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S. Kathleen Krach, Michael P. McCreery, Raven Wilcox and Shannon
D. Focaracci

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Positive Behavioral Supports:
Empirically Supported Use of Behavioral Logs

S. Kathleen Krach, Ph.D.

Florida State University

Michael P. McCreery, Ph.D.

University of Nevada Las Vegas

Raven Wilcox

Shannon D. Focaracci, B.S

Florida State University

Please address correspondence to S. Kathleen Krach at skrach@fsu.edu, 850-644-4593, 1114

West Call Street, Tallahassee, FL 32306.

Abstract

Teachers commonly use behavioral logs as a primary methods for controlling classroom behavior, but frequently they are using these logs incorrectly (Tillery, Varjas, Meyers, & Collins, 2010). For this reason, this paper provides specific information on how to correctly use behavioral logs for techniques such as Check-in / Check-out, Behavioral Report Cards, and token economies. Each of these are described in terms of empirical support for their use and how they would be integrated into a Positive Behavioral and Intervention Support (PBS / PBIS; OSEP, 2009) model. In addition, the authors provide concrete examples for school-based practitioners to use when working with their own students.

Positive Behavioral Supports:
Empirically Supported Use of Behavioral Logs

Many schools have adopted multi-tiered systems of interventions, such as positive behavioral interventions and supports (PBIS or PBS). This framework provides social, emotional, and behavioral supports to children based on each child's level of need (OSEP, 2009). There are three tiers within the PBIS/PBS framework. Tier 1 (100%) has interventions targeted at all children; Tier 2 (15%) has interventions for those needing some additional support; and Tier 3 (5%) has interventions for those needing intensive support (Basham, Israel, Graden, Poth & Wintson, 2010). When used correctly, this framework has been found to be highly effective in improving children's social, emotional, and behavioral skills (OSEP, 2009). To ensure correct use of the PBS/PBIS system, practitioners need to follow specific guidelines: 1) use sound methods for collecting data, 2) use data to determine the necessary services, and 3) provide empirically-supported services (Krach & McCreery, 2016; Sugai & Horner, 2009). Any techniques used at any tier within the framework must meet these criteria.

In an evaluation of commonly used techniques, behavioral logs a top choice of intervention used by teachers to control classroom behavior (Tillery, Varjas, Meyers, & Collins, 2010). However, the manner in which teachers use behavioral logs often fails to meet the guidelines listed above (Krach, McCreery, & Rimel, in submission; Tillery et al., 2010). This failure to use behavioral logs correctly is most likely due to insufficient training (Tillery et al., 2010). Because many teachers struggle to use behavioral logs correctly, the purpose of this paper is to provide information on the correct use of behavioral logs within a PBS/PBIS framework. Specifically, the use of token economies, Behavioral Report Cards, and Check-in / Check-out will be discussed.

Token Economy

As originally described by Kazdin (1977) and updated by Doll, McLaughlin, & Barretto (2013), token economies are systems in which individuals can earn tokens (e.g., points, dollars, stars, etc.) contingent on their behavior; these tokens are later traded for something desirable to the child (e.g., free time, toys, candy, etc.). Token economies are one of the easiest forms of behavior management techniques to grasp at a basic level, but one of the most difficult to understand comprehensively. An analogy to describe why this is the case is that most individuals can understand how to use money (a token), but a comprehensive understanding of economic systems may be beyond them.

Tokens are given to a child for positive actions specifically decided upon ahead of time. Using money again as an example, parents might pay the neighbor \$20 for babysitting their child on Friday night. But, if the neighbor plays outside with the child on Saturday while the parents are home and asks to get paid \$30, they would not agree to give them that money, because the specifically defined expectations were based off of setting (Friday, inside the parents' house vs. Saturday, out in the yard), positive behavioral expectations (being solely responsible for a child versus only playing with the child), specifics (while they were gone vs. while they were home), and rate of exchange (amount of money). It is imperative that these four variables be established ahead of time for any token economy system to work well (Miltinberger, 2012). If not, then either the person providing the tokens or the one receiving them may become angry or lose faith in the system.

