and intervention (M = 42.6%) phases for each student. IOA for academic engagement ranged between 78.3% - 100% (M = 92%) and for disruption/non-compliance ranged between 75% - 100% (M = 95.1%). When IOA was below 80%, data collectors met with the first author to review disagreements and operational definitions and come to agreement on definitions of academic engagement and disruption/non-compliance before the next observation.

Treatment usability. To evaluate the usability and identify potential adaptations for the CICO-Secondary program, (a) strategies for adapting CICO to fit the social, organizational and developmental context of high school were developed with input from the CICO coordinator and high school administrator, and (b) end-of-study social validity questionnaires were administered

to the CICO coordinator, teachers and students. The social validity questionnaire for the CICO coordinator included seven questions, with six Likert-type rating questions (ranging from 1 = strongly disagree to 6 = strongly agree) and open-ended questions. Questions included asking the CICO coordinator: (a) whether CICO-Secondary improved students' behaviors and (b) to provide feedback on components of CICO-Secondary that worked and could be improved (i.e., student selection criterion and process, student orientation to CICO-Secondary). Teacher and student social validity questionnaires consisted of seven questions (Likert-type rating questions and an open-ended question). Questions included: (a) whether the program improved student behaviors, (b) was easy to use, (c) if certain components would be better completed using an electronic application (i.e., student or teacher ratings), (d) whether teachers and students would participate in the program again and recommend it to others, and (e) advice on how to improve the program.

CICO-Secondary

Adaptations were made to the traditional CICO program in order to be more contextually and developmentally suitable for high schools and students. Adaptations to the traditional CICO program (Crone, Hawken, & Horner, 2010; Hawken & Horner, 2003) were as follows:

Daily check-in and check-out. Although all of the students were trained to check-in each morning with the CICO coordinator, two of the students were given the option of picking up their daily point cards from their first period teachers to better match the logistics of their schedule. At the end of the school day, all students had the option of checking out with the CICO coordinator in person or dropping off their daily point card using a secure "mailbox" outside the CICO coordinator's office. In this instance, the CICO coordinator would review the daily point cards and progress with students the following morning during check-in.

Daily point card. The daily point card was created with a bi-fold design that aimed to provide more privacy for students when handling the card. The front of the folded card included the school-wide expectations logo. The inside of the card included the five school-wide expectations and a place for teachers and students to rate whether these expectations were met for each period (see Figure 1).

Self-regulation training. In addition to receiving the normal orientation to CICO procedures (check-in, check-out, use of daily point card), students were taught that CICO was about building their independence, success and self-regulation. This included explicit training in how students could self-monitor their behavior, and check-in with adults (e.g., get feedback and help) during the day.

Ratings and feedback. Students were trained to use the daily point cards to self-assess whether they (a) greeted teachers at the beginning of each class and (b) followed the five school-wide expectations. By including a teacher and student response section on the daily point cards, students and teachers could each rate whether students met their daily goals. When there were disagreements between student and teacher scores, teachers had the opportunity to provide positive and corrective feedback.

Home and school communication. Rather than having students take their daily point cards home to parents/guardians to review and sign, students were taught to leave their completed cards with the CICO coordinator (either in person during a check-out or in the designated secure “mailbox”). Home and school communication occurred instead through brief, weekly emails sent from the school administration indicating successes the student was having (e.g. “we are continuing to see improvements in Andrew’s academic engagement in the classroom” and “we look forward to seeing another good week of classroom participation”).

Procedures

To evaluate the impact of CICO-Secondary on student academic engagement and disruption/non-compliant problem behaviors, we used a concurrent, single-case, multiple baseline design across student participants (Gast & Ledford, 2014).

Baseline phase. Prior to baseline observations, the research team met with participating teachers to identify their classroom expectations. For example, Andrew's teacher for College and Career Readiness did not allow students to wear hoodies, however, Andrew's Science 9 teacher allowed students to wear hoodies but strongly enforced a "no cell phone use policy," which was not enforced by other teachers. The research team also conducted a 30 min training with the CICO coordinator that included: (a) a conceptual overview and purpose of CICO-Secondary, (b) the CICO-Secondary standard routines and procedures, (c) data collection and entry, (d) family communication, (e) setting goals and utilizing acknowledgements, and (f) problem solving (e.g., if students forget to check-in pick up their daily point card). The training materials and content are available upon request from the first author. Baseline observations continued until there was a stable rate of responding for academic engagement and a minimum of five observations had occurred for a least one student (Kratochwill et al., 2010).

