

AN INVESTIGATION OF THE EFFICACY OF CHECK IN/CHECK OUT AS AN
INTERVENTION FOR STUDENTS WITH DISABILITIES
IN VIRTUAL SCHOOL

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ABSTRACT

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Addressing the needs of all students with behavioral problems is important, as research and legislation prioritize the implementation of school-wide positive behavioral interventions and supports (SWPBIS) in school settings. The Individuals with Disabilities Education Improvement Act (IDEIA) specifically includes a provision to consider behavior supports in educational planning for students with disabilities (IDEIA, 2004; National Education Association, 2014). With the rising growth of virtual schools, educators must find ways to provide behavior supports to students with disabilities in the virtual school environment as IDEIA requires.

This study is a single case multiple baseline study investigating the effects of Check In/Check Out (CICO), on student on-task behavior in a full-time virtual K-12 school in Texas. CICO is a multi-step process to decrease problem behaviors by increasing both adult interaction and positive reinforcement contingent upon appropriate behaviors for students (Campbell & Anderson, 2011; Simonsen, Myers, & Briere, 2011). Four secondary students enrolled in a full-time virtual school with disabilities participated in this study.

Results of this study suggest that implementation of CICO with three out of the four participants resulted in improvements in on-task behavior. Additionally, CICO was implemented with high fidelity and was rated favorably by stakeholders.

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CHAPTER I

INTRODUCTION

In recent years, the United States has embraced virtual schooling as a medium of delivering instructional content for kindergarten through 12th grade (K-12) students (Cavanaugh, 2010; Dobrovolny, Edwards, Friend, & Harrington, 2015; Toppin & Toppin, 2016). Nationwide, there are approximately 478 fully online virtual schools serving over 300,000 students (International Association for K-12 Online Learning, 2013; U.S. Department of Education [USDoEd], 2015) and an additional 460,000 students in blended programs that offer a mix of coursework through mixed virtual and traditional brick and mortar settings (Dobrovolny, Edwards, Friend, & Harrington, 2015). In Texas, approximately 14,000 students of the state's 5.2 million receive their public education entirely online (Texas Education Agency, 2016; Texas Virtual School Network, 2015). Enrollment in virtual schools is projected to escalate and ultimately outpace traditional brick and mortar schools (Dobrovolny, Edwards, Friends & Harrington, 2015; Toppin & Toppin, 2016). Virtual schools are alternative school options for students with and without disabilities (Barbour, 2011; Miron & Urschel, 2012). Results from a 2012 study of K-12 virtual schools indicate that 9.4% of students enrolled in virtual programs are students with disabilities (Miron & Urschel, 2012). However, research on education in the virtual setting is limited and there is even less research on virtual education for

students with disabilities (Barbour, 2011; Black, DiPietro, Ferdig, & Polling, 2009; Carnahan & Fulton, 2013; Greer, Rice, & Dykman, 2014; Toppin & Toppin, 2016).

Educational policies created for traditional brick and mortar school campuses are now being applied to virtual schools (Ahn, 2011). These policies include legislation that addresses services and supports for students with disabilities. As in public schools, virtual school administrators and authorizers must follow the Individuals with Disabilities Improvement Act (IDEA). On August 5, 2016, the United States Department of Special Education and Rehabilitative Services issued a “Dear Colleague” letter to virtual schools indicating that “educational rights and protections afforded to children with disabilities and their parents under IDEA must not be diminished or compromised when children with disabilities attend virtual schools” (USDoEd, 2016, p. 6).

IDEA is the only federal law to address behavior supports for students (National Education Association [NEA], 2014). IDEA specifically and uniquely includes a provision to consider Positive Behavior Intervention and Supports (PBIS) in educational planning for students with disabilities (IDEA, 2004; NEA, 2014). PBIS is a framework that aligns resources, evidence-based practices, and data within the school setting to support the academic, social, and behavioral needs of students (Sugai et al., 2010). School-wide positive behavior interventions and supports (SWPBIS) is a school-wide multi-tiered system of support that includes proactive strategies for defining, teaching, and supporting student behaviors (Sugai & Horner, 2006; Walker, Sugai, Bullis, et al.,

1996). Within SWPBIS, there are three tiers of non-punitive individualized systems of support (Crone, Hawken, & Horner, 2010; Walker et al., 1996) that extend to all areas of school to promote a healthy culture and minimize problem behaviors (Lewis & Sugai, 1999; Scheffler & Aksamit, 2006). Behavior support is important for all students, not just those attending traditional brick and mortar schools. Students' behavior has an impact on educational outcomes (Lewis & Sugai, 1999). Therefore, commitment to research-based behavioral supports and interventions is essential to virtual programming.