How-To: Token Economies. Teachers need to use these specifically defined parameters when setting up a token economy. If the teacher's goal is a quiet classroom, then they need to determine what positive behaviors lead to that state (e.g., students raising hands before

speaking). Next, they have to determine the setting for these expectations; for example, they may want a quiet classroom during instructional time but not during recess. Next, any specifics must be decided (e.g., can a child get out of their chair with teacher permission?). Finally, the teacher must set a rate of exchange, which can be different based on the positive behavior targeted. For example, a teacher may give one token for every time a child speaks after raising a hand, but three tokens for every five minutes that a child stays in the chair. These tokens need to be visible to the child ahead of time, as well as accurately weighted based upon the difficulty of the expectation (Miltinberger, 2012).

Response cost is also a part of a token economy system. In response-cost, a child would be expected to pay a token (or tokens) when they exhibit a negative behavior. For example, a child who yells in class instead of raising their hand may lose a token from their totals. But, just as with the other aspects of a token economy system, the parameters must be established ahead of time. These parameters include negative behaviors (which behaviors are trying to be extinguished), setting (when / where the unwanted behaviors will be punished), specifics (under what conditions will they be punished), and rate of exchange (how much will they be punished).

<Insert Figure 1 about here>

Figure 1 demonstrates a token economy with a response-cost system. Note, with a response cost in place, it is possible for a child who has had some positive experiences during the day to still have zero or negative points at the end of the day. This lack of daily success may mean that response costs should be used sparingly. Children who never experience success or never get their desired token will stop trying (Kazdin, 1982; Sran & Borrero, 2010). In addition, it is inappropriate to put a response cost in place without making the child aware of the expectations, and can cause angry outbursts (Doll et al., 2013; Phillips, Phillips, Fixsen, & Wolf, 1973). For

example, a child may become very angry if a point is removed because they were tapping their feet when this was not included as a behavior (negative or positive) within the established token economy system.

Token economy systems can be set up for an individual child (Tier 2 / Tier 3) or for an entire class (Tier 1). For a single child, the educator would determine the specific behaviors that need to be targeted. A benefit of working with an individual is that the intervention can be tailored to meet only that child's needs; the main weakness is that it is difficult to manage multiple different economies within a single classroom. To solve this problem, an entire class token economy, such as a level system, can be implemented (Filcheck, McNeil, Greco, & Bernard, 2004). In a level system, all children have the opportunity to earn the same number of tokens for equal work.

Analog and Digital Token Economies

Figure 1 illustrates the application of a token economy / response cost behavioral log for classroom usage. Following the requirements listed above, the behavioral log includes: clearly defined positive and negative behaviors, the setting, and an exchange rate (both positive and negative). The information is simple for consistent ease, but it also allows the child to track how many points that they have accumulated or lost throughout the day. Further, this allows the teacher to adapt the token economy to be used with a single child or an entire classroom.

An alternative to the paper-and-pencil version of a token economy is the popular computer-based token economy system called Class Dojo (<https://classdojo.com>), which has, according to their website, over 35 million users. Class Dojo is a classroom-wide system where children are either given “dojo points” for good behaviors, or have them taken away for negative behaviors. Research shows that Class Dojo is a very effective method for collecting data (Krach et al., in submission); however, as the computer program offers no reinforcements or punishments, it is up

to the teacher to provide the anchors for the dojo points.

