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Using Check-In/Check-Out in Vocational Training for Young Adults With Intellectual Disability

Olivia R. Hester, PhD[1], and Nicole C. Swoszowski, PhD[1]

Abstract

Few transition studies have involved training supervisors on interacting and relaying feedback to individuals with intellectual disability during vocational training. We used a multiple baseline across participants design to examine the efficacy of an adaptive check-in/check-out (CICO) intervention for increasing the rate of performance feedback statements given by a supervisor to an intern with an intellectual disability during vocational training. The CICO intervention was effective at increasing the rate of performance feedback statements given by each supervisor. We recommend research and practice focused on training supervisors to use the CICO intervention to assist in helping foster natural job supports.

Keywords

vocational training, intellectual disability, check-in/check-out, performance feedback, single case

Young adults with intellectual disability (ID) have the lowest rate of competitive employment after high school compared with all other disability groups (Papay & Bambara, 2014). According to Winsor et al. (2018), the unemployment rate of people with ID is more than 70%; nearly twice the rate of same-age peers without disabilities (35%). The significant difference in employment rates has spurred research focused on identifying evidence-based practices to assist youth with ID in securing competitive employment (Gilson et al., 2017; Grigal et al., 2011). However, this research focuses almost exclusively on changing the behavior of the individual with a disability (e.g., social skills, behavior interventions) instead of viewing the workplace through an ecological lens to examine the practices or perspectives of coworkers and supervisors (Akkerman et al., 2016; Amado et al., 2013; Ellenkamp et al., 2016; Hedley et al., 2017).

Supervisors are the main source of feedback for employees with and without disabilities (Andiola, 2014). Studies indicate that supervisors who provide frequent feedback have the ability to change, guide, motivate, and reinforce appropriate work behaviors of employees (Guo et al., 2017; Holderness et al., 2017; Kuvaas et al., 2017). In the business world, feedback from supervisors to employees on their work is referred to as performance feedback. Performance feedback often makes comparisons between a standard benchmark and an individual's work performance (Holderness et al., 2017). Previous studies demonstrate that performance feedback from a supervisor has the power to motivate, improve job performance, and promote job satisfaction among employees with disabilities (Akkerman et al., 2016). Furthermore, performance feedback helps an employee set work-related goals and monitor their progress toward achieving those goals (Holderness et al., 2017).

Performance feedback may be even more vital to the success of employees with ID who may have difficulty picking up on the social cues of the work environment. In addition, individuals with ID often need to receive explicit instruction on their performance and guidance on how to improve (Simonsen et al., 2015). Interventions focused on improving communication between supervisors and individuals with ID could help with (a) forming natural supports, (b) building a working relationship, and (c) providing feedback to improve job performance. Boden et al. (2018) suggested the use of the check-in/check-out (CICO) intervention as a strategy to assist supervisors in establishing these relationships and giving constructive feedback to an employee with a disability.

CICO is an evidence-based practice shown to improve the academic and behavior performance of students in

[1]The University of Alabama, Tuscaloosa, USA

Corresponding Authors:
Olivia R. Hester, Department of Special Education and Multiple Abilities, The University of Alabama, Box 870232, Tuscaloosa, AL 35487-0231, USA.
Email: orhester@gmail.com

Nicole C. Swoszowski, Department of Special Education and Multiple Abilities, The University of Alabama, Tuscaloosa, AL 35487-0231, USA.
Email: nswoz@ua.edu

school settings (Drevon et al., 2018; Hawken et al., 2014; Wolfe et al., 2016). Grounded in the core principles of positive behavioral interventions and supports (PBIS) and applied behavior analysis, CICO is composed of five steps: (a) check-in with a facilitator, (b) use of a goal sheet to monitor behavior, (c) check-out with a facilitator, (d) send goal sheet home for a parent or guardian to sign, and (e) return signed form the next day to the facilitator (Swoszowski et al., 2013). A facilitator (also referred to as a *mentor*) is someone who supports the student by checking-in and -out with the student (Swoszowski et al., 2011). CICO increases opportunities for positive interactions and structured times for frequent feedback between an individual and their facilitator (Wolfe et al., 2016).

A core CICO component involves using a daily progress report card, which is referred to as a *goal-or behavior-monitoring sheet*. Using the daily progress report card during check-in, the student and the facilitator typically set the goals and expectations together based on what the student needs to work on. During check-out, the facilitator and the student review the sheet by going over how the student performed that day. The sheet is then sent home for a parent or guardian to review, sign, and return (Crone et al., 2010).

