Journal of Positive Behavior Interventions

The Effects of a Targeted Intervention to Reduce Problem Behaviors: Elementary School Implementation of Check In —Check Out

Anne W. Todd, Amy L. Campbell, Gwen G. Meyer and Robert H. Horner

The online version of this article can be found at:

Published by:

and

$SAGE

Additional services and information for **Journal of Positive Behavior Interventions** can be found at:

Email Alerts: http://pbi.sagepub.com/cgi/alerts

Subscriptions: http://pbi.sagepub.com/subscriptions

Reprints: http://www.sagepub.com/journalsReprints.nav

Permissions: http://www.sagepub.com/journalsPermissions.nav

>> Version of Record - Jan 16, 2008

What is This?

The Effects of a Targeted Intervention to Reduce Problem Behaviors

Elementary School Implementation of Check In–Check Out

Anne W. Todd

Amy L. Campbell

Gwen G. Meyer

Robert H. Horner
University of Oregon, Eugene

Behavior support in schools is increasingly viewed as a three-tier prevention effort in which *universal* interventions are used for primary prevention, *targeted* interventions are used for secondary prevention, and *intensive* interventions are used for tertiary prevention. A growing body of research has demonstrated the effectiveness of targeted interventions in decreasing the frequency of problem behaviors. The Check In–Check Out Program (CICO) is becoming a recognized targeted intervention. The present study examines if there is a functional relation between the implementation of CICO and a reduction in problem behaviors. Results indicate that implementation of CICO with four elementary school–age boys was functionally related to a reduction in problem behavior. Clinical and conceptual implications of these results, methodological limitations, and future research directions are reviewed.

Keywords: check in–check out; behavior education program; targeted intervention; secondary intervention; check and connect; school-wide interventions; challenging behaviors; elementary school students

S chool-wide positive behavior support (SWPBS) is a systems-level approach to building the social culture and behavioral supports needed for schools to be effective learning environments for all students. The approach builds on the three-tiered community health prevention model proposed by Walker et al. (1996), with (a) universal behavior support systems for all students, (b) secondary or targeted levels of support for students at risk of succeeding without additional support, and (c) tertiary support that includes function-based support for individualized, intensive interventions. Schoolwide PBS is a well-documented strategy for establishing a positive school culture at the universal level (Horner, Sugai, Todd, & Lewis-Palmer, 2005; Walker et al., 1996). To date, research has emphasized the impact of universal and intensive interventions (Nelson, Martella, & Marchand-Martella, 2002; Metzler, Biglan, & Rusby, 2001; Todd, Horner, Sugai, & Sprague, 1999; Todd, Horner, Sugai, & Colvin, 1999; Walker et al., 1996). Recently, however, the value of targeted interventions has gained more attention as educators search for highly efficient strategies for preventing and addressing problem behavior (Crone, Horner, & Hawken, 2003; Fairbanks, Sugai, Guardino, & Lathrop, in press; Filter et al., in press; Hawken & Horner, 2003; Lewis & Sugai, 1999; March & Horner, 2002).

Targeted interventions may include strategies such as social skills training, check in–check out systems, First Step to Success, peer mentors, or homework clubs (Crone et al., 2003; Hawken & Horner, 2003; Lewis & Sugai, 1999; Nelson and Carr, 1996; Walker, Severson, & Feil, 1998). Targeted interventions are designed to provide efficient behavior support for students at risk of more intense problem behavior. Three elements have been identified as key to effective, targeted interventions: organizational systems, intervention practices, and data use (Horner et al., 2005). System variables include team

based planning, data-driven decisions, a program plan known by all staff, program availability for implementation at any time, and the the inclusion of a regular home–school communication exchange in the program. Practices for targeted interventions include teaching the student the skills, teaching the student when to use the skills, teaching the student the routine for using the targeted intervention, teaching the home report routine, and teaching the banking and shopping routine. Data variables include individual student progress data, fidelity data on use of the program, and summary data of program use overall. Each of these elements (system variables, practices, and data) work in concert to meet the defined outcomes for developing, implementing, and monitoring targeted interventions.

The check in–check out (CICO) approach to targeted behavior support is based on a simple strategy for increasing ongoing structure and feedback for at-risk students. The elements of CICO systems have been used in schools for many years (Blechman, Taylor, & Schrader, 1981; Burkwist, Mabee, & McLaughlin, 1987; Chafouleas, McDougal, Riley-Tillman, Panahon, & Hilt, 2005; Chafouleas, Riley-Tillman, & McDougal, 2002; Condon & Tobin, 2001; Fairchild, 1983; Galloway & Sheridan, 1994; Schumaker, Hovell, & Sherman, 1977; Stein, 1999; Struckoff, McLaughlin, & Bialozor, 1987).