Multiple research-based interventions can be used within the SWPBIS framework. This study focused on Check-in/Check-out (CICO). CICO is an option for Tier 2 behavior support within the SWPBIS model (Campbell & Anderson, 2011; Hawkins & Horner, 2003; Todd, Campbell, Meyer, & Horner, 2008; Simonsen, Myers, et al.). CICO is a multi-step daily intervention that requires students to check in with an adult at the beginning of the school day to receive a goal card and verbal prompts about expected behaviors (Crone et al., 2010). During the day, classroom teachers provide feedback on the goal card at certain intervals; at the end of the day, students check out with an adult to return the card and have a quick discussion about performance and target behaviors (Crone et al., 2010). Finally, the card is to be taken home, signed by the student's guardian, and returned during check-in the next day (Crone et al., 2010). CICO is a proactive intervention designed to reduce problem behavior while simultaneously increasing prosocial behaviors (Campbell & Anderson, 2011; Simonsen et al., 2011; Todd

et al., 2008). Research indicates that implementing CICO can promote student engagement, increase prosocial behavior, and effect positive educational outcomes in brick and mortar schools (Campbell & Anderson, 2011).

This study investigated the efficacy of CICO to increase on-task behavior in a virtual school for students with disabilities.

Statement of the Problem

IDEIA requires education agencies to use evidence-based practices (i.e., those supported by rigorous research) when meeting the behavioral and academic needs of students with (IDEIA, 2004). Selected practices and interventions should have documented positive outcomes for children. It is unclear if virtual schools' current behavioral supports provide "all the educational benefits afforded by the technology in an equally effective and equally integrated manner" as required by IDEIA (USDoEd, 2010, p.1). Limited research on the virtual school environment may put virtual schools at odds with the requirement for using evidence-based practices. Researchers should investigate if interventions proven effective in brick-and-mortar settings are equally effective in a virtual setting.

Purpose of the Study

The purpose of this single case multiple baseline study was to investigate the effects of CICO on student on-task behavior in a full-time virtual K-12 school in Texas. For the purposes of this study, on-task behavior was defined as any or all of the following

behaviors: responding to polls and teacher questions when called upon, contributing to the discussion with on-topic comments, working on assignments, following appropriate teacher direction within 5s, and requesting assistance (according to expectations) from the teacher regarding assigned tasks. Non-examples of on-task behavior include off-topic messaging with other students and teachers, not responding to teacher directions or prompts within 5s, and not contributing to class discussions as expected. Observations were made using a remote desktop software application that allowed the observers to see the screens of the students when working.

This study investigated the following research questions:

- Can CICO be modified to provide Tier 2 behavioral supports to students with disabilities in an online setting?
- Can virtual CICO increase the frequency of on task behavior for students with disabilities during academic routines in a virtual setting?

Summary

Virtual schools are now part of the educational landscape in the United States (Dobrovolny, et al., 2015; Toppin & Toppin, 2016). Despite the growth of virtual K12 schools, there is a dearth of research on students in virtual schools and even less research regarding students with disabilities in virtual settings (Barbour, 2011; Greer et. al., 2014; Toppin & Toppin, 2016). This study seeks to add to the body of literature of students

with disabilities in virtual settings by examining the effects of CICO on student on-task behavior.

Details of the historical evolution of virtual school programming, reviews of existing CICO literature, and the rationale for the study are discussed in Chapter II. The specific methods used in the study are presented in Chapter III. The main findings from the study are summarized in Chapter IV. Lastly, a summary of the findings and conclusions from the study are presented in Chapter V.

CHAPTER II

REVIEW OF LITERATURE

Educators have been concerned about managing behavior and academic engagement in nontraditional school settings since print-based correspondence became an option in the nineteenth century. The concept of a “virtual school” has roots in the traditional, print-based correspondence-education model first formalized in Germany in 1873 by Charles Toussaint and Gustav Langenscheidt (Holmberg, 1995; Kentnor, 2015). The delivery medium of distance education has continued to evolve as technological advancements have been made all over the world (; Kentnor, 2015; Roffe, 2004; Saettler, 2004). Correspondence courses began with written correspondence, then evolved to using the traditional postal service, then to radio, then telematics, then video conferencing, then computers, all of which led to virtual education becoming available via the world-wide web (Roffe, 2004; Kentnor, 2015). As technological advancements have increased accessibility to alternative educational options for all students, implementing behavior supports in alternative settings has also evolved from a consideration to a mandate.