Student and teacher training phase. Prior to intervention, classroom teachers were sent emails from the school administration informing them of the study. Research staff then followed up with individual teachers to invite them to participate. All teachers for the selected students agreed to participate. Following baseline data collection for each student, students and their teachers were trained on the CICO-Secondary program in a staggered fashion, as students entered intervention.

Student trainings included: (a) review of the daily CICO-Secondary routines and procedures, (b) teaching students how to self-assess whether they met their behavior goals (i.e., tallying points on daily point card), (c) how to obtain teacher feedback by approaching teachers in a positive manner, (d) how to accept positive and corrective feedback from teachers, and (e) how to problem solve (e.g., what happens if there is a substitute teacher). The research team trained the first student to model high training fidelity for the CICO-Secondary coordinator. The CICO coordinator then conducted the second student training with research staff observing and providing feedback. The remaining students were then trained by the CICO coordinator independently. The student trainings lasted approximately 15-20 min. All training materials and content for the students are available upon request from the first author.

Training for classroom teachers consisted of: (a) conceptual overview and purpose of CICO-Secondary, (b) describing their roles and responsibilities (i.e., reviewing, rating, and signing the students' daily point cards), and (c) how to give positive and constructive feedback to students (i.e., providing examples of positive and specific praise statements). Due to the small number of students in this study, teachers were trained individually. Research staff conducted these brief (10 min) trainings. If teachers had already been trained by the research team because a previous student had begun participating in CICO-Secondary, they only received an additional 5 min booster training by the research team reviewing the critical components of CICO-Secondary. All training materials and content delivered to the teachers are also available upon request from the first author.

CICO-Secondary phase. The CICO phase consisted of implementing CICO-Secondary. Since the school did not have a Tier 2 systems team or CICO team, and due to the small scope of the study, the research team worked directly with the CICO coordinator to implement the

program, monitor student and teacher fidelity, problem solve implementation issues, and review student fidelity and outcome data. Social validity questionnaires were administered to the CICO coordinator, teachers, and students within one week after the intervention phase.

Procedural Fidelity

Daily point cards were used to assess the extent that students participated in the daily components of CICO-Secondary. To obtain high procedural fidelity, students needed to (a) check-in with the CICO coordinator and collect their cards in the morning, (b) use their daily card to self-assess whether they greeted their teachers at the beginning of each class period, (c) use their daily card at the end of each class to self-assess if they met behavioral expectations, (d) obtain feedback from teachers on whether they greeted their teachers and if they followed classroom behavioral expectations, and (e) check-out at the end of the day with the CICO coordinator or return their cards to the CICO mailbox.

Since there were four class periods each day, this presented students with a total of 14 steps to complete the daily CICO-Secondary implementation cycle. However, if there was a substitute teacher, students were trained to only self-assess their behaviors and not obtain teacher feedback on whether they greeted or met their behavior goals. On those days, students completed one fewer implementation step for every substitute teacher.

Analysis

Descriptive statistics were used to assess implementation fidelity and social validity. Visual analysis of the observational data was used to determine whether a functional relation was found between the implementation of the program and improved student behaviors. Using What Works Clearinghouse single-case design standards (Kratochwill et al., 2010), we evaluated

visual analyses of the data in baseline and intervention phases based on data level, trend, variability, immediacy of effect, and overlapping data across phases.