CICO is a Tier II positive behavior interventions and supports (PBIS) intervention focused on a group of students or an individual student demonstrating at-risk behaviors and who is not responding to school-wide behavior expectations (Swoszowski et al., 2013). Numerous studies show that CICO is effective at reducing problem behavior(s) of students. However, few studies have examined the effects of CICO on youth with ID. Instead, most studies have focused on nondisabled elementary school students (e.g., Mitchell et al., 2017; Wolfe et al., 2016). Only three studies have examined the effects of CICO on high school–age students (Boden at al., 2018; Ennis et al., 2012; Swoszowski et al., 2012) and only Boden et al. (2018) focused on students with moderate ID.

Boden et al. (2018) is the only study that analyzed the use of a modified version of CICO in vocational training. They used check-in, check-up, check-out (CICUCO) to increase on-task behaviors during vocational training for three high-school students with ID. The facilitators of CICUCO were paraprofessionals who used a daily progress report to increase the on-task behavior of students during employment training in the high school. Results indicated that CICUCO was effective in decreasing off-task behavior. The researchers recommended that future studies examine the use of the intervention in authentic employment settings in the community with the on-site supervisor serving as the facilitator.

The purpose of this study was to determine the efficacy of an adapted CICO intervention on the rate of performance feedback statements from a supervisor to an intern with ID in an integrated employment setting. The study was designed to use the CICO intervention during vocational training to assist a supervisor in giving feedback to an intern on their work performance and to help establish a working relationship between the supervisor and an intern with ID. As suggested by Boden et al. (2018), the on-site supervisor served as the CICO facilitator who (a) assisted the intern with ID in goal setting and (b) provided frequent and meaningful performance feedback. The home component in this study involved the transition teacher within the program. The study required the intern with ID to follow the traditional steps of CICO: (a) checking-in with their supervisor, (b) using a goal monitoring sheet, (c) checking-out with their supervisor, (d) showing the goal monitoring sheet to the transition teacher, and (e) returning the form the next day to the supervisor. The purpose of this study was to address the following research questions:

Research Question 1 (RQ1): Does the use of the CICO procedure at the beginning and end of a work shift increase the rate of the supervisor's performance feedback statements to an intern with ID?
Research Question 2 (RQ2): What is the social validity of the CICO intervention according to key stakeholders, including the (a) vocational training supervisors, (b) transition teacher, and (c) students?
Research Question 3 (RQ3): What do supervisors identify as challenges in communicating feedback and how do those challenges change after the use of the CICO intervention?

Method

We used a multiple baselines across participants design to determine if a functional relation existed between the CICO intervention and the rate of performance feedback statements given by a supervisor to an intern with a disability. Prior to the start of the study, the Institutional Review Board granted approval.

Participants and Setting

Participants were three supervisors whose place of employment served as a vocational training site for young adults with ID on a university campus. Each supervisor was affiliated with the university, but they worked at different locations on campus and held various positions. The three settings used for the study were (a) a departmental office, (b) a therapy center, and (c) a museum. Although these settings are different, the expectations of the interns with ID and supervisors in each setting were similar. The interns with disabilities were all working on similar job skills at their sites such as (a) making appropriate eye contact, (b) asking for help when needed, (c) staying on-task, and (d) reviewing their work. Each intern also spent the same amount of time per week in the employment setting with the supervisor.

Table 1. Demographics of Participants.

Name	Gender	Age	Race/ ethnicity	Highest degree earned	Occupation	Years at current job	Years serving as an employment site
Shannon	Female	42	White	BA	Office associate	3	2
Mary	Female	27	White	AA	Program assistant	1.5	1
Kristen	Female	32	White	MA	Education outreach coordinator	7	2

Note. BA = Bachelors' Degree; AA = Associate's Degree; MA = Master's Degree.

Table 2. Demographics of Interns.

Gender	Age	Race/ethnicity	Disability diagnosis	Year in the transition program	Supervisor and location
Female	19	Black	Intellectual disability	1	Shannon at a departmental office
Female	20	White	Autism spectrum disorder	2	Mary at the therapy office
Female	18	Black	Intellectual disability	1	Kristen at the museum

Likewise, all three employment settings involved similar tasks such as (a) organizing office materials, (b) working on the computer, and (c) preparing materials and displays for upcoming events.

Shannon, Mary, and Kristen were supervisors who met the following inclusion criteria: (a) they agreed to provide a vocational training site for 18- to 21-year-olds with moderate to severe ID, (b) the site was chosen by the intern with ID, (c) they were observed to need assistance with communicating and providing feedback to the interns, and (d) they were responsible for training new employees at their business. Demographic information is displayed in Table 1. Consent was obtained prior to collecting baseline.