Virtual schooling in the United States began in 1960 at the University of Illinois when the university introduced a platform where students could gain access to course materials and lectures using a television or audio device (Jones, 2015). In 1971, a collaborative, experimental educational program between 17 universities formed the University Without Walls (UWW; Baskin & Hallenbeck, 1972; Stetson, 1979). UWW

was a pioneering approach allowing professors to educate students through any medium, including face-to-face instruction, correspondence courses, an intranet, and telematics (Baskin & Hallenbeck, 1972). In UWW, professors delivered instruction to non-traditional students by any means necessary, including going to their homes, workplaces, or making materials available solely online (Stetson, 1979). Online coursework in the 1970s did not look like it does today. Coursework was delivered on modified television sets with text and limited graphics, digital audio, and a video switching device to embed video into the virtual classroom (Jones, 2015). As technological capabilities increased and the demand for other universities like UWW grew, the U.S. Department of Education helped fund UWW; and in 1984 established the Electronic University Network (EUN), charging the network with assisting colleges and universities in expanding the availability of online courses (Harasim, Hiltz, Teles, & Turoff, 1995). While the concept of online education was slowly introduced to kindergarten through 12th grade (K-12) schools soon thereafter, no special provisions existed for students with disabilities or for addressing students' behavioral needs (Watson, Murin, Vashaw, Gemin, & Rapp, 2010).

The first full-time online private school in the United States began in 1991 (Barbour, 2013) and a full-time online public school (based in California) followed in 1994 (Darrow, 2010). During the 1996-1997 school year, Florida Virtual School and Virtual High School were funded through several state and federal initiatives to support online learning for K-12 schools (Clark, 2001; Watson et al., 2010). Some researchers

consider the opening of these Florida schools the real beginning of K-12 online schooling in the United States (DiPietro, Ferdig, Black, & Preston, 2008; Watson et al., 2010). The International Association for K-12 Online Learning (iNACOL) began to collect data related to online education during the 2000-2001 school year, at which time approximately 40,000 to 50,000 K-12 students were enrolled in at least one online course in the United States (Clark, 2001; iNACOL, 2011a). By 2013, there were approximately 2 million students from all 50 states enrolled in K-12 online courses (Watson, Murin, Vashaw, Gemin, & Rapp, 2013). According to the most recent data available, an estimated 300,000 students receive their education completely online (U.S. Department of Education, 2015). In 2016, approximately 12,000 of the Texas's 5.2 million total students received their public education entirely online (Texas Education Agency, 2016; Texas Virtual School Network, 2015). Enrollment in virtual schools is projected to rise and eventually eclipse traditional brick-and-mortar schools (Dobrovolny et al., 2015; Toppin & Toppin, 2016).

Research on Virtual Settings

Virtual schools have expanded the continuum of school choice for parents, allowed accessibility to different educational options in rural areas, increased flexibility of schedules, minimized disproportionality, lowered costs, and introduced alternative career opportunities for educators in the United States (Barbour, 2011; Cavanaugh, 2010; Clark & Berge, 2005). Growth of virtual schools has far exceeded the research on this

education delivery model (Barbour, 2011). Black, et.al., (2009) indicated a dearth of research related to teaching and learning in K-12 virtual schools, and there is even less research on the benefits of virtual education for students with disabilities (Barbour, 2011; Black et al., 2009; Carnahan & Fulton, 2013; Greer, et.al., 2014; Miron & Urschel, 2012; Toppin & Toppin, 2016).

While the number of K-12 virtual schools has been steadily increasing, research on effective ways to support the behavior and learning of all online students is limited (Black et al., 2009; Cavanaugh, Gillan, Kromrey, Hess, & Blomeyer, 2004; DiPietro, Ferdig, Black, Preston, 2008; Greer et al., 2014). Critics have said that K-12 virtual schools lack access and interventions for students and do not have policies in place to support students with disabilities (Anthony & Padmanabhan, 2010; Greer et al., 2014; Miron & Urschel, 2012). When searching for best practices and recommendations from leading organizations, those teaching in online environments can usually only find practices that have been modified or adapted from research on specific to face-to-face instructional practices (Kentnor, 2015). In the earliest days of internet-based K-12 education, the Higher Education Program and Policy Council (American Federation of Teachers, 2000) and the American Distance Education Council (ADEC, 2007) released guidelines for best practices in online teaching related to course efficiency and effectiveness, but these guidance documents did not address interventions for struggling students or students with disabilities (Anthony & Padmanabhan, 2010; Kentnor, 2015). In