Results

Fidelity of CICO-Secondary

A central concern for the study was if CICO-Secondary could be implemented with high procedural fidelity. Information provided through direct observation, permanent product, and self-report from staff indicate high implementation of CICO-Secondary procedures by school personnel. Students were identified, oriented, and supported by the CICO coordinator and teachers as the program stipulates. There was lower procedural fidelity; however, when considering student behavior. CICO-Secondary can be expected to impact student behavior only if students engage in the procedures that will expose them to needed supports (i.e., morning check-in, greeting teachers, self-assessment throughout the day, recruiting teacher assessment, and check-out). Only one student, David, obtained his daily CICO point card, self-assessed, recruited teacher feedback and checked-out regularly, after completing the orientation (i.e. 9 of 11 days of the intervention). Procedural fidelity for David ranged from 85.7% to 28.6%, and he was highly consistent with picking up his card, self-assessment, recruiting teacher feedback, and returning his card (78% to 100% of opportunities). He was less likely to greet teachers at the beginning of class (14% of opportunities).

In contrast, Andrew only turned in a completed card three out of the 19 days of participation in CICO-Secondary, even with the adaptation of picking up his card at his first period class. Bethany turned in a completed card only two days (the 3rd and 4th days of intervention). Colin turned in a completed card on only one day (the first day of intervention),

and Ellise did not complete a card on either of the days she was on CICO-Secondary. In general, students were more likely to pick up their cards and self-assess and less likely to greet teachers upon entering class, obtain teacher feedback and turn in their cards.

Impact of CICO-Secondary

The percentage of disruption/non-compliance and academic engagement behaviors for the students, across baseline and intervention phases, are displayed in Figure 2. Based on visual analysis and poor procedural fidelity, there were no functional relations between the implementation of CICO-Secondary and decreases in student disruption/non-compliance or increases in academic engagement behaviors. We did, however, observe a basic effect when CICO-Secondary was implemented with fidelity for David, resulting in a distinct reduction in disruption/non-compliance, coupled with improved academic engagement.

Disruption/non-compliance. Results for Andrew indicate a mean level change in disruption/non-compliance behaviors from 70.12% (range = 12.3 – 100%) in baseline to 44.11% (range = 0 – 100%) in CICO-Secondary. There were decreasing trends and high variability in the baseline and intervention phases, as well as high data overlap across phases. An immediacy of effect was observed when the program was implemented.

For Bethany, there was a small mean level change in disruption/non-compliance from 24.27% (range = 0 – 91.7%) in baseline to 22.18% (range = 0 – 88.3%) in intervention. An increasing trend in disruption/non-compliance in baseline and a decreasing trend in intervention was observed. There was moderate variability across phases and high data overlap across phases. An immediate increase in disruption/non-compliance behaviors was observed once the program was implemented. It is likely the timing of these problem behaviors was related to Bethany not taking her prescribed medication. The dashes in Figure 2 for Bethany represent two observations

on days the school administration noted she had refused to take her medication. On those days, data collectors noted that Bethany was lethargic (e.g., head on desk) and would struggle to participate with classroom activities.

A small mean level change was observed in Colin's disruption/non-compliance behaviors from 17.21% (range = 0 – 100%) in baseline to 12.66% (3.3 – 30%) in intervention. Decreasing trends in baseline and intervention phases were observed, and less variability in the intervention phase. There were high amounts of data overlap across phases and a small-to-moderate increase in disruption/non-compliance behaviors in intervention.

Once CICO-Secondary was implemented for David, there was a mean level reduction in disruption/non-compliance behaviors from 20.70% (range = 0 – 90%) in baseline to 4.86% (range = 0 – 30%) in intervention. There was moderate variability in disruption/non-compliance behaviors in baseline. Once intervention started, there was a small, immediate decrease in disruption/non-compliance behaviors and a decreasing trend. There was little data variability in the CICO-Secondary phase and overlapping data across phases.

Finally, for Ellise, there was small increase in mean level disruption/non-compliance behaviors from baseline 11.54% (range = 0 – 36.7%) to 13.34 (range = 5 – 21.67%). However, Ellise was only observed twice in the intervention phases and she did not participate in the daily CICO-secondary activities (i.e., checked-in with coordinator, picked up daily point card). An immediate decrease in disruption/non-compliance behaviors were observed once CICO-Secondary was implemented. In addition, in both baseline and intervention phases, there was an increasing trend in disruption/non-compliance behaviors and with small-to-moderate data variability and high data overlap across phases.