The tactic for increasing structure and feedback in the CICO approach revolves around the use of a behavior report card. Behavior report cards have appeared in the literature since the 1980s with documented success (Davies & McLaughlin, 1989; Dougherty & Dougherty, 1977; Crone et al., 2003; Hawken & Horner, 2003). Depending on the structure of the behavior report card, it can provide (a) structure and prompts that students need through the day, (b) adult written feedback through the day, (c) visual reminders of personal goals for the day, (d) data collection, and (e) communication between adults at school and home.

To fit the definition of a targeted intervention, the CICO system needs to be continuously available to staff, students, and families and include a plan for instruction of the system and skills needed for the student using the CICO system. CICO systems typically include increased monitoring and feedback to students about their behavior, positive reinforcement of desirable behavior, and a home–school component (Davies & McLaughlin, 1989; Dougherty & Dougherty, 1977; Hawken & Horner, 2003). Students check in with school personnel in the morning, receive feedback throughout the day, and then check out with school personnel before they leave. Typically, the child earns points to receive some form of daily reinforcer. CICO systems have documented success (Condon &

Tobin, 2001; Davies & McLaughlin, 1989; Dougherty & Dougherty, 1977; Hawken & Horner, 2003; Fairchild, 1983; Schumaker, et al., 1977; Stein, 1999), especially for children who engage in problem behaviors maintained by adult attention (March & Horner, 2002).

The present study examines the effect of the CICO program when implemented by typical school personnel under typical school conditions with one kindergartener, one first grader, one second grader and one third grader. The specific research question was, "Is there a functional relation between implementation of check in–check out and reduction in the frequency of problem behaviors?"

Method

Setting

The study took place in a rural elementary school (Grades K–5) of 472 students located in the Pacific Northwest. The school provided two instructional options for students: English instruction only, or half-day English and half-day Spanish. There were 217 students in the English-only section and 255 students in the Spanish immersion section of the school. As measured by the *School-Wide Evaluation Tool* (Horner et al., 2004), the school had an average overall implementation mean score of 97% for the past three school years, indicating that primary prevention elements of schoolwide positive behavior support were in place. The mean rate of reported problem behaviors, both major and minor offenses, over the 3-year period from academic year 2002–2003 to 2004– 2005 was 1.34 per 100 students per school day. In 2004– 2005, 86% of third-grade English instruction students and 91% of English–Spanish students met or exceeded the benchmark on the *Oregon Statewide Assessment in Reading* (1999).

Participants used the CICO school-wide, all day, in all settings. All direct observations of participants were conducted in classroom settings during academic activities. Four different classrooms in the school were used for direct observations of problem behavior with each participant as described below. Two of the four classrooms used the English-only curriculum and two of the classrooms used the Spanish immersion curriculum.

Participants

Four elementary school–age boys participated in this study. Participants were selected based on (a) administrator nomination due to frequency of office visits for disrupting classroom instruction, (b) teacher verification that the students' problem behaviors repetitively

disrupted classroom instruction, (c) parental consent, and (d) student assent.

Trevor, a Native American boy in third grade, received daily reading and math instruction in a special education classroom and spent all other instructional and school time in a class with 27 students. Trevor read 15 correct words per minute (WPM) during a 1-min time sample when presented with grade-level passages at the beginning of the study compared to 97 correct WPM for students in his grade level. Direct observations and teacher reports indicated that Trevor engaged in noncompliant behavior, including refusing to complete academic assignments, hiding under furniture, and refusing to answer questions from adults, and his behavior appeared to be maintained by adult attention and escape from difficult tasks. On the teacher form of the *Social Skills Rating System* (SSRS; Gresham & Elliot, 1990), Trevor was rated significantly below average in academic competence (11th percentile), above average in problem behaviors (94th percentile), and low average in social skills (32nd percentile) when compared to his same-age peers.

Chad, a Caucasian boy in first grade, received all instruction in a first-grade general education classroom with 25 students. Chad participated in the Spanish Immersion Program option at the school. Chad read 43 correct WPM at the beginning of the study compared to 63 correct WPM for his grade level. Teacher reports, confirmed via direct observations, indicated that during academic instruction he engaged in disruptive behaviors (talking out, talking to peers) maintained by adult attention. On the SSRS teacher form, Chad was rated average in academic competence (47th percentile), average in problem behaviors (70th percentile), and average in social skills (68th percentile) when compared to his same-age peers. Chad was not on medication at the beginning of the study but started taking 20 mg of Ritalin daily after Session 12 of baseline.

Kendell, an African American boy in second grade, received all instruction in a second-grade general education classroom with 26 students. Kendell attended the Spanish Immersion Program at the school. He read 82 correct WPM during a 1-min time sample when presented with second-grade-level passages as compared to 74 correct WPM for his grade-level peers. According to teacher reports and direct observations, he engaged in disruptive behavior during academic instruction (making drumming noises on the top of his desk, talking out, poking peers, giggling) that was maintained by adult and peer attention. On the SSRS teacher form, Kendell was rated below average in academic competence (23rd percentile), above average in problem behaviors (91st percentile), and average in social skills (34th percentile) when compared to

elementary school–age boys. When the study was getting organized, Kendell was scheduled for a student services team (SST) meeting due to his teachers' academic and social concerns. The SST met with Kendell's parents during the first week of the study to discuss Kendell's academic, social, and behavioral status, progress, and areas of concern. The SST recommended that Kendell start CICO and be a possible participant in the study. Direct observations for Kendell began 1 day after parent consent and student assent were obtained.