2006, the Southern Regional Educational Board (SREB, 2006) and the National Education Association (NEA, 2006) released similar recommendations, but these recommendations explicitly targeted secondary teachers and the required skill sets needed by secondary teachers to teach online; the recommendations did not include researched-based behavioral interventions for students with disabilities in virtual K-12 settings. Because these handbooks largely provided adaptations of face-to-face teaching practices (rather than specific practices that focused on the unique nature of virtual schooling), there remained a need for additional research on effective interventions for struggling students specifically focused on virtual school settings (Meloncon, 2007).

Although the traditional characteristics of virtual schooling (e.g., receiving education at home, the availability of asynchronous coursework, an individualized approach, flexible scheduling) may by themselves provide additional support to students with behavioral challenges (Kleiner, Porch, & Farris, 2002), these features alone are likely not enough to decrease all challenging behaviors demonstrated by students in virtual schools. Virtual schools need to support the behavioral needs of all students, including those with disabilities.

Special Education Supports in Virtual Schools

Virtual schooling can be convenient and flexible due to the self-paced nature of most coursework and students' ability to access their academics from anywhere with an internet connection (Napaporn, 2014). This flexibility and convenience may lead to a lack

of student-teacher interaction and hinder immediate support and timely feedback associated with traditional classrooms (Napaporn, 2014). Results from one study investigating the instructional design of virtual classes for students with disabilities found that a lack of support and timely feedback had a negative impact on accessibility and support systems (Keeler & Horney, 2007). Congress (2015) recommended that teachers incorporate frequent communication with students into instructional design and delivering clear feedback in a timely manner, both of which are tenets of check in, check out (CICO; CICO is described in detail below).

Students in virtual schools may also experience a lack of behavioral and emotional supports due to transactional distance (Anderson & Dron, 2011; Moore, 1997). Transactional distance describes the geographic, communication, time, and psychological space created by the separation of students and teacher in a virtual learning environment in both synchronous and asynchronous coursework (Moore, 1997). This transactional distance can contribute to possible miscommunication and unclear expectations between students and teachers. Regardless of physical proximity, teachers guide and reinforce academic engagement and behaviors. Swan (2001) found that psychological and communication distance between students and teachers can be decreased and academic engagement increased by giving timely feedback, issuing praise, and offering other continued reinforcers. CICO incorporates timely feedback and continued reinforcers and

may be an effective intervention for students in virtual programs who may be impacted by this by transactional distance.

Because virtual schools are a relatively new way of delivering K-12 education, virtual school educators must find ways to provide proactive behavior supports to students with disabilities in the virtual school environment. During the late 1990s and early 2000s, schools' disciplinary policies began evolving from reactive to more proactive approaches to managing student behavior (Feinstein, 2003; Horner, Sugai, Todd, & Lewis-Palmer, 2000). Reactive discipline can result in an increase in the frequency and severity of problem behaviors in students (Safran & Oswald, 2003). A proactive approach, such as positive behavioral interventions and supports (PBIS), supports the behavior of all students (i.e., not just those with challenging behaviors) by describing, teaching, modeling, and supporting appropriate student behaviors, thereby decreasing the likelihood of inappropriate behavior and leading to a more effective learning environment (Carr, Dunlap, Horner, Koegel, Turnbull, Sailor, et. al., 2002).

Research and legislation prioritize the implementation of PBIS in school settings. The Individuals with Disabilities Education Act (IDEA) specifically includes a provision to consider PBIS in educational planning for students with disabilities (IDEA, 2004; NEA, 2014). PBIS systems and practices can also be implemented for all students at the school-wide level (i.e., SWPBIS). SWPBIS is a multi-tiered system of support that includes proactive strategies for defining, teaching, and supporting the behavior of all

students in a school (Sugai & Horner, 2006; Walker et al., 1996). Within SWPBIS, there are usually three tiers of non-punitive systems of support (Crone, Hawken, & Horner, 2010; Walker et al., 1996) that extend to all areas of a school to promote a positive, prosocial culture and minimize problem behaviors (Lewis & Sugai, 1999; Scheffler & Aksamit, 2006).