Academic engagement. For Andrew, results showed a mean level change in academic engagement from 32.48 (range = 1.7 – 53.3%) in baseline to 70.86% (range = 38 – 100%) in intervention. There was an increasing trend, with moderate variability in responding, across both baseline and intervention phases. After the program was implemented, there was an immediate increase in academic engagement, with minor data overlap across phases.

For Bethany, mean level change in academic engagement went from 46.38% (range = 6.7 – 100%) in baseline to 53.99% (range = 0 – 100%) in the intervention. There was a decreasing trend in baseline and an increasing trend in intervention, with high variability across phases. There was an immediate decrease in academic engagement when the program was implemented; however, it is likely that medication refusal also impacted academic engagement.

For Colin, there was a mean level change in academic engagement from 49.83 (range = 0 – 100%) in baseline to 63.68% (range = 13.3 – 93.3%) in the intervention phase. There was a decreasing trend in baseline and an increasing trend in the intervention; however, both phases included high variability and overlapping data. There was a large increase in academic engagement (immediacy of effect) once the program was implemented.

After implementation of CICO-Secondary, David's academic engagement increased from 62.34% (range = 6.7 – 93.3%) in baseline to 79.7% (35 – 100%) in intervention. There was an increasing trend in baseline and intervention phases with moderate-to-high data variability across phases.

Ellise's mean level of academic engagement decreased from 68.81% (range = 23.3 – 100%) in baseline to 55.85% (range = 31.7 – 80%). There was an initial increasing trend in academic engagement in baseline and a decreasing trend in the intervention phase, with moderate-to-high data variability across phases.

Usability of CICO-Secondary

Social validity questionnaires from the CICO coordinator, classroom teachers, and students were used to evaluate the usability of CICO-Secondary. The CICO coordinator rated the student and teacher orientations to CICO-Secondary has having worked well (rated 5 on a 1 to 6 scale) and the implementation of the program has having not work well (rated 3). Concerning the implementation process, the CICO coordinator discussed that it was "tricky to implement in spring. Need a person [CICO coordinator] with time to dedicate and access to student population participating." The coordinator did not perceive CICO Secondary to have improved students' behaviors (rated 3), but did somewhat agree that components of the program would be improved if completed on an electronic application (rated as 4). For example, the coordinator discussed that it is important to "maximize convenience for students [participating in CICO-Secondary] to increase participation."

Seventeen of the 24 teachers (M = 70.8%) completed the social validity surveys. Table 1 includes a summary of the descriptive findings from the teacher survey. The highest rated item was that teachers *would participate again* in the program (M = 4.59, SD = 1.33) and the lowest rated item related to perceived improvements in *students positive behaviors in class* (M = 2.76, SD = 1.39). Qualitative responses on how the program could be improved included (a) selection of students for the program, (b) time of the year the program was implemented, and (c) including an online or electronic application component to the program to collect student and teacher ratings. To illustrate, one teacher said both of their students "exhibit a lack of attention/organization which [made] their ability to remember extra steps (get card, keep card, ask for rating) quite difficult." Related to when CICO-Secondary was implemented, another teacher said "I did not see any significant change in the behavior of the students participating. By

the end of May they were very set in their ways. This may be more effective earlier in the process." In regard to an online application component, one teacher said "using an app would improve the organization – they wouldn't lose the card, but it would also be a gateway to getting districted by other notifications on their phone or using CICO as an excuse to be on their phone during class."

All students, except Ellise, completed the social validity survey. Items rated the highest included *I would recommend CICO-Secondary for other students who may be struggling in school* (M = 4.25, SD = 4.5) and *CICO-Secondary helped improve my behavior at school* (M = 3.75, SD = 1.26) and *It would be better if CICO-Secondary could be completed on an application instead of the paper card* (M = 3.75, SD = 2.22). The item rated the lowest was *It was easy to participate in the CICO-Secondary* (M = 1.75, SD = 1.50). When asked how CICO-Secondary could be improved, three of the students suggested strategies for helping them remember to complete daily components of the program. For example, one of the students said "find another way to turn it [paper point card] in [be]cause I never remember" and another wrote "I forgot it a lot. It would be easier if you got like a notification on your phone."