Eric, a Caucasian boy in kindergarten, received all instruction in a classroom of 30 students. Teacher reports and direct observations indicated that he engaged in disruptive behaviors during circle time, including talking to peers, making noises, and talking out, which were maintained by adult attention. On district assessments of prereading skills (letter naming, letter sounds, phonemic segmentation), Eric scored in the average range for children in his grade. On the SSRS teacher form, he was rated below average in academic competence (12th percentile), average in problem behaviors (70th percentile), and average in social skills (32nd percentile) when compared to his same-age peers.

Seven teachers and three CICO program staff also participated in the study. Teachers of the four students included a total of six primary teachers (Kendell and Chad each had two primary teachers, while Eric and Trevor each had one primary teacher). Additionally, Trevor's special education teacher participated. The three CICO staff members included the CICO coordinator, a morning check-in staff person, and an afternoon check-out staff person. The six primary teachers provided assessment information; all seven teachers provided social validity information. All seven participating teachers and the three CICO staff provided contextual fit information.

Assessment

Prior to initiation of the study a functional behavioral assessment was conducted for each student. The assessment process involved a 20- to 40-min interview conducted by the first author with each participant's primary teacher using the *Functional Assessment Checklist for Teachers and Staff* (FACTS; March et al., 2000). This interview identifies problem behaviors, antecedent events that predict occurrence and nonoccurrence of problem behaviors, and the primary maintaining consequence for the problem behaviors. Following the interview, the first author conducted one or two 20-min direct observations of the student in the academic period identified in the FACTS as most problematic. During these direct observations, an antecedent–behavior–consequence (ABC) chart was

Table 1
Problem Behavior Definitions

Problem Behavior	Definition
1. Being in the wrong location	Student is in a location that is different from the location expected by the teacher at that time.
2. Talking out	Student engages in vocalizations that are not preceded by a raised hand and/or are not initiated by an adult.
3. Noncompliance	Student is not following directions or classroom rules/expectations.
4. Talking to peers	Student is talking to peers or attempting to initiate conversations with peers during instruction, activities, or independent seatwork (when the expectations are that students are not to be talking).
5. Disruptive	Student is engaged in behavior that creates a classroom disturbance.
6. Negative physical or verbal interactions	Student engages in negative verbal or physical behavior.

completed and used to confirm or refute the information obtained through the FACTS interview. A FACTS hypothesis statement was judged to be confirmed if the direct observation data provided similar information to the antecedent and consequence events defined in the FACTS hypothesis statement.

Measurement

Direct Observation of Problem Behavior

Problem behavior was observed 3 or 4 days per week using a 20-min partial interval recording system. For each participant, observations took place during the same academic class period each day. The specific class period for each student was determined by teachers' reports of the most problematic time of day based on an adapted version of the FACTS interview. Miniature tape players with headphones were used to signal the beginning of each 10-s interval and were attached to each observer's belt loop for the observation. A tape was played that prompted the observer at each 10-s interval within the observation period and to record information for the particular interval. Problem behaviors included (a) being in the wrong location, (b) talking out, (c) noncompliance, (d) talking to peers, (e) being disruptive, and (g) negative physical or verbal interactions. Definitions of the problem behaviors are provided in Table 1.

To provide a context in which to assess the problem behavior of target students, a composite index of classroom problem behavior was obtained. Two to five times in baseline, and one to six times during intervention, the problem behavior of nontarget students was assessed. Each composite observation involved four nontarget students who were selected based on teacher nomination for not engaging in problem behavior at a level that posed a problem. The nontarget students engaged in the same instructional activity as the target students. Observers selected one student for the first 30 intervals in an observation period, a second student for the 31st through 60th observation intervals, a third student for the 61st through 90th, and a fourth student for the 91st through 120th. The percentage of intervals with problem behavior across all 120 intervals was calculated and resulted in one composite score for the observation session.

Office Discipline Referrals

Office discipline referrals (ODRs) were instances in which a student's problem behavior placed himself or others at risk, involved violation of a major school rule, or produced disruption of instruction for other students. Each ODR resulted in a formal report, and the number of ODR reports per school day served as a clinical index for the study.

Social Validity

The teacher version of the *CICO Program Acceptability Questionnaire* (Hawken & Horner, 2004) was used to assess teacher and staff perceptions of problem behaviors. This five-item checklist assessed teacher perceptions of decreases in problem behavior, increases in appropriate behavior, ease of implementation, effort required to implement, and whether the teacher would recommend the intervention to others. Teachers with students in the CICO study completed this checklist using a six-point Likert-type scale, with higher scores indicating more favorable perceptions of the program. This was completed by the teacher at the end of the second week that the student was using the CICO program and again at the end of the study.