A three-tiered SWPBIS system includes primary (Tier 1), secondary (Tier 2), and tertiary (Tier 3) levels of support (Crone et al., 2010; Sugai & Horner, 2006; Todd et al., 2008). Each tier requires both the explicit teaching of behavior and specific collaboration between students, staff, parents, and sometimes community (Crone et al., 2010). All students in a SWPBIS school receive Tier 1 (i.e., universal or primary-level) supports, which include intentionally teaching behavior expectations to students, acknowledging positive student behavior consistently, and using collected data to make educational decisions (Horner, Sugai, & Anderson, 2010; Sugai & Horner, 2006). Research indicates that approximately 80% of students respond to Tier 1 supports; that is, these students maintain behaviors that meet school expectations (Crone et al., 2010). Tier 2 (i.e., secondary-level) supports include targeted interventions to support approximately 10 to 15% of students who are not responsive to the primary level. Tier 2 supports (e.g., CICO) require staff to match a problem behavior with a research- and function-based intervention (Horner et al., 2010a). Tier 3 supports are individualized for students who

require more intensive supports than Tier 1 or Tier 2 and are likely to involve a functional behavioral assessment (FBA; Campbell & Anderson, 2011; Todd et al., 2008).

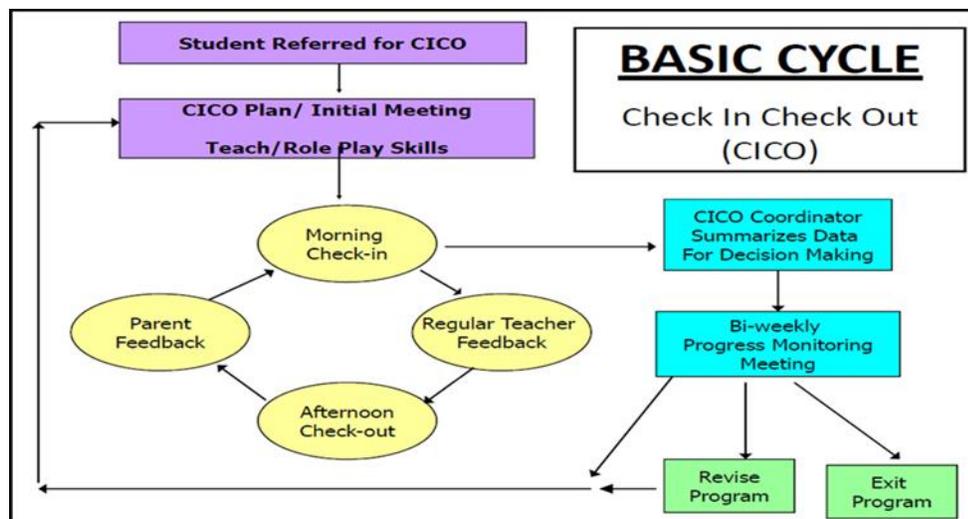
Check In/Check Out

CICO (Crone et al., 2010) is a Tier 2 intervention designed to decrease problem behaviors and increase academic engagement for students who have mild but chronic inappropriate behaviors that are nonthreatening and non-injurious (Campbell & Anderson, 2008; Campbell & Anderson, 2011; Fairbanks, Sugai, Guardino, & Lathrop, 2007). CICO incorporates preventive measures to decrease problem behaviors by increasing both adult interaction and positive reinforcement contingent upon appropriate behaviors for students whose behavior is maintained by adult attention and not escape or avoidance (Campbell & Anderson, 2011; Simonsen et al., 2011). CICO increases opportunities for positive interactions with adults and provides a structured process for obtaining frequent feedback on a student's adherence to schoolwide or classwide behavioral expectations (Campbell & Anderson, 2011; Fairbanks et al., 2007). In multiple studies of CICO, teachers and students have expressed satisfaction with CICO as an intervention (Hawken & Horner, 2003; Todd et al., 2008).