Concerns with Token Economies

Kazdin (1982) as well as Doll and colleagues (2013) outlined several concerns with token economies, in particular describing issues with determining rate of exchange (either how much was paid or how much it cost to gain the reward). If the requirements are too easy to meet, then the individual becomes used to getting the reward and does not feel the need to work for it. If the requirements are too stringent, the individual never gets the reward, so they give up. In addition, the rewards cannot be so great as to be seen as coercion or bribery (e.g., a student gets an “A” for just sitting in the chair); that leads to legal problems. Plus, if the token economy system becomes too burdensome, teachers will just stop using it. Ironically, teachers will even stop using the system if it is working, as they believe it is no longer needed. However, discontinuing a working token economy system is a terrible idea. Think about it: if your boss stopped paying you, would you keep working?

In addition, token economy systems do not appear transferable (Kazdin, 1982) without very careful attention paid to slowly removing the rewards (DeFulio, Yankelevitz, Bullock, & Hackenberg, 2014). This means that if the teacher stops the system (or move the child to a new setting where the system is not in place), the positive behaviors do not continue unless the new setting or system maintains the rewards. This is because a token economy system is based off of extrinsic motivation (doing something for a reward), not intrinsic motivation (doing something because a person wants to). In fact, not only is the program not transferable (Kazdin, 1982), token economies can actually decrease intrinsic motivation (Morgan, 1984). Once a token economy is put in place, children who were already intrinsically motivated to perform a desired behavior may lose motivation to do so unless it continues to be rewarded (Morgan, 1984). For

example, if a woman were volunteering at an animal shelter, she probably does not expect any reward other than feeling good about what she is doing. However, if suddenly the shelter starts paying her (or starts paying everyone but her), she may no longer want to continue to do such work without payment. There are ways to help remove the extrinsic reward and still maintain the desired positive behavior. One method, fading (where the person in charge of giving the rewards slowly decrease the amount of reward over time) has been shown to be effective (Hoch, McComas, Thompson, & Paone, 2002). However, fading is a technique that should be researched thoroughly before used, as all decisions regarding fading should be data driven. Another method, matching the token with an already existing intrinsically motivating behavior has also shown to result in a sustainable increase for both behaviors (Carnett et al., 2014).

Finally, teachers need to be aware that it is a violation of federal law to post any behavioral logs up in a public space. Specifically, the Family Education Rights Protection Act (FERPA, 1974) protects the confidentiality of educational information, which prohibits it from being publically distributed or posted. If a teacher wants to provide a copy of the data from Figures 1-4 to a parent, then first they must remove any identifying information of other children in the classroom. This means that each individual student would require his or her own personalized form. Of course, this form can never be posted publicly for any reason. If the teacher wants to post the entire class' data on the board, this would never be appropriate when individual children's names are included. The FERPA issue is a known problem with Class Dojo (Singer, 2014). Teachers often use this program on an electronic white-board, and when they do this they are posting identifiable data on all of their students in a public manner.

Historically, research has supported the use of token economy systems when implemented correctly (Kazdin, 1982; Doll et al., 2013). There has been resurgence of late in the debate over

the use of token economies, with some researchers endorsing their use (Doll, et al. 2013), and others arguing that research supporting their use has been flawed and inconclusive (Maggin, Chafouleas, Goddard, & Johnson, 2011). It appears that a token economy system can fit as an empirically based intervention within a PBS/PBIS framework, but it must be implemented correctly and consistently with no deviations. The best way to do this is to ensure that teachers have been trained on all of the information provided here.

Behavioral Report Cards

Token economies are one popular method of using behavioral logs for intervention purposes, but they are not the only technique. Behavioral Report Cards (BRCs) provide another use for behavior logs. Like the token economy system, BRCs provide feedback to the student; however, this technique additionally provides feedback to parents as well (Cox, 2005). Because of this, more information needs to be provided within the document. Thus, although BRCs emphasize the behavior of interest (positive and/or negative), they also provide some sort of rating for this behavior, as well as describe how the behavior does or does not meet classroom expectations (Chafouleas, Riley-Tillman, & McDougal, 2002; LaBel, Chafouleas, Britner, & Simonsen, 2013). Because this is a home/school communication device, there should also be space made available for parents to sign and provide their own feedback or concerns. Figure 2 provides an example of a BRC with all of these subcomponents.