Student participants were the interns with ID receiving vocational training at one of the three sites. The interns were young adults with moderate to severe ID between the ages of 18 and 21 years who attended a 3-year transition program focused on providing work experience in integrated settings. The interns typically spent each semester in an internship site of their choosing and attended work 3 days a week for about 3 hr a day. We obtained consent and assent from each intern with ID and their parent/guardian prior to data collection. Table 2 displays their demographic information.

Job coaches were also present during the work shift, as were staff from the transition program. The same job coach went to work with the same intern with ID each time. Job coaches were assigned an employment site by the program staff. Each coach was trained on the study procedures and was responsible for audio recording the CICO sessions and prompting the intern with ID to go CICO with their supervisor at the beginning and end of the work shift. To stay consistent with the five steps of CICO, job coaches also provided a verbal reminder halfway through the work shift for the intern with ID to use the CICO sheet. The job coaches also initialed the CICO goal sheet to indicate that they had provided the verbal reminder.

Dependent Variable and Data Collection

The dependent variable was the rate of performance feedback statements given by the supervisor to an intern with a disability during CICO sessions. We defined performance feedback as a statement given by an employer praising or providing constructive feedback that explicitly identifies a work behavior of the intern (Holderness et al., 2017). A session referred to both the check-in and check-out procedures during a single work shift. We used rate to measure performance feedback, defined as the number of performance feedback statements divided by the duration of the CICO session. Duration was rounded to the nearest minute or 30 s. For example, if a supervisor made four performance feedback statements during a 2-min CICO session, the rate was two performance feedback statements per minute. Job coaches recorded each session using an iPad with the Voice Memo app (Apple, 2019). To measure rate, the researcher listened to the audio recording and noted the duration of each session, the frequency of performance feedback statements, and the timestamp of each statement.

Design and Intervention

We made decisions for condition changes based on visual analysis of data. We used line graphs to plot the rate of performance feedback statements during each CICO session and to assess trend and condition changes for participants. We required a minimum of three consecutive CICO sessions in each condition to determine level stability and data trend. Conditions changed only when the data displayed stability in level and trend (i.e., a minimum of three consecutive trends in the right direction; Gast & Ledford, 2014). To

account for within conditions, the average rate of performance feedback statements for each participant during baseline decided his or her criterion level during intervention. Criterion levels were twice the average of their performance during baseline. Baseline results ranged from 0 to .33 across participants. All participants were unaware of the criterion leveling. Due to time constraints, maintenance was 2 weeks following intervention completion.

To establish experimental control, CICO was systematically introduced across participants in a time-lagged manner. Staggering the intervention helped control for confounding variables. To establish internal validity, data would show abrupt and immediate change when the intervention was introduced in each tier (Gast & Ledford, 2014).

Baseline. After gaining consent and assent, all of the participants started baseline during the same work session. At the beginning of the work shift, the job coach instructed the intern with ID, "Go check-in with your supervisor." Without giving the supervisor or intern any additional instructions, the job coach audio recorded their interaction. At the end of the work shift, the job coach instructed the intern, "Go check-out with your supervisor."

Training. The first author trained each supervisor one-on-one prior to implementing the intervention. Using a training guide, supervisors learned how to use the CICO goal sheet (see Figure 1) and were provided a rationale for why performance feedback is important when training individuals with ID for employment. Training for supervisors involved (a) providing a rationale for providing feedback and using CICO, (b) discussing the steps to CICO, (c) reviewing the goal sheet, (d) modeling completion of the goal sheet for both checking-in and checking-out, (e) providing examples of specific praise feedback, (f) providing constructive feedback, (g) role-playing how to complete the CICO goal sheet, and (h) addressing any questions or concerns of the supervisor.

CICO intervention. The standard five components of CICO were preserved during intervention (Swoszowski et al., 2013). The intern with ID received the same prompting from CICO with their supervisor. Prior to the start of the work shift, the intern was required to check-in using a clipboard with the CICO goal sheet. The supervisor then went over the CICO goal sheet and discussed the tasks the intern needed to complete for their work shift. During the work shift, the job coach provided additional instruction on how the intern was performing and assisted if the intern needed help. Consistent with the five steps of CICO, halfway through the work shift, the job coach initialed the CICO goal sheet and reminded the intern with ID to use the goal sheet to guide their task completion. The intern with ID received the same prompting from the job coach to CICO with their supervisor. The intern finds their supervisor and handed them their clipboard with the CICO goal sheet. During check-out, the supervisor reviewed how the intern performed on the tasks and discussed his or her overall performance. The supervisor and the intern also decided on one overall goal for the next work shift. Finally, the intern took the form back to their transition teacher to review, sign, and return.