Contextual Fit

Contextual fit provides an indication of the extent to which the behavior support plan procedures are consistent with the skills, values, resources, and administrative

support experienced by the team members (Albin, Lucyshyn, Horner, & Flannery 1996). The *Self-Assessment of Contextual Fit in Schools* (Horner, Salantine, & Albin, 2003) is a 16-item checklist designed to assess whether the features of a behavior support plan are likely to be implemented with fidelity. Those people who will implement the plan are asked to use a six-point Likert-type scale to rate 16 items across eight areas: (a) their knowledge about what the plan asks of them, (b) whether they have the skills required to implement the plan, (c) whether they are comfortable doing what is asked of them, (d) whether they have the resources to implement the plan, (e) whether they have the administrative support to implement the plan, (f) whether they believe the plan will be effective for the target student, (g) whether they believe the goals of the plan are in the student's best interest, and (h) whether the effort needed to implement the plan is feasible. The seven teachers and the three CICO staff members completed the contextual fit self-assessment at the end of the study, using a six-point Likert-type scale, with higher scores indicating greater perceptions of contextual fit.

Interobserver Agreement

Interobserver agreement for problem behavior data were collected by having two data collectors stand side by side and record direct observation data of the problem behavior independently. A two-pronged adapter was used so that two sets of head phones could hear the same observation tape. Agreement was assessed on an interval-by-interval basis, with both observers needing to record the interval the same for an agreement to be scored. The number of agreements for an observation session was divided by the number of agreements and disagreements and multiplied by 100%. Interobserver agreement was measured during 24% of the observation sessions across all four participants. Mean total agreement was 96.33% (range = 87%–99%) for Trevor; 96.1% (range = 91%–100%) for Chad; 94% (range = 85%–100%) for Kendell; and 94.9% (range = 88%–100%) for Eric.

Occurrence-only agreement also was computed by dividing the number of intervals with agreement by the number of intervals in which either observer recorded the interval as including a problem behavior. Mean occurrence-only agreement for baseline across all four participants was 93.37% (range = 83%–100%) and exceeded 83% for each participant. Similarly, mean occurrence-only agreement for the intervention phase was 93.75% (95% = range 82%–100%), with agreement for each participant exceeding 82%.

Fidelity of implementation was monitored through the student services team. The SST met every 2 weeks to review student data for CICO and for individualized support plans. Logistics of how the CICO program was being implemented were summarized and modified to keep the fidelity of implementation at a level of satisfaction both in student progress and in implementation and monitoring.

Design and Procedures

To examine the effects of the CICO program on problem behavior, the present study utilized a multiple baseline across subjects design. The study was conducted across a 10-week period beginning in April with completion at the end of the school year. There were two phases in this study: baseline and CICO.
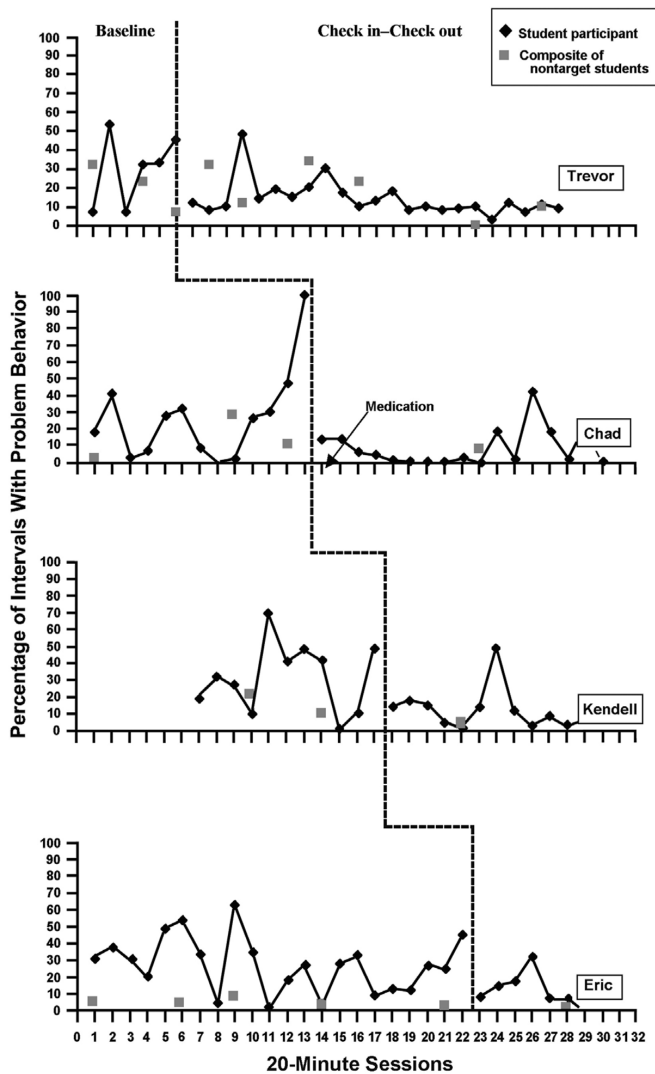
Baseline

During baseline, direct observation of problem behavior for target and nontarget students was collected using typical classroom procedures. Office discipline referrals were monitored through collection of the written ODR reports.