<Insert Figure 2 about here>

How to: Behavioral Report Cards. As with a token economy system, BRCs should be used to meet obtainable goals. In Figure 2, Carl's goal is to be quieter in class. This goal needs to be further broken down into the specifics of what that entails. For a BRC, these specifics can be either positive expectations or negative behaviors. In the Figure 2 example, positive expectations

would include Carl raising his hand before talking; however, negative behaviors might include getting out of his seat. How the child meets these positive expectations (or demonstrates these negative behaviors) is quantified into scores (e.g., ratings of intensity, number of occurrences, length of time etc.). These scores can be used to monitor improvement over time. And, as was true with token economies, BRCs allow an opportunity (based on these scores) to either reward or punish children based on their performance.

Unlike token economies, BRC data should be placed within context. Specifically, BRCs should emphasize the appropriateness of the child's actions within a given environment (e.g., it is fine to be loud during P.E.). It is also imperative that teachers communicate how unusual the child's behavior was when compared to their classmates. For example, Carl (Figure 2) might have an intensity rating of "2" on "yelling in class," but this may have "met expectations" if the morning lesson was on rhythm and rhyme.

In addition to a numerical rating (how much the child does or does not meet expectations), the teachers should provide a narrative to place the behavior in context. This information is needed for BRCs, because any rewards provided (or removed) are not strictly controlled by the teacher, unlike in token economies. Rather, BRC data can also be used by parents to provide home-based discipline to supplement those at school (Chafouleas et al., 2002; LaBel et al., 2013). This home-based discipline is a necessary component of the BRC process and, as research shows, can be very effective in changing school-based behaviors (LaBel et al., 2013). Given the home-based component to BRCs, they must be sent home in a timely manner to ensure that a child's punishments and rewards are distributed around the same time as the targeted behaviors. Usually, this means BRCs should be sent home on a daily basis (Tillery et al., 2010).

Perhaps obviously, it is also of utmost importance that parents actually receive the BRC. When provided in a paper format, children may lose the BRC before they get home, or may even choose to throw the paper away (Schumaker, Hovell, & Sherman, 1977). Email may be a better delivery system than a paper form if the intent is to ensure that parents receive the BRC, but the family must have internet access (Collins & Halverson, 2010). Another way to be sure that parents are receiving the BRC is to require that they sign the document and return it to the teacher. By allowing parents to also provide additional comments to the BRC, an avenue is provided for home/school communication to take place.

Concerns with Behavior Report Cards

Given that creating BRCs can consume a substantial amount of time every day, this behavioral logging technique should not be considered a top choice for a Tier 1 intervention. LaBel and colleagues (2013) suggest that BRCs should instead be used as a Tier 2 intervention for smaller groups of students. Chafouleas and colleagues (2006) found that most teachers (86%) using BRCs do so as a Tier 3 intervention instead of Tier 1 or Tier 2. Regardless of which tier is chosen for its use, BRCs have been found to be effective methods of behavioral change (LaBel et al., 2013) when used correctly.

Check-in / Check-out (CICO)

The Check-in / Check-out (CICO) method of using behavioral log data combines the report card with direct adult attention and feedback (Todd, Campbell, Meyer, & Horner, 2008). When used correctly, studies have found that CICO decreases the number of office referrals given (Hawken & Hess, 2006), as well as the overall number of problem behaviors (Todd et al., 2008). To begin, the CICO report card should include daily goals for the child, provide structured prompts, offer several opportunities for direct adult feedback throughout the day, and

be used as a form of home-school communication (Todd et al., 2008). The child checks in (individually) with an adult at the school every morning to determine their daily goals, and checks out (individually) with an adult before leaving school to determine how well these goals have been met. In between, school faculty and staff document behavior toward daily goals on the CICO report card. See Figure 3 for an example of a CICO report card.