Maintenance and social validity. We collected maintenance data for each participant 2 weeks following the end of the intervention phase. Fading was not implemented because the CICO intervention is a reasonable accommodation that can be applied with little effort by businesses and supervisors. In addition, we assessed social validity 1 week following the conclusion of maintenance for each participant. An online social validity questionnaire (adapted from Crone et al. [2010]) measured the satisfaction with CICO for each supervisor, each intern with a disability, and the transition teacher. The questionnaires for the transition teacher and supervisors included a nine-item Likert-type scale. The questionnaire for interns also included nine items utilizing agree and disagree ratings (see Tables 3–5).

Open-ended questions regarding challenges in communicating feedback. Prior to implementing the CICO intervention, supervisors answered two questions on the demographic survey: What challenges might there be in communicating feedback to an employee with a disability? What are some ways you approach these challenges of communicating feedback to an employee with a disability? The supervisors addressed the same questions after the CICO intervention as part of the social validity survey.

Data Analysis

Visual analysis of data was conducted. This included calculating means and ranges for each participant across all phases.

Interobserver agreement. Before data collection, the first author trained the second observer on the data procedures. Using a training guide, the first author trained the second observer on: (a) appropriate data storage, (b) the definition of performance feedback statements, (c) examples of the types of statements, (d) the use of an observation sheet, and (e) completing the fidelity of implementation checklist. The first author and second observer also practiced by listening to pre-recorded demonstrations of CICO sessions while independently recording the rate of performance feedback statements and completing the fidelity checklist. The researcher and second observer had to reach an IOA of 85% or above for three consecutive trials before the conclusion of training (Gast & Ledford, 2014).

Interns Name: _____ Date: _____

Check-In:

Today's Task(s):

☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐

Check-Out:

Exceeding: | *Needs Improving:*

Tomorrow's Overall Goal:

_____
_____
_____

Signature of Supervisor: _____ Date: _____

Signature of Intern: _____ Date: _____

Signature of Teacher: _____ Date: _____

Figure 1. Check-in/check-out goal sheet.

The second observer independently and concurrently collected IOA for 36% (range = 35%–38%) of the data across participants and conditions. We calculated IOA using event recording with exact agreement (Gast & Ledford, 2014). The first author and the second observer both listened independently to the same audio recordings of the CICO sessions and recorded the duration of the session, frequency of performance feedback statements, and the time stamp that each statement was made. A timestamp of the audio recording determined that the two researchers agreed on the exact statement. When comparing timestamps, we used an interval of 10 s. We used point-by-point agreement to calculate IOA by dividing agreements by the total number of agreements plus disagreements and

Table 3. Social Validity Results From the Supervisors.

Questions	Shannon	Mary	Kristen
The CICO intervention was worth the time and effort.	Strongly agree	Strongly agree	Strongly agree
The one-on-one training was helpful in discussing disability and ways to help support vocational training for young adults with disabilities.	Strongly agree	Strongly agree	Strongly agree
The CICO goal sheet was easy to complete.	Strongly agree	Strongly agree	Strongly agree
The CICO goal sheet served as a guide for giving the individual with a disability feedback.	Strongly agree	Strongly agree	Somewhat agree
I feel more comfortable talking to the individual with a disability following the intervention.	Strongly agree	Somewhat agree	Somewhat agree
I feel more comfortable giving feedback (both positive and negative) to the individual with a disability following intervention.	Strongly agree	Strongly agree	Strongly agree
I saw the benefit of meeting with the individual with a disability before and after work.	Strongly agree	Strongly agree	Strongly agree
The performance of the individual with a disability improved following the intervention.	Somewhat agree	Somewhat agree	Strongly agree
If I had the opportunity, I would participate in the CICO intervention again.	Strongly agree	Strongly agree	Strongly agree

Note. CICO = check-in/check-out.

Table 4. Social Validity Results From Interns With Intellectual Disability.

Questions	Intern 1	Intern 2	Intern 3
The CICO intervention was worth the time and effort.	Agree	Agree	Agree
The CICO goal sheet was helpful to follow my progress in my job.	Agree	Agree	Agree
The CICO goal sheet was easy to complete.	Agree	Agree	Agree
I liked receiving feedback from my supervisor every day.	Agree	Agree	Agree
I feel more comfortable talking to my supervisor following the intervention.	Agree	Agree	Agree
Following the intervention, I feel more comfortable asking my supervisor for help or if I have a question.	Agree	Agree	Agree
I improved my work performance by meeting with my supervisor before and after work.	Agree	Agree	Agree
My performance improved following the intervention.	Agree	Agree	Agree
If I had the opportunity, I would participate in the CICO intervention again.	Agree	Agree	Agree

Note. CICO = check-in/check-out.

multiplying by 100% (Gast & Ledford, 2014). The average agreement across all participants for IOA was 94% (range = 86–100%). Across all phases, the mean IOA for Shannon was 91% (range = 86–100%), Mary was 95% (range = 87–100%), and Kristen's was 95% (range = 87–100%).