CICO

During the check in–check out phase, participants individually checked in with a school staff member before school started. The staff member would collect the parent report from the previous day and provide the student with a new daily CICO report card and verbal encouragement. The CICO card was a 4-inch × 5.5-inch (10-cm × 14-cm) piece of paper that included the student's name, the date, the CICO schedule, an area for rating of each of the three school rules (safe, responsible, and respectful), and a place to record the daily point goal and total points earned for the day. The CICO schedule called for feedback five times during the school day: at check-in, before morning recess, before lunch, before afternoon recess, and at check-out at the end of the day. The students carried the CICO cards with them all day in their binders. When student binders were not needed during the day (lunch, recess, bathroom), CICO report cards were not physically present with the student. At the three specified times of the day, students approached the teacher with the CICO report card, and the teacher provided the student with feedback about their behavior. The student could earn from 1 through 3 points per school rule per time period (possibility of 9 points per check-in time); the points indicated their performance on each of the three school rules, with a 1 indicating that the student had a difficult time, a 2 indicating that the student did acceptably, and a 3 indicating the student did very well. If problem behaviors warranted an office discipline

Figure 1
Percentage of 10-Second Intervals With Problem Behavior During 20-Minute Observation Session

and comments about what went well and things the student should work on the next day. Parents signed the report and the student brought the report back to school for the next morning check-in (see Crone et al., 2003)

Results

Functional Behavior Assessment

Prior to beginning data collection, a functional behavior assessment was conducted for all four participants. All four participant's teachers reported that they primarily engaged in problem behaviors during structured academic activities (i.e., large group instruction, independent work). Based on interview information, adult attention was the hypothesized maintaining function for all participants. Direct observations supported the hypothesis statements for each of the participants.

Problem Behavior

Figure 1 summarizes the results across participants. During baseline, all four participants displayed unacceptable, though variable, levels of problem behaviors. Trevor averaged 30% of baseline intervals with problem behavior (range = 7%–53%), which was 3.5% higher than the mean of the three composite scores for nontarget students. Chad averaged 26% (range = 0%–100%) of intervals with problem behavior, which was 13.3% greater than the mean of three scores for his composite peers. A decision unrelated to the study resulted in Chad's initiating Ritalin medication at a dose of 20 mg daily after Session 12. The day preceding initiation of medication had 100% of intervals with problem behavior. Kendell averaged 34% (range = 1%–70%) of baseline intervals with problem behavior, which was 19.5% greater than the mean of two scores for his composite peers. Eric averaged 27% (range = 1%–63%) of baseline intervals with problem behaviors, which was 23.6% greater than the mean of five scores for his composite peers.

Upon implementation of CICO, all four participants displayed a reduction in the level and variability of problem behaviors. During CICO implementation, Trevor averaged 14% of intervals with problem behavior, a decrease of 16% points from baseline. Chad averaged 8% intervals with problem behavior during the CICO phase, a decrease of 18% points compared to baseline. Kendell averaged 13% of intervals with problem behavior during CICO, a decrease of 19% points compared with baseline. On Day 25, Kendell had a substitute teacher who had not been trained to implement CICO, which contributed to an increase in problem behavior. Eric averaged 12% of observation intervals with problem behavior during

referral, the student did not receive points for the time period or periods he was out of his typical schedule due to his problem behavior. At the end of the day, the student met with the staff member for check-out, at which time his behavior for the day was reviewed. Students could choose to spend points earned during the school day on specific rewards including stickers, pencils, time with peer or adult, special activity, or extra recess for class. Students had the option of trading points for a smaller reward (snack, object from treasure box) or saving points for a larger reward (lunch with the principal, extra recess). At check-out, a report home was completed that summarized the student's behavior for that specific day. The home report included documentation of points earned

Table 2
Average Number of Office Discipline
Referrals per Day

Student	Baseline	Check In–Check Out
Trevor	0.17	0.16
Chad	0.15	0.0
Kendell	0.10	0.0
Eric	0.15	0.0

CICO, a decrease of 15% points compared with baseline. In addition, Eric displayed a reduction in variability, with a slightly decreasing trend.

Office Discipline Referrals

Table 2 provides the average number of office discipline referrals per day for each participant. During baseline, the average number of office discipline referrals per day across participants was 0.14. During the CICO phase, Trevor received the only office discipline referral across the four participants. The average ODR per day across the four participants during the CICO phase was 0.04.