How-to: Check-in / Check-out (CICO). CICO combines many aspects of both token economies and BRCs. As in token economies, a CICO intervention provides the child with tangible rewards based on their performance (McIntosh, Campbell, Carter, & Dickey, 2009). Like BRCs, CICO goals are set, scores are provided, and information is shared back and forth between parents and teachers. Where CICO differs mainly is in its use of direct and frequent interactions between the child and adults. It is only in CICO that children are scheduled to meet twice daily with an adult to set and evaluate their goals. CICO also differs from a token economy system in that there is no response-cost option. Finally, CICO differs from BRCs in the goals of the parent-teacher communication. With CICO, punishments and rewards are handled only at school; home-based punishments (or rewards) are not built into the system. If the parents choose on their own to provide home-based punishments (or rewards) based on information in the CICO report card, it is considered to be uncontrollable by the teacher implementing the program.

<Insert Figure 3 about here>

In addition to the traditional paper-and-pencil version of CICO (see Figure 3 for example), there is a digital version called CICO-SWIS (PBIS Assessments; www.pbisapps.org). In the digital version, a computer form replaces the paper version of the CICO report card. Although research supports the paper-and-pencil CICO methods (Hawken & Hess, 2006; Todd et al., 2008), there is currently no research specifically supporting the digital form. Given that

one reason why the program works is one-on-one adult attention (Campbell & Anderson, 2011), using a computer interface instead may negate the benefits of the technique. Therefore, it is important that adult attention be sustained to ensure that the CICO technique maintain its empirical support for use. CICO is a strictly individualized system that depends as much on rewards / punishments as it does on personal communications (Campbell & Anderson, 2011). As such, CICO would be best as part of a Tier 2 or Tier 3 intervention (Carter, Carter, Johnson, & Pool, 2013). It would take up entirely too much teacher time at the Tier 1 level to be efficient, no matter how effective it is.

Problems with Behavioral Logs

As has been demonstrated, behavioral logs can clearly be used as interventions as part of a PBS / PBIS framework. However, it is imperative to remember that any PBS / PBIS must also be research-based. When school-based practitioners use behavioral logging techniques in ways that differ from those described here, the techniques can no longer be considered empirically supported. Therefore, they should not be used within a PBS / PBIS framework. Unfortunately, research shows that many teachers use behavioral logs incorrectly. Krach and colleagues (in submission) found that the paper-and-pencil behavioral logs used by teachers mostly document only negative behaviors. Specifically, the average number of positive notations made in paper-and-pencil logs was one per student; the average number of negative notations was 12.56 per student.

So why don't teachers use behavioral logs correctly? The primary reason may be insufficient training (Tillery et al., 2010) or support (Voorhees, Walker, Snell, & Smith, 2013). Any behavioral-log training provided to teachers absolutely must decrease any ambiguity about how these systems should work (Irish-Zelener, 2000). Training needs to be clear and provide

concrete examples for use. That is why the provision of examples and specific pros and cons of each technique must be provided by any consultants working with teachers on setting up a behavioral-log-based intervention program. Hopefully, some of the information in this paper will be useful for this purpose.

In addition to training, many teachers (46% - 56% of teachers) state that they desire more implementation support to ensure intervention success (McGoey et al., 2014). The nature of this support is important. Good support should come as directed feedback, intervention coaching, and / or guided practice (Voorhees et al., 2013) until teachers feel confident to use the interventions on their own. However, lack of training or support are not the only reasons that teachers fail to use behavioral logs correctly. Often, teachers' perceptions of the intervention influence their use of the program. Sugai and Horner (2006) laid out what teachers need for any intervention to be successful in both implementation and continued use. They describe that teachers need interventions to be effective (they see improvement), efficient (i.e., do not take too much time or money), relevant (fit within their classroom environment), and durable (sustainable over time). If they do not view the worth of an intervention, they will not follow through with the tasks needed to sustain it.