Discussion

The purpose of this preliminary study was to investigate the usability and impact of an adapted CICO program for high school students in one high school. Overall, we found that the CICO coordinator, classroom teachers, and the students rated the CICO-Secondary protocol as being useable. Unfortunately, the fidelity data indicated that while the staff implemented major elements of the program as intended, too often students did not receive sufficient support to perform the essential steps of the CICO cycle (i.e., did not complete morning check-in, did not

self-monitor, did not recruit teacher feedback). It is worth noting that David was the exception who did perform the CICO steps, and his data provide descriptive support for a basic effect between the implementation of the program and a decrease in disruption/non-compliance behaviors.

Findings from this study provide support that CICO could have promise in high schools, especially when procedural components are adapted for the high school context and development level of the students. This pilot study sought to extent the survey findings by Kittelman et al. (2018) by adapting and testing procedural components CICO for high schools (e.g., varying check-in/check-out procedures, modifying daily point card). In addition, similar to Kittelman et al. (2018) and Swain-Bradway (2009), focusing on increasing academic behaviors (e.g., academic engagement, completing classwork) was an important area of emphasis for school personnel. In addition, based on the usability findings of this study, we found that the majority of high school personnel rated highly that they would participate in the program again, and the majority of students rated highly that they would recommend the program to other students who may be struggling in schools; however, further research on adapting and testing procedural components of CICO are warranted.

Limitations and Recommendations for Future Research

There were a number of limitations to this study. These included the low level of procedural fidelity by students, the variable adaptions that were made to CICO to meet students' needs, and the time of year the study was implemented. First, a major limitation of this study was the low level of student participation in the daily CICO routines (i.e., check-in with CICO coordinator, complete and return daily point cards). The majority of the students inconsistently participated in the program. If students did not check-in at the beginning of the day, they were

not able to access other critical components (i.e., self-rating and getting feedback on school-wide behavior expectations). Although two students had options for the morning check-in (CICO Coordinator or first period teacher), this improved their initial use of the card early in the day, but did not improve their use of the card throughout the day (or turning in of the card). In addition, because some students had the option of checking in with the CICO coordinator or their first period teacher, this introduced a level of variability in the program across students, which can make comparison of the effectiveness of the program across students more difficult. The adaptions were made to increase the likelihood that students would follow-through with the procedural elements of the program. Future examination of ways to increase student fidelity of completing morning check-ins and afternoon check-outs is important to establishing conclusive evidence for the effectiveness of the program in future research. For example, future research may want to explore adapting other procedural components of the traditional CICO program (e.g., paper daily point card, increasing self-regulation strategies) to test whether these adaptation may increase student participation and compliance in the program. If the program does not have initial fidelity, and the student does not experience the planned contingencies, the likelihood of a functional effect is reduced.

Additionally, the time of the school year when CICO-Secondary was piloted was problematic. As baseline observations began late in spring, many of the students' daily routines had been established (e.g., classes, meeting with friends, arrival times to school), which likely made it difficult for students to change routines to check-in with the CICO-coordinator. Likewise, as students had already established relationships with their classroom teachers, students may have been more reluctant to want to greet and receive feedback on their behaviors from them, especially if students had developed negative relationships with some of their

teachers. Future research should consider training school personnel (CICO coordinator, Tier 2 implementation team, and staff) to implement the program at the beginning of the school year to maximize school personnel and student buy-in and participation.

Recommendations for Practice

Role of CICO coordinator. As in lower grades, CICO-Secondary requires a coordinator to ensure procedural fidelity. This person should have 10 hours per week available to: train and support the teachers/students, conduct the daily CICO sessions with students, enter the data and attend meetings. A major role this person needs to fulfill is to train students and school personnel on the program and problem solve to ensure fidelity of implementation. Though the person fulfilling this coordinator role in this study had behavior expertise (i.e., behavior specialist for the school) she did not have the flexibility and protected time to complete the required tasks. For example, even if the school provided "training" during a faculty meeting, the coordinator still needed to have the time to train or re-orient teachers for students as they began the program. In addition, throughout the intervention phases, we observed times when students may have benefitted from booster training, or additional prompts, and the personnel time to complete these supports was unavailable.