Social Validity

The seven teachers implementing CICO completed the *CICO Program Acceptability Questionnaire* (Hawken & Horner, 2004) 2 weeks after each participant started the CICO program (Time 1), with the exception of Eric's teacher, who completed the questionnaire after 1 week of implementation. The questionnaire was completed again at the end of the study (Time 2) by the seven teachers and the three additional CICO staff members at the school. Table 3 provides the number of teacher responses for both Time 1 and Time 2. Responses to each of the five program acceptability questions were combined and summarized in three levels of agreement across the 6-point rating scale, with 1 or 2 meaning *disagree*, 3 or 4 meaning *neutral*, and 5 or 6 meaning *agree*. Specifically, in Time 1, four of seven teachers agreed that during CICO implementation (a) problem behaviors decreased, (b) appropriate student behaviors increased, and (c) CICO was easy to implement and worth the effort. All seven teachers agreed that they would recommend that other schools use the CICO process and disagreed that the CICO process required more effort than it was worth. At Time 2, five of 10 respondents agreed that problem behaviors had decreased and appropriate classroom behaviors had increased. Six of the 10 respondents agreed that CICO was relatively easy to implement, 7 of 10 disagreed that the CICO process required more effort than it was worth, and 9 of 10 teachers said

that they would recommend CICO to other schools to use with similar students. Overall, the CICO program was acceptable to teachers and staff to implement.

Contextual Fit

The seven teachers and the three CICO staff members who completed the *Program Acceptability Questionnaire* at Time 2 also completed a *Self-Assessment of Contextual Fit in Schools* measure (Horner et al., 2003). Table 4 provides a summary of the percentage of agreements and disagreements from the 10 respondents across the eight contextual fit areas. In general, respondents agreed that they were knowledgeable of the elements in the behavior support (CICO) plan, that they had the skills needed to implement the plan, and that the behavior support plan was effective, efficient to implement, and in the best interest of the student. Seven of the 10 respondents rated availability of implementation resources from 4 through 6 (*barely agree* through *strongly agree*), and 8 of 10 respondents agreed (rated 4–6) that the school provided enough supervision support for effective implementation of the behavior support plan.

Discussion

As schools move to implement the three-tiered prevention model, efforts will focus on adding targeted and intensive behavior support elements to the primary prevention package. The CICO package offers strong promise as one targeted intervention option. In the present analysis, the four students demonstrated an average 17.5% reduction in problem behavior from mean baseline to mean CICO levels. That this reduction was functionally related to CICO implementation is suggested by the immediacy and stability of behavior reduction for Trevor, Kendell, and Eric. Due to Chad's entry into a medication intervention after session 12 without the knowledge of the research team, it is unclear if reductions in his problem behavior during the CICO phase were due to medication alone, CICO alone, or an interaction. Chad's data are consistent with the patterns of the other three participants, but must be viewed as more descriptive than experimental.

It is also important to note that the CICO program provides regular times for students to receive adult attention during the school day. Since the functional assessment results for each participant defined adult attention as the primary maintaining consequence of problem behavior, reductions in problem behavior may have occurred as a result of the delivery of adult attention during the CICO program. From this study, it appears that the CICO program works well with attention-maintained students but the

Table 3
CICO Program Acceptability Questionnaire

	Time 1 (*n* = 7)			Time 2 (*n* = 10)		
Question	Disagree 1–2	Neutral 3–4	Agree 5–6	Disagree 1–2	Neutral 3–4	Agree 5–6
1. Problem behaviors have decreased since enrollment in CICO.	0—	3	4	—	5	5
2. Appropriate classroom behaviors have increased since enrollment in CICO.	—	3	4	1	4	5
3. It was relatively easy (e.g. amount of time/effort) to implement the CICO program.	—	3	4	—	4	6
4. The CICO process for this student required more effort than it was worth.	7	—	—	7	2	1
5. I would recommend that other schools use the CICO process with similar students.	—	—	7	—	1	9

Note: CICO = check in–check out.

Table 4
Percentage of Responses to a Self-Assessment of Contextual Fit in Schools

Area	Agree (%)	Disagree (%)
Knowledge of elements in the behavior support plan	100	0
Skills needed to implement the behavior support plan	100	0
Values ae consistent with elements of the behavior support plan	100	0
Resources are available to implement the plan	70	30
Administrative support	90	10
Effectiveness of behavior support plan	100	0
Behavior support plan is in the best interest of the student	100	0
Behavior support plan is efficient to implement	90	10

Note: *n* = 10.

impact of CICO is unknown for students for whom escaping tasks or individuals is the primary maintaining consequence for problem behavior. Future research should examine the efficacy of CICO for these students.

One contribution of the study is documentation that typical school personnel using typical resources were able to implement the CICO intervention and obtain functional effects with a kindergartener, a first grader, a second grader and a third grader. It is important that behavior support interventions be demonstrated not only to produce desired effects, but to be doable by typical personnel under typical conditions. The contextual fit and social validation data combined with the direct observation and ODR results provide a more complete message. The contextual fit and social validation data suggest that the CICO procedures were perceived as doable and effective. The direct observation data demonstrate with strong rigor that problem behavior was reduced in the monitored academic period. The ODR data suggest that the effects were consistent across the school day.