Efficiency and perceived effectiveness may also account for a significant proportion of reasons why teachers fail to use behavioral logs correctly. Teachers describe paperwork (including behavioral logs) as a significant barrier to teaching their children because it takes up too much of their time each day (Ingvarson et al., 2005). Therefore, maintaining comprehensive logs may not seem worth it unless their students' demonstrate high levels of success. In addition, teachers may view programs that involve a tougher approach (not rewards-based) as more effective, so they may consider behavioral logs to be irrelevant in their classrooms (Skiba &

Peterson, 2000). If this is the case, they do not even begin using them (or start and end very quickly). Even for teachers who say that they prefer the positive interventions provided by behavioral logs, they often switch to harsher ones when faced with a challenging student (Martin & Pear, 1996; McGoey & DuPaul, 2000). Therefore, teachers may start with a positive approach, such as providing reward-based tokens, but very quickly move to more punitive approaches (such as response-cost). These more punitive techniques have found little success; instead, the literature supports a reward-based system instead of a punitive one for long-term behavioral change (McCord, 1995; McGoey & DuPaul, 2000).

Finally, there are concerns about intervention durability when using behavioral logs. Teachers may start down a path of using behavioral logs correctly, but either stop or begin inconsistently using the program (Scott, Alter, Rosenberg, & Borgmeier, 2010). The best way to maintain consistency using behavioral logs is to make sure that the users choose the simplest technique that they can. In addition, users should communicate successes (and failures) with other stakeholders (e.g., student, parents, other teachers who work with that child) to keep them motivated and clarify their goals.

Conclusion

As has been discussed in this paper, behavioral logs can be used in each of the three tiers within a PBS / PBIS framework. Behavioral logs used in a token economy work for either an entire class (Tier 1) or for individuals needing more support (Tier 2). Behavioral logs used in either a Behavioral Report Cards (BRCs) and Check-in / Check-out (CICO) can both be used at the Tier 2 and Tier 3 levels.

However, despite the effectiveness of behavioral logs as a tool, data are only as good as the practices and assistance in place. To ensure correct use, teachers need to follow the proper

guidelines. Therefore, they may need support from school-based practitioners (e.g., school counselors, psychologists, behavioral specialists, etc.) and administrators. This support starts with evaluating the need for support / guidance. It continues by helping train teachers on the research-based methods of using behavioral logs. It may continue through the use of collaboration or modeling to ensure that teachers have both the skills and knowledge to do this correctly. And, finally, school practitioners need to check-in with teachers to ensure that all interventions are done with fidelity and consistency.