Procedural fidelity. We used a fidelity checklist adapted by Swoszowski (2010) to assess the accuracy of implementation across all participants and conditions. We calculated fidelity by dividing the total number of observed steps by the total number of expected steps and multiplying by 100% calculated fidelity (Gast & Ledford, 2014). We collected procedural fidelity for 36% (range = 35–38%) of the sessions across participants and conditions including baseline, training, intervention, maintenance, and the completeness of the CICO goal sheet.

The mean procedural fidelity across participants and conditions was 96% (range = 88–100%). The mean procedural fidelity for each participant was as follows: Shannon was 97% (range = 94–100%); Mary was 96% (range = 88–100%); and Kristen was 95% (range = 88–100%). The fidelity of CICO trainings across the three participants was 100%. On average, the CICO goal sheet was completed in its entirety for 86% of fidelity checks while the home component (i.e., the transition teacher) was 100% across all participants.

Table 5. Social Validity Results From Transition Teacher.

Questions	Transition teacher
The CICO intervention was worth the time and effort.	Somewhat agree
The CICO goal sheet was helpful to keep up-to-date on the performance of each individual with a disability.	Strongly agree
The CICO goal sheet was easy to complete.	Strongly agree
The CICO goal sheet served as a guide for giving the individual with a disability feedback.	Somewhat agree
The intervention helped me (the teacher) provide feedback to the individual with a disability about how they can improve their performance.	Strongly agree
Following the intervention, I feel more informed on what the individual with a disability is doing at work and areas they are exceeding as well as things they still need to work on.	Strongly agree
I saw the benefit of meeting with an individual with a disability after work.	Strongly agree
The performance of the individual with a disability improved following the intervention.	Somewhat agree
If I had the opportunity, I would participate in the CICO intervention again.	Strongly agree

Note. CICO = check-in/check-out.

Results

Figure 2 displays the results across the supervisors. During the baseline condition, supervisors gave a mean rate of .2 performance feedback statements (range = 0–3) per minute. All three supervisors improved their rate of feedback statements immediately following the introduction to CICO. During the intervention condition, the supervisors' mean rate was 5.0 performance feedback statements (range = 3.3–6.8) per minute during CICO sessions. Maintenance data indicated that all of the supervisors continued to provide performance feedback statements 2 weeks after the intervention was introduced.

Shannon

Shannon did not provide any performance feedback statements. Shannon was the first participant to receive CICO training during baseline sessions. After the introduction of CICO, Shannon's rate of performance feedback statements immediately increased. Shannon gave a mean rate of 4.6 performance feedback statements (range = 3.3–5.9) per minute during the intervention. She reached the pre-established criterion level after three sessions. During maintenance, the mean rate was 4.7 performance feedback statements (range = 4–5.4).

Mary

Mary's mean rate of performance feedback statements during baseline sessions was 0.2 (range = 0–1). During the third session, Mary gave one performance feedback statement to her intern with ID. After receiving CICO training, Mary's performance immediately improved to mean rate of performance feedback statements of 4.5 (range = 3.5–6) per minute. She also reached the pre-established criterion leveling after three sessions. Although Mary was showing a positive trend during Sessions 13–15, she moved into maintenance due to time constraints. During maintenance, Mary's performance improved to 5.5 statements per minute (range = 5–6.3).

Kristen

Kristen's mean rate of performance feedback comments during baseline sessions was 0.3 (range = 0–3) per minute. During Session 5, Kristen gave her intern with ID 3 performance feedback statements. Kristen's mean rate of performance feedback increased to 5.8 statements (range = 4.7–6.8) per minute during the intervention. She reached the pre-established criterion leveling after three sessions. Kristen was only available for one data point during maintenance (rate = 3) prior to the end of employment internships.

Social Validity

According to social validity questionnaires completed by the supervisors (see Table 3), interns with ID (see Table 4), and the transition teacher (see Table 5), the use of CICO intervention was viewed favorably. All three supervisors indicated that the CICO intervention was helpful in providing feedback to the interns and the CICO goal sheet was easy to complete. The supervisors felt more comfortable interacting with the intern with ID and recognized the benefit of meeting with the intern before and after the work shift. All of the supervisors indicated that the one-on-one training was valuable and if they had the opportunity, they would participate in the intervention again. Likewise, all of the interns with ID agreed that the use of the CICO intervention helped them feel more comfortable at work and they enjoyed receiving regular feedback on how they were performing. Interns also believed the intervention improved their work performance. The transition teacher