It may be relevant to note that the CICO intervention was implemented within a school that was already using school-wide behavior support procedures. School-wide behavioral expectations had been defined, taught, and consistently acknowledged. In addition, the staff had a systematic process for defining and responding to problem behaviors, including a regular data system for monitoring and reporting office discipline referrals. This context may have improved the impact of the CICO procedures. Teachers had behavioral expectations that were incorporated into the CICO procedures, a formal system was in place that may have improved ongoing rewards for appropriate behavior, and peer contingencies were in place to enhance the likelihood that peers would support rather than discourage appropriate behavior. While these school-wide features were insufficient to limit problem behavior during baseline, they may have contributed to the effectiveness of the CICO procedures.

The study contributes to the field conceptually in providing a formal demonstration of CICO effectiveness with students who scored in the 70th through 91st percentiles for problem behavior levels as measured by the SSRS and who were identified by staff as engaging in attention-maintained problem behavior. Collectively, the data support CICO as one part of a comprehensive, school-wide behavior support approach that also includes

school-wide systems, and intensive, individualized behavior support systems.

Limitations exist, however, that should influence interpretation of the results and directions for future research. The fact that the school was using school-wide positive behavior support systems makes extrapolation of the CICO results to other school contexts less certain. Formal fidelity-of-intervention measures were not conducted, although the school did record whether each student checked in, brought the home report back, and checked out daily. In addition, the school calculated a percentage of possible points earned daily and reviewed student progress every 2 weeks. The small number of participants in the study allows demonstration that CICO can be effective but should not be interpreted as documentation that the procedures will be effective with all students. In fact, March and Horner (2002) demonstrated the need to add individualized strategies based on functional behavioral assessment outcomes to a variant of CICO. In addition, reliability of the FBA measures was not assessed formally. Additional research is needed to identify those students for whom CICO will be most helpful and to identify adaptations that would be effective for escape-motivated students using the program.

The results are also limited by the unintended medication intervention for Chad and the overall length of the intervention. The ending of the school year prevented the study from documenting maintenance of effects. Future research is needed to document whether CICO procedures can be sustained by staff with fidelity and effectiveness over long time periods. The limited duration of the study also prevented the school staff from implementing the self-management components of the CICO model (Crone et al., 2003). However, each of the four participants began the next school year using the CICO program with minimal set up and training efforts needed. The school implemented CICO with 15 students and is embedding self-monitoring as a second phase for established and successful CICO students. Future research would be helpful to determine whether the efficiency, effectiveness, and durability of CICO is affected by the addition of self-monitoring and self-recruitment of rewards.

Taken together, the present results document the feasibility and effectives of adding CICO procedures to an existing schoolwide PBS package. The positive social validity (contextual fit) ratings by teachers and the combined assessment of problem behavior via ODR and direct observation support further implementation and assessment of CICO as a part of any elementary school behavior support effort.

References

Albin, R. W., Lucyshyn, J. M., Horner, R. H., & Flannery, K. B. (1996). Contextual fit for behavioral support plans: A model for a goodness of fit. In L. K. Koegel, R. L. Koegel, & G. Dunlap (Eds.), *Positive behavioral support: Including people with difficult behavior in the community* (pp. 81–98). Baltimore: Brookes.

Blechman, E. A., Taylor, C. J., & Schrader, S. M. (1981). Family problem solving versus home notes as early investigation with high-risk children. *Journal of Consulting and Clinical Psychology*, *49*, 919–926.

Burkwist, B. J., Mabee, W. S., & McLaughlin, T. F. (1987). The effect of a daily report card system on inappropriate classroom verbalizations with a junior high school learning-disabled student. *Techniques*, *3*, 265–272.

Chafouleas, S. M., McDougal, J. L., Riley-Tillman, C. T., Panahon, C. J., & Hilt, A. M. (2005). What do daily behavior report cards (DBRC's) measure? An initial comparison of DBRC's with direct observation for off-task behavior. *Psychology in the Schools*, *42*, 669–676.

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

Condon, K. A., & Tobin, T. J. (2001). Using electronic and other new ways to help students improve their behavior. *Teaching Exceptional Children*, *34*(1), 44–51.

Crone, D. A., Horner, R. H., & Hawken, L. (2003). *Responding to problem behavior in the school: The behavior education program*. New York: Guilford.

Davies, D. E., & McLaughlin, T. F. (1989). Effects of a daily report card on disruptive behavior in primary students. *BC Journal of Special Education*, *13*, 173–181.

Dougherty, E. H., & Dougherty, A. (1977). The daily report card: A simplified and flexible package for classroom behavior management. *Psychology in the Schools*, *14*, 191–195.

Fairbanks, S., Sugai, S., Guardino, D., & Lathrop, M. (in press). Response to intervention: An evaluation of a classroom system of behavior support for second grade students. *Exceptional Children*.

Fairchild, T. N. (1983). Effects of a daily report card system on an eighth grader exhibiting behavioral and motivational problems. *The School Counselor*, *31*(1), 83–86.