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Figure 1

Token Economy

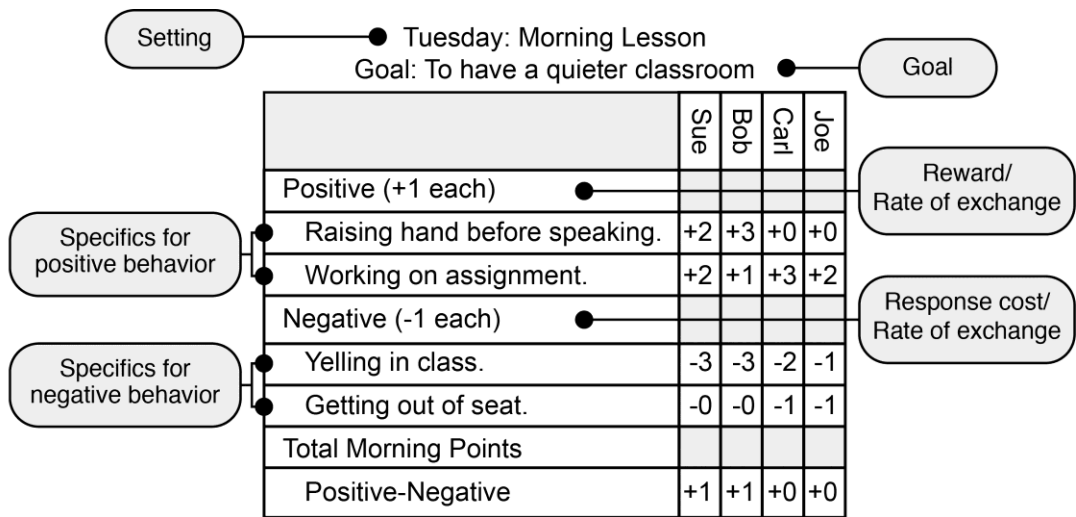


Figure 2

Behavioral Report Cards

Name: Carl Day: Monday ●		Reports are generated every day									
Goal: To be quieter in the classroom.											
Positive expectations	Positive	<table border="1"> <thead> <tr> <th colspan="2">Morning</th> </tr> <tr> <th>Intensity</th> <th>Met Expectations?</th> </tr> </thead> <tbody> <tr> <td>Raise hand before speaking. 0 1 2</td> <td>Yes / No</td> </tr> <tr> <td>Work on assignment. 0 1 2 ●</td> <td>Yes / No</td> </tr> </tbody> </table>	Morning		Intensity	Met Expectations?	Raise hand before speaking. 0 1 2	Yes / No	Work on assignment. 0 1 2 ●	Yes / No	Is this unusual compared to others?
	Morning										
Intensity	Met Expectations?										
Raise hand before speaking. 0 1 2	Yes / No										
Work on assignment. 0 1 2 ●	Yes / No										
Negative behaviors	Negative	<table border="1"> <thead> <tr> <th colspan="2">Morning</th> </tr> <tr> <th>Intensity</th> <th>Met Expectations?</th> </tr> </thead> <tbody> <tr> <td>Yelling in class. 0 1 2</td> <td>Yes / No</td> </tr> <tr> <td>Getting out of seat. 0 1 2</td> <td>Yes / No</td> </tr> </tbody> </table>	Morning		Intensity	Met Expectations?	Yelling in class. 0 1 2	Yes / No	Getting out of seat. 0 1 2	Yes / No	Rating of behavior
	Morning										
Intensity	Met Expectations?										
Yelling in class. 0 1 2	Yes / No										
Getting out of seat. 0 1 2	Yes / No										
Narrative Carl has improved about raising his hand; however, he continues to struggle with staying in his seat. He gets out of his seat when bored. We should discuss how to redirect his energy.		Narrative provides specifics to parents									
Parent Comments											
Home/school collaboration	Parent Signature										

Ratings: 0 = did not do; 1 = did sometimes; 2 = did every time.

Figure 3

Check-in / Check-Out (CICO)

Child has a new CICO each day

Name: Rosa Day: Monday Goal: To be quieter in the classroom.				General Goal
Check-In: 8:30 with Teacher. Raising hand before speaking. Working on assignment.	Review expectation and how points are given. Review? [] Yes [] No Review? [] Yes [] No			Specifics described for what gets points
Teacher Feedback (During Day) Raising hand before speaking. Working on assignment.	Language Arts Rating 0 1 2 Rating 0 1 2	Math Rating 0 1 2 Rating 0 1 2	Lunch Rating 0 1 2 Rating 0 1 2	Written feedback provides guidance on how to improve behavior
Notes: Describe problems & reason for problems (if known)	Comment ●	Comment ●	Comment ●	Written feedback provides guidance on how to improve behavior
Check-Out: 2:30 with Teacher. Raising hand before speaking. Working on assignment.	Review expectation and how points are given. Review? [] Yes [] No Review? [] Yes [] No			Parental signature is optional
Parent Signature				Parental signature is optional

Ratings: 0 = did not do; 1 = did sometimes; 2 = did every time.