Daily check-in/check-out. Morning check-ins and afternoon check-outs are critical to the successful implementation of CICO-Secondary. Unfortunately, these times of day are social times in high school when students are highly engaged in social reinforcers with friends. Asking students to take time to check-in with the CICO coordinator, rather than visit with friends, proved challenging. Additional adaptations, such as electronic prompting (e.g., phone alarms, email) or companion check-ins (recruit a friend to help prompt) to remind students to check-in with the CICO coordinator in the mornings may be useful.

Selection of students. Standard eligibility criteria that would remain the same for selection of high school students for CICO include: (a) referral from staff or parents, (b) engaging in problem behavior that warrants change but does not place the student at risk of alternative placement, and (c) not currently receiving intensive interventions for academic or problem behaviors. In addition, because of the academic focus in high school, schools might consider in determining eligibility criteria the display of low academic enabler skills (e.g., time management, homework completion) across multiple academic settings. The function of any absenteeism also needs to be understood to be sure it aligns with the function of the program.

Consistency of expectations. Unlike the lower grades, students in this study had multiple teachers and common school-wide expectations were interpreted differently across classes. School-wide expectations, established as part of Tier 1 systems and implemented across classrooms, make the teaching of expected behaviors, and the acknowledgement for positive behaviors more predictable for students. Interestingly, student behaviors in this study were often consistent in the same classrooms, but varied across classrooms. An example of the effects of differing across classroom contingencies is available in Figure 3 for David. He had higher baseline rates of disruption/non-compliant behaviors in Period 2 compared to Period 1, which may have been directly related to the higher level of consistency and acknowledgement he experienced in Period 1.

Conclusion

This study provides several meaningful extensions to research in the area of CICO. We describe procedural adaptations to CICO that may improve use in high schools. Challenges related to CICO implementation fidelity and descriptive data suggesting promise of CICO for high school students at risk indicate the need for additional research on this topic.

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Table 1

Descriptive Social Validity Teacher Findings on the Usability of CICO-Secondary (1 = strongly disagree to 6 = strongly agree)

	CICO has helped improve my students' behavior in class	*CICO has helped increase my students' positive behaviors in class*	*It is easy to participate in CICO*	*It would be better if CICO could be completed on an app instead of the paper card*	*If I had a choice, I would participate in CICO again*	*I would recommend CICO as a potential intervention for other students who may be struggling in school*
Teacher 1	4	4	5	6	6	6
Teacher 2	3	4	3	5	5	3
Teacher 3	2	1	4	3	4	2
Teacher 4	3	2	6	3	5	4
Teacher 5	4	4	5	4	6	5
Teacher 6	5	3	5	3	5	3
Teacher 7	5	5	5	2	5	4
Teacher 8	5	4	5	3	5	5
Teacher 9	4	4	1	3	4	4
Teacher 10	1	1	5	1	5	1
Teacher 11	1	1	1	4	1	2
Teacher 12	2	2	4	4	4	2
Teacher 13	3	3	4	2	3	4
Teacher 14	5	3	5	3	6	6
Teacher 15	1	1	6	3	6	6
Teacher 16	1	1	2		3	3
Teacher 17	5	4	5	2	5	5
M	3.18	2.77	4.18	3.19	4.59	3.82
Mdn	3	3	5	3	5	4
SD	1.59	1.39	1.55	1.22	1.33	1.55