Filter, K., Benedict, E., McKenna, M., Horner, R. H., Todd, A., & Watson, J. (in press). Check in/check out: An efficient, secondary intervention for reducing problem behaviors in schools. *Journal of Positive Behavioral Interventions and Supports*.

Galloway, J., & Sheridan, S. M. (1994). Implementing scientific practices through case studies: Examples using home school interventions and consultation. *Journal of School Psychology*, *32*, 385–413.

Gresham, F., & Elliot, S. N. (1990). *Social skills rating system*. Circle Pines, MN: American Guidance Service.

Hawken, L., & Horner, R. (2004). *CICO program acceptability questionnaire*. Eugene: University of Oregon, Educational and Community Supports.

Hawken, L. S., & Horner, R. H. (2003). Evaluation of a targeted intervention within a schoolwide system of behavior support. *Journal of Behavioral Education*, *12*, 225–240.

Horner, R., Salantine, S., & Albin, R. (2003). *Self assessment of contextual fit in schools*. Eugene: University of Oregon, Educational and Community Supports.

Horner, R. H., Sugai, G., Todd, A. W., & Lewis-Palmer, T. (2005). School-wide positive behavior support: An alternative approach to discipline in schools. In L. Bambara & L. Kern (Eds.), *Positive behavior support* (pp. 359–390). New York: Guilford Press.

Horner, R. H., Todd, A. W., Lewis-Palmer, T., Irvin, L. K., Sugai, G., & Boland, J. B. (2004). The School-wide evaluation tool (SET): A research instrument for assessing school-wide positive behavior support. *Journal of Positive Behavioral Interventions*, 6, 3–12.

Lewis, T. J., & Sugai, G. (1999). Effective behavior support: A systems approach to proactive school-wide management. *Effective School Practices*, *17*, 47–53.

March, R. E., & Horner, R. H. (2002). Feasibility of contributions of functional behavioral assessment in schools. *Journal of Emotional and Behavioral Disorders*, *10*, 158–171.

March, R., Horner, R., Lewis-Palmer, T., Brown, D., Crone, D., Todd, A., et al. (2000). *Functional assessment checklist for teachers and staff (FACTS)*. Eugene, OR: Educational and Community Supports.

Metzler, C., Biglan, A., & Rusby, J. (2001). Evaluation of a comprehensive behavior management program to improve school wide positive behavior support. *Education & Treatment of Children*, 24, 448–479.

Nelson, J. R., & Carr, B. A. (1996). *The think time strategy for schools: Bringing order to the classroom*. Longmont, CO: Sopris West.

Nelson, J. R., Martella, R. M., & Marchand-Martella, N. (2002). Maximizing student learning: The effects of a comprehensive school-based program for preventing problem behaviors. *Journal of Emotional and Behavioral Disorders*, *10*, 136–148.

No Child Left Behind Act of 2001, 20 U.S.C. 70 § 6301 *et seq*. (2002).

Oregon Statewide Assessment Program. (1999). *Reading and literature, mathematics, science and social science*. Salem: Oregon Department of Education.

Schumaker, J. B., Hovell, M. F., & Sherman, J. A. (1977). An analysis of daily report cards and parent-managed privileges in the improvement of adolescents' classroom performance. *Journal of Applied Behavior Analysis*, *10*, 449–464.

Stein, D. B. (1999). A medication-free parent management program for children diagnosed as ADHD. *Ethical Human Sciences and Services*, *1*(1), 61–79.

Struckoff, P. M., McLaughlin, T. F., & Bialozor, R. C. (1987). The effects of a daily report card system in increasing homework completion and accuracy in a special education setting. *Techniques*, *3*, 19–26.

Todd, A., Horner, R., Sugai, G., & Colvin, G. (1999). Individualizing school-wide discipline for students with chronic problem behaviors: A two level team approach. *Effective School Practices*, *17*(4), 72–82.

Todd, A. W., Horner, R. H., Sugai, G., & Sprague, J. R. (1999). Effective behavior support: Strengthening school-wide systems through a team-based approach. *Effective School Practices*, *17*(4), 23–37.

Walker, H., Severson, H., & Feil, E. (1998). First Steps to Success: Intervening at the point of school entry to prevent antisocial behavior patterns. *Psychology in the Schools*, *35*, 259–269.

Walker, H. M., Horner, R. H., Sugai, G., Bullis, M., Sprague, J. R., Bricker, D., et al. (1996). Integrated approaches to preventing antisocial behavior patterns among school-age children and youth. *Journal of Emotional and Behavioral Disorders*, *4*, 194–209.

Anne W. Todd, MS, is a senior research assistant in educational and community supports at the University of Oregon.

Amy L. Campbell is a doctoral student in school psychology at the University of Oregon.

Gwen G. Meyer, MS, is a research assistant in educational and community supports at the University of Oregon.

Robert H. Horner, PhD, is a professor of special education at the University of Oregon. He currently codirects the OSEP Technical Assistance Center on Positive Behavior Interventions and Supports and the OSEP Research and Demonstration Center on School-Wide Behavior Support.