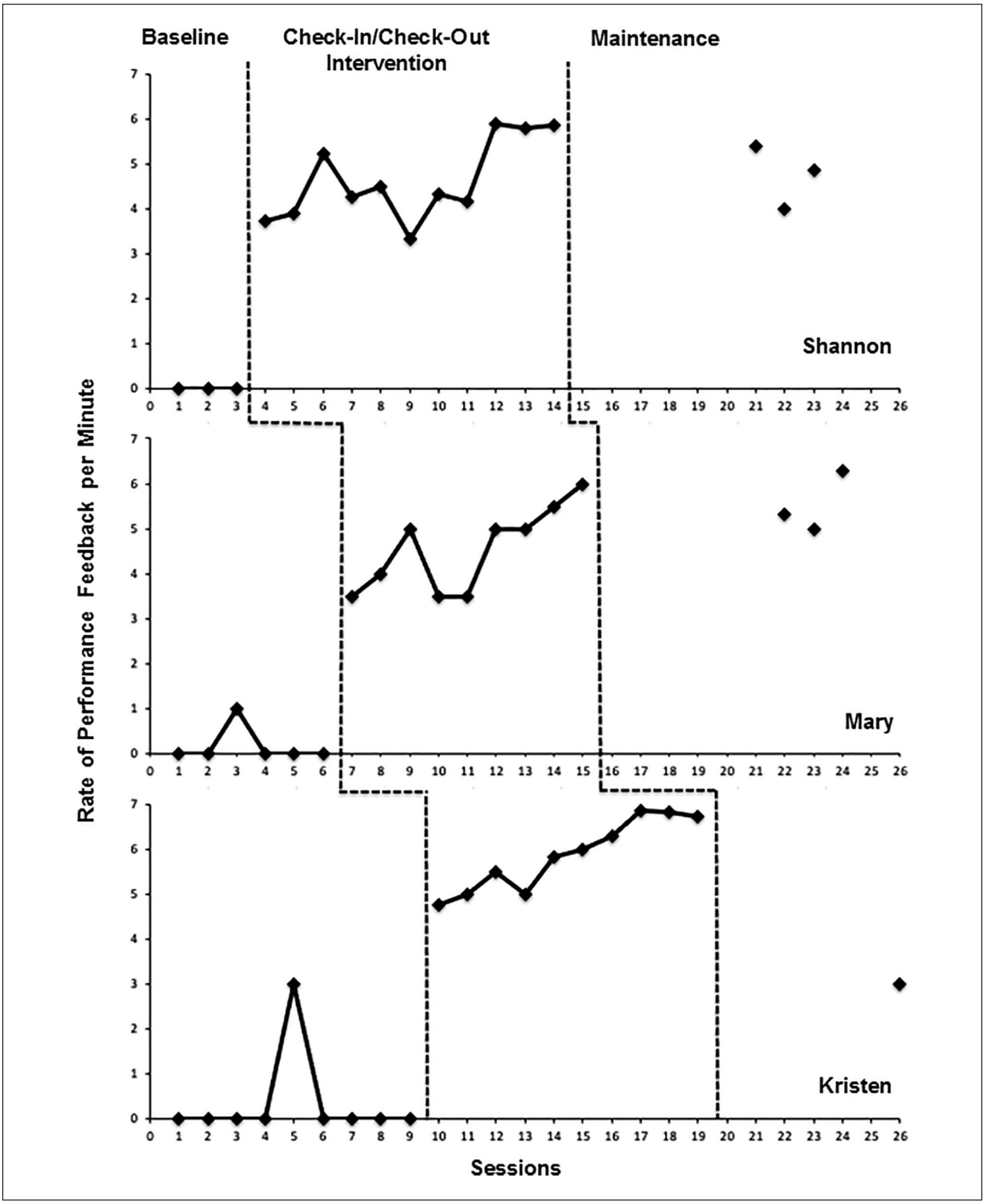

Figure 2. Rate of performance feedback across supervisors.

also indicated that the intervention was helpful with communicating how the intern was performing at work.

Challenges in Communicating Feedback

Supervisors discussed the challenges they might face in communicating feedback and how they overcome those challenges when communicating with an employee with a disability before and after the CICO intervention. We used this information to make general statements about how the supervisor discussed communication and any differences before and after the intervention was introduced. Table 6 displays pre- and post-responses by each supervisor.

Discussion

The results of this study provide strong evidence of a functional relation between the CICO intervention and the rate of performance feedback statements per minute given by a supervisor to an intern with ID. All three supervisors increased their rate of performance feedback statements immediately after being introduced to the intervention. In addition, maintenance data showed that the supervisors continued to provide performance feedback statements after the intervention had been introduced. Social validity questionnaires completed by each supervisor, intern with ID, and the transition teacher rated the intervention as beneficial and indicated that the use of the CICO goal sheet was considered easy and meaningful to use.