Note. *M* = Mean; *Mdn* = Median; *SD* = Standard deviation

SHARP Card																
Student Name:									**Date:**							
	0 = Try Again				**1 = Okay**				**2 = Great**							
	Period 1 or 2				**Period 3 or 4**				**Period 5 or 6**				**Period 7 or 8**			
	Student			**Teacher**			**Student**			**Teacher**			**Student**			**Teacher**	
Greet	Y	or	N	Y or N	Y	or	N	Y or N	Y	or	N	Y or N	Y	or	N	Y or N
Self-aware	0	1	2	0 1 2	0	1	2	0 1 2	0	1	2	0 1 2	0	1	2	0 1 2
Honest	0	1	2	0 1 2	0	1	2	0 1 2	0	1	2	0 1 2	0	1	2	0 1 2
Appreciative	0	1	2	0 1 2	0	1	2	0 1 2	0	1	2	0 1 2	0	1	2	0 1 2
Respect	0	1	2	0 1 2	0	1	2	0 1 2	0	1	2	0 1 2	0	1	2	0 1 2
Persistent	0	1	2	0 1 2	0	1	2	0 1 2	0	1	2	0 1 2	0	1	2	0 1 2
Teacher Initials																
Feedback																
% Goal:	**Pts Possible:**				**Pts Received:**				**% of Pts Earned:**				**Goal Met? Y or N**			

Figure 1. The daily point card used by students participating in CICO-Secondary.