Specifically, CICO is a daily, multi-step intervention that requires students to check in with an adult (i.e., a CICO advisor) at the beginning of the school day. At the morning check-in, students receive a goal card (i.e., point sheet) and verbal prompts about expected behaviors from a CICO advisor (Crone et al., 2010). During the day,

classroom teachers provide feedback on the goal card at certain intervals; at the end of the day, students check out with a CICO advisor to return the card and have a quick discussion about performance and target behaviors (Crone et al., 2010). Finally, the card is taken home, signed by the student’s guardian, and returned during the next day’s check-in (Crone et al., 2010). In addition to these steps, a CICO team meets regularly to review data to (a) ensure that students are making adequate progress and (b) determine if any changes are needed changes to the intervention. CICO is not resource-intensive and can be quickly implemented with one student or groups of several students in need of more support than the Tier 1 system offers (Filter, McKenna, Benedict, Horner, Todd, & Watson, 2007; Todd et al., 2008).

Figure 1. Check in/Check out basic cycle. This graph shows the four prescriptive steps of CICO



(used with permission from Crone, Hawken, and Horner, 2010, p. 16)

CICO with Elementary Students

Results from several studies indicate that CICO can have a positive impact on the social behavior of elementary school students. For instance, McIntosh and colleagues (2009) implemented CICO with 34 students across six schools in the Pacific Northwest and found an overall decrease in office referrals, decreases in problem behaviors, and increases in other appropriate behaviors, including sharing and volunteering (McIntosh, Campbell, Carter, & Dickey, 2009). Results from a study of CICO implementation for four students in a suburban elementary school indicated an increase in academic engagement and a reduction in problem behaviors for all four students (Campbell & Anderson, 2011). Researchers investigating CICO in a rural school found that implementing CICO reduced office referrals and decreased the frequency of inappropriate behaviors for four children in the primary grades (Todd et al., 2008).

CICO with Middle School Students

Additional research indicates that CICO has been associated with a decrease in problem behaviors across age groups (Hawken, 2006). March and Horner (2002) studied the effects of CICO on the rates of office discipline referrals (ODRs) for 24 middle school students. Using a quasi-experimental design, the number of ODRs per student was examined before and after the CICO intervention. The researchers found that 67% of the students who received CICO had reductions in ODRs after implementation. A similar study by Hawken (2006) found that 7 of the 10 middle school students who participated

in CICO had decreases ODRs directly after participating. Results from a randomized control trial with 42 students in an urban middle school indicated that CICO was an effective intervention for middle school students with off-task behaviors (Simonsen et al., 2011). Hawken and Horner (2003) used a multiple-baseline single-subject design to examine the effects of CICO on problem behaviors and academic engagement of middle school students and found reductions in classroom problem behaviors and increases in academic engagement across participants. Hawken and Horner also reported the on intervention's social acceptability, with the majority of teachers, parents, and students rating CICO as helpful in reducing problem behaviors, easy to participate in, and worth the time and effort.

CICO has also been associated with an increase in appropriate behaviors for middle school students with disabilities. Bergman (2009) investigated the effects of CICO on the behavior of six middle school students with learning disabilities, emotional disturbance, or both. These students participated in a six-week CICO intervention focused on targeted problem behaviors or class preparedness, task completion, punctuality, and academic engagement. Results of the study show that CICO improved behaviors for all six of the students (Bergman, 2009). Overall, CICO has been associated with positive results (i.e., increases in appropriate behavior and/or decreases in inappropriate behavior) for a variety of students who display non-violent problem behaviors in school settings.

CICO with Students in Alternative Placements

In most published studies (including those cited herein), regular teaching staff implemented CICO with minimal training in traditional classroom settings (Wolfe et. al., 2016). While studies of CICO have typically been conducted in traditional school settings (where the intervention is most commonly used), a few studies have evaluated the efficacy of CICO in alternative school settings (Ennis, Jolivette, Swoszowski, & Johnson, 2012; Swoszowski, Jolivette, Fredrick & Heflin, 2012). Results from a study of CICO conducted in a residential facility indicated a decrease in problem behaviors for four out of the six middle school students who participated (Swoszowski et al., 2012). Results from another CICO study conducted in a different residential facility indicated a decrease in the problem behaviors of three secondary students with attention-maintained behaviors (Ennis et al., 2012). Neither of the aforementioned studies reported data on the relationship between CICO and academic engagement.