When identifying possible challenges in communicating feedback, supervisors often related the question back to challenges that are often linked with the stereotypes associated with disability (Ellenkamp et al., 2016; Gormley, 2015). For example, one supervisor identified "non-communicative" as a possible challenge in conveying feedback to individuals with disabilities and making sure the employee with a disability felt "safe" in talking to their supervisor. Safety and communication deficits often are stereotypes associated with people with disabilities (Gormley, 2015). However, after the CICO intervention, supervisors identified more challenges in relation to how they might be causing some of those communication barriers instead of the individual with disability.

When supervisors were asked to identify the approaches they used in addressing communication challenges, supervisors were initially vague in their responses. After the intervention, supervisors answered with specific ideas, such as (a) allowing the intern to have a break, (b) offering assistance, (c) using supportive language, and (d) relying on written and visual components when giving instructions. Goal setting and relationship building were not mentioned prior to the intervention; however, the importance of goal setting and nonwork-related conversations to build a working relationship were discussed after the intervention. This supports prior research on the importance of feedback with goal setting as well as the emphasis on increasing communication to build natural supports at work (Akkerman et al., 2016; Holderness et al., 2017).

This study extends the literature in several ways. First, although previous studies show that increased interaction and communication between the supervisor and employee with ID helps to establish natural supports (Andiola, 2014; Gormley, 2015), very few studies have involved supervisors who work with employees with disabilities (Amado et al., 2013; Hedley et al., 2017). This study focused extensively on the supervisors' role in vocational training and found that CICO was effective in assisting supervisors in providing performance feedback to interns with ID.

Second, Boden et al. (2018) was the only prior study that examined the use of CICO in vocational training for three students with moderate ID. They used paraeducators in the classroom as the facilitators for the intervention but suggested the use of the intervention with on-site supervisors because the intervention is not stigmatizing, time-consuming, or intrusive for an employment setting. Our study also found this to be true and suggests that the use of the intervention with supervisors provided more of a natural vocational experience for the interns with ID.

Third, previous studies on CICO have emphasized the need to examine the use CICO in other settings besides school settings, with female participants, and with students who have more severe disabilities (Hawken et al., 2014; Mitchell et al., 2017; Wolfe et al., 2016). Our study included female supervisors supporting female interns with moderate to severe ID in a community-based employment setting.

Fourth, Melius et al. (2015) recommended future research analyze the effects the CICO intervention has on the facilitator. Our study focused centrally on the supervisor. CICO tends to have low rates of fidelity of the home component (Drevon et al., 2018; Mitchell et al., 2017). Therefore, the home component in this study was completed by the transition teacher. The use of the transition teacher instead of the parent was more age-appropriate and allowed the teacher to know how the intern was performing at their vocational training site. The fidelity of this component for this study was 100%, which is much higher than previous studies (Mitchell et al., 2017; Wolfe et al., 2016).

Fifth, we demonstrated the utility of the CICO intervention in a fully integrated vocational training setting for young adults with ID. This is the first study to use the CICO intervention in an integrated vocational setting and the first study to focus on the outcomes of the facilitator. This study also speaks to the value that CICO intervention could have in shaping the environment and building relationships.

Limitations

Although this study found that the use of the CICO intervention was effective, there are still several key limitations. The

Table 6. Supervisor Responses to Open-Ended Questions.

Questions	Response before the CICO intervention	Response after the CICO intervention
What challenges might there be in communicating feedback to an employee with a disability?	Shannon: "Well, depending on the employee's disability, I would adjust the communication style. I think with any new employee, it takes time to adjust to new personalities, job skills, etc." Mary: "If an employee's disability causes the employee to be mostly non-communicative, it can be challenging to understand the employee's feelings and responses about his/her/their assignments or how to improve skills. Employees with disabilities should feel safe discussing work questions and issues with his/her/their supervisor in order to create a successful working relationship." Kristen: "The employee might not ask questions if they do not understand the task, the employee might not take their time with the task to complete it appropriately, the employer might not communicate instructions in a way that is most effective with the employee's communication style."	Shannon: "There were some days when student had a hard time staying focused or just was having a bad morning. We would modify goals if needed and also the student was given the option to take a short break when needed." Mary: "My employee sometimes misunderstood feedback. However, through developing rapport and discussion, we were able to work through the issues and communicate with one another better." Kristen: "There could be a method of communication error. The employer might not be communicating in a way that is effective with the employee's learning style or abilities."
What are some ways you approach these challenges of communicating feedback to an employee with a disability?	Shannon: "I am still learning, on a daily basis, different ways to communicate with employees with disabilities. As with anything new, repetition and being consistent with new skills is very important." Mary: "These challenges can be resolved by finding methods that reach the employee effectively so the supervisor can develop trust and rapport with the employee. Supervisors should learn what methods are most effective when communicating with the employee, and these methods can be individualized to each employee's needs." Kristen: "Ask the employee directly if they understand the task at hand and if they have any questions, guide the employee through the first part of the task to make sure they are comfortable with it, communicate with a variety of communication styles (instructions in writing, verbal instructions, video instructions, picture instructions)."	Shannon: "As stated earlier, the option of taking a short break to clear the mind was in place when needed. I would sometimes stop in the office to see how things were going and offer assistance if needed." Mary: "Occasionally, my employee would misinterpret the job assignment given, or the employee would be too shy/nervous to speak with me openly. As time passed, we were able to find commonalities between us and have both work and non-work related discussions. I also learned to choose encouraging and supportive language that was easy to follow so that I communicated my requests efficiently and positively." Kristen: "I speak to the employee directly and with patience. I try to approach instructions and directions for a task with written and visual components to help ensure the best understanding of what is expected."