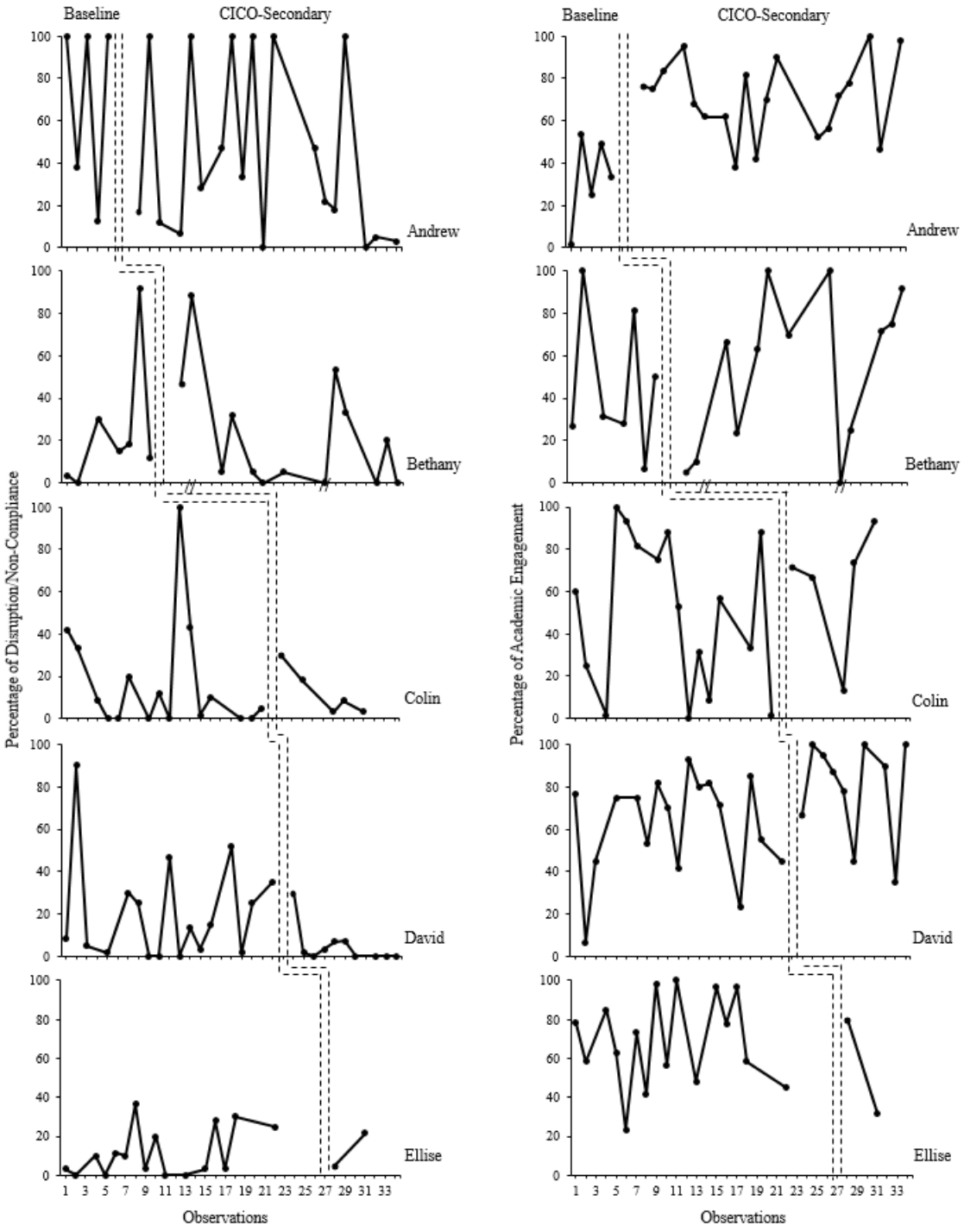

Figure 2. Percent of disruption/non-compliant (left) and academic engagement (right) behaviors across the five students.

Note. Dashes in graph for Bethany indicate days she refused to take medication.

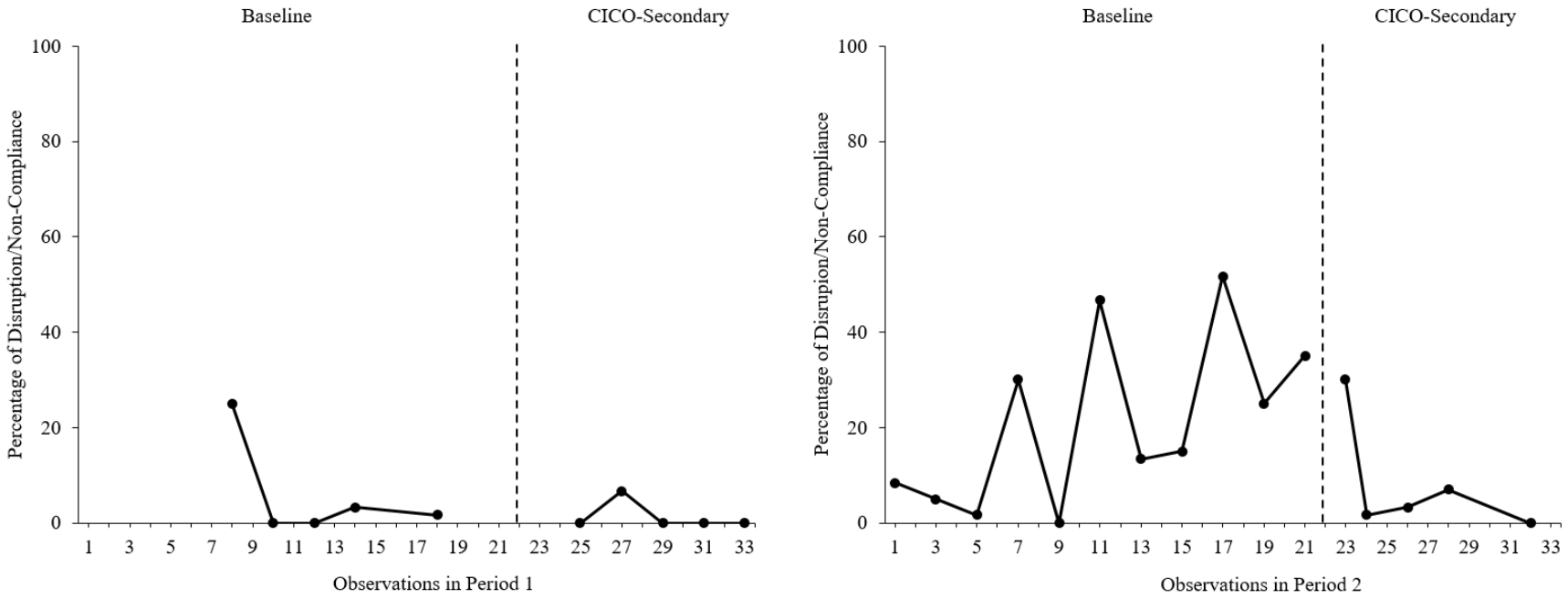

Figure 3. Differences in disruption/non-compliant behaviors across class periods for David.