Social Validity of CICO

Social validity, or the social importance and acceptability of interventions by stakeholders (e.g., parents, students, and teachers) are critical for the continued implementation and effectiveness of any intervention (Cooper, Heron, & Heward, 2007; Wolf, 1978). Several studies that surveyed CICO implementation in school settings reported high ratings for social validity (Filter et al., 2007; Hawken & Horner, 2003; Hawken, MacLeod, & Rawlings, 2007; Hawken, O'Neill, & MacLeod, 2011; Lane,

Capizzi, Fisher, & Ennis, 2012; Mong, Johnson, & Mong, 2011; Simonsen et al., 2011; Todd et al., 2008). For example, in a descriptive study comparing student discipline rates before and after participation in the CICO intervention, 17 participating faculty and staff were asked to rate effectiveness and efficiency of the CICO using a 6-point Likert scale (Filter et al., 2007). Results indicated satisfactory views of the intervention from most of the respondents. Overall mean ratings across groups of teachers, administrators, and staff were 4 or higher, providing evidence for ease of implementation, importance of effects, and preference of the CICO compared with other interventions (Filter et al., 2007).

CICO Fidelity of Implementation

Fidelity of implementation is the commitment to following all procedures when implementing an intervention (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). Multiple studies of CICO have documented school personnel as successful implementers of CICO (Campbell & Anderson, 2011; Campbell & Anderson, 2008; Ennis et al., 2012; Fairbanks et al., 2007; Filter et al., 2007; Hawken et al., 2007; Hawken et al., 2011; Lane et al., 2012; McIntosh et al., 2009; March & Horner, 2002; Mong et al., 2011; Simonsen et al., 2011; Todd et al., 2008). For example, in one study, school personnel implemented CICO with four students in a general education setting (Campbell & Anderson, 2011). Fidelity was monitored using a 12-item observation checklist that included items to be completed across the five intervention components (i.e., check-in, teacher feedback, check-out, data collection, and parent participation). Results showed accurate

implementation, with an average 97% of required items completed during fidelity checks (Campbell & Anderson, 2011). In another study, fidelity of school personnel's CICO implementation was monitored using a 10-item checklist and data indicated delivery of the intervention with 100% accuracy for each participant (McIntosh et al., 2009). In a third example, levels of fidelity of intervention delivery were assessed using an observation checklist when school personnel delivered CICO for junior high and high school level students in a residential treatment setting; average fidelity of implementation across checks neared 92% (Ennis et al., 2012).

Data on fidelity of school personnel's CICO implementation were also collected in two studies that included larger samples of students (March & Horner, 2002; Simonsen et al., 2011). In the March and Horner (2002) study, a school team comprised of three special education teachers, a school psychologist, a school counselor, and an educational assistant implemented and monitored the CICO intervention for 24 students in middle school. Student progress reports were reviewed to determine daily checks and teacher feedback was provided. Results showed all 24 students maintained participation in the program with no more than one daily point card per week indicating missing data (March & Horner, 2002). In the Simonsen et al. (2011) study, a school CICO team comprised of three counselors, one social worker, and three graduate interns facilitated CICO implementation for 27 middle school level students (Simonsen et al., 2011). Fidelity of

implementation was monitored regularly and outcomes indicated an average of 93% compliance with essential features of the intervention (Simonsen et al., 2011).

Limitations of CICO

Multiple studies have reported a functional relationship between CICO and students' behaviors across various grades and settings. However, CICO does have some limitations. In the published research, there is minimal evidence indicating CICO had a positive impact on reducing problem behavior for secondary students (Ennis et al., 2012; Mitchell, Adamson, & McKenna; 2017). Most of the study participants were male; research on CICO with female participants is limited (Mitchell et al., 2017). Since there is often limited oversight of CICO implementation (e.g., by researchers or administrators) unless research is being conducted, school personnel implementing CICO may modify the procedures and deliver punishments to address problem behaviors (e.g., detentions, grade penalties) which could impact the fidelity of CICO implementation and its effectiveness (Ennis et al., 2012).

Virtual Behavior Supports Outside of Education

Supporting student behavior in a virtual environment presents challenges; the aforementioned lack of research on the adaptation of face-to-face interventions to a virtual setting or unique virtual interventions leaves virtual educators with limited options. Some virtual behavioral supports (e.g., applied behavior supports, e-therapy) have been provided to children and adults in their homes and have proven effective when

provided by other disciplines outside of education (Paxling et al., 2011; Postel, de Haan, Ter Huurne, Becker, & de Jong, 2011; Pugh, Hakjstavropoulos, Klein, & Austin, 2014). Research on applied behavior analysis (ABA) in virtual schools has demonstrated that virtual ABA interventions have been used successfully to increase communication and decrease problem behaviors for children (Vismara, McCormick, Young, Nadhan, & Monlux, 2013; Wacker et al., 2013).

A pilot study investigated if virtual behavioral interventions would increase parent training and children's language skills and behavior (Vismara et al., 2013). Results indicated that the intervention skills of participating parents increased during the 12-week study and the communication and behaviors of children participating in the study also improved (Vismara et al., 2013). Wacker et al. (2013) conducted a study to determine if providing behavior interventions to children in an online format would reduce problem behaviors. Results showed a reduction in problem behavior with all 17 subjects, indicating that effective intervention can be provided virtually by a behavior analyst (Wacker et al., 2013). Results from these two studies indicate that behavioral supports delivered virtually have the potential to be as effective as those same supports delivered in a traditional (i.e., face-to-face) format. Based on these promising results from studies of virtual behavior interventions, the current study applied this possibility of effectiveness to the delivery of CICO (traditionally a face-to-face intervention) in a virtual setting.

Teacher Support and Parental Involvement

Students with various academic and behavioral difficulties enroll and attend virtual schools. Therefore, virtual schools should provide access to the same level of instructional, behavioral and related support services that students receive in face-to-face learning environments (Cooper, 2006; LaPadula, 2003). CICO is a behavioral intervention requiring both teacher support and parental involvement, both of which are critical to student success (Hernandez, 2005; McCracken, 2004; Zins & Elias, 2006).

Parents and guardians play a vital role in their child's education. The daily parent communication required in the CICO intervention allows for parental involvement to support both the child and the school in the hopes of changing the trajectory of non-desired behaviors. Children whose parents are involved in their education typically have higher grades and test scores, lower absenteeism, and display more positive behaviors and attitudes (Anderson & Minke, 2007). Parental involvement adds an additional source of support to influence the child's behavior (McNeal, 2001).

Teachers must develop positive, healthy relationships with students to more effectively support and teach the skills students need to be academically, socially, and emotionally successful. Teachers should strive to make specific connections with students, as the presence of at least one caring adult has the potential to make a significant difference in a child's life (Hupfeld, 2010; Repetto, Cavanaugh, Wayer, & Liu, 2010). Teacher-student interactions can be powerful exchanges that can increase the

likelihood of a student's success or failure (Demaray & Malecki, 2002). CICO increases student-teacher interactions multiple times per day and has the potential to increase student success by strengthening the teacher-student relationship.

Summary

Virtual schools have expanded the continuum of school choice for parents, allowed accessibility to different educational options in rural areas, increased flexibility of schedules, minimized disproportionality, lowered costs, and introduced alternative career opportunities for educators in the United States (Barbour, 2011; Cavanaugh, 2010; Clark & Berge, 2005). The growth of virtual schools has far outpaced the research conducted in this area; only minimal research examining behavioral interventions in virtual schools exists (Barbour, 2011). However, virtual behavioral interventions being offered in other fields (e.g., ABA) have had promising results (Paxling et al., 2011; Pugh, et al., 2014; Vismara et al., 2013; Wacker et al., 2013).

In order for virtual schools to be accessible to all learners, there must be additional monitoring and supports built into virtual programs. In addition to teaching course content, teachers should implement interventions that teach students how to engage and remain on task in virtual and in face-to-face environments (Roblyer & Marshall, 2002-2003). Grabinger, Aplin, and Ponnappa-Brenner (2008) affirmed that research-based accommodations for all students should be readily available in the school rather than expecting students and parents to assume responsibility for determining

appropriate accommodations. Virtual accommodations and interventions, (e.g., CICO) should be available and flexible enough to support the needs of a wide range of typical and atypical learners.

Research has demonstrated that face-to-face delivery of CICO is effective in schools and alternative settings. CICO has been associated with reductions in problem behavior and increases in prosocial behavior (Filter et al., 2007; Hawken, 2006; Hawken & Horner, 2003; Hawken, et al., 2007; McCurdy Kunsch, & Reibstein, 2007; Mong et al., 2011; Simonsen, 2011; Todd et al., 2008). CICO can also be delivered with fidelity in school settings using typical personnel and has high social validity ratings from student, family, and teacher participants. This strong literature base, coupled with the potential effectiveness of other virtual behavior interventions, support investigating CICO as a promising option for virtual school students and provide rationale for the current study.

The current study investigated the following two research questions:

1. Can CICO be modified to provide Tier 2 behavioral supports to students with disabilities in an online setting?
2. Can virtual CICO increase the frequency of on task behavior for students with disabilities during academic routines in a virtual setting?

CHAPTER III

METHODS

This study used a single case multiple baseline