Note. CICO = check-in/check-out.

findings of this study would be strengthened by larger sample size to increase generalizability and external validity. In addition, the three supervisors that participated in the study were all white females and did not mirror the diversity of the university. Another limitation related to the measurement of rate, which was extremely sensitive, but did not allow us to examine changes in the amount of time supervisors spent with their interns with ID in casual conversations during CICO sessions. Additional types of measurement could better characterize the effects of the intervention. Furthermore, only recorded sessions of data were reported. This was due to the frequency of (a) iPad issues, (b) the supervisor being unavailable, (c) the intern being absent, or (d) the occurrence of a recording mishap. Due to time constraints, Mary moved into maintenance but could have stayed in intervention longer and Kristen was only able to complete one maintenance point. Allowing participants more time in the intervention and in maintenance could result in stronger findings.

Future Research

Findings of this study would be strengthened by replication and further analysis. All of the participants in this study had at least a year of experience working with individuals with ID in vocational training. More research is needed on the use of CICO with new supervisors who do not have prior experience working with youth with disabilities. This would allow for a further investigation into how the intervention can also play a part in training supervisors in working with individuals with ID. Furthermore, future studies could determine if generalization of the training among the supervisors occurs after receiving a new intern. Future research is needed to examine the use of CICO in a competitive and gainful employment position as opposed to a vocational training setting. This could provide evidence that the intervention is effective in helping a hired employee with a disability become well adjusted to their new working environment by establishing natural supports and understanding ways they can improve on the job. Future analyses should examine possible fading procedures for individuals with disabilities in gainful employment positions. An additional step during training could also be teaching the intern to initiate the CICO sessions at work to increase their independence and self-determination. Likewise, this study focused on the effects of the CICO intervention on the supervisor. However, future studies are warranted in determining how the use of the intervention in employment also affects the work of the employee or intern with a disability. Qualitative inquiry is also needed to determine if the quality of interaction between the supervisor and the intern with a disability changed due to the intervention. This would speak to the impact of the CICO intervention on breaking down social barriers and forming natural supports, thereby establishing its utility.

Implications for Practice

Based on the results from this study, professionals should consider implementing CICO or a modified version in inclusive work settings. Similar to Boden et al. (2018), we found that the CICO intervention provided structure but was not intrusive or stigmatizing for youth with disabilities in an inclusive employment setting. Professionals such as transition teachers, vocational rehabilitation counselors, and job coaches could use the CICO intervention as a strategy to assist individuals with ID in receiving more feedback on their work performance from their on-site supervisors. The intervention could be implemented in vocational training settings or in gainful employment.

The supervisors in this study affirmed the ease of using the CICO goal sheet. The sheet was designed to not overwhelm supervisors and to allow for flexibility. The CICO goal sheet could easily be modified to fit the needs of individual interns or employees with disabilities. For example, if an intern was responsible for the same tasks each day, the CICO goal sheet could have those tasks listed prior to the start of work. For interns or employees who struggle with reading a task list, the CICO goal sheet could be modified to include pictures. Finally, if the intern with a disability is doing really well at their job and has a good relationship with their supervisor, the professional may want to modify the CICO goal sheet to once a week. This would allow for the intern to meet with their supervisor to discuss their overall performance for the week and set new goals for the following week.

Conclusion

Results from this study determined that there was a functional relation between the CICO intervention and the rate of performance feedback statements given by a supervisor to an intern with ID during vocational training. Supervisors found the CICO intervention helpful in providing feedback to interns with ID and they felt more comfortable communicating with the intern after the intervention. Future research should continue to identify interventions to improve the work environment and people in the environment to make it more accessible for employees with ID.

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ORCID iD

Olivia R. Hester https://orcid.org/0000-0001-6192-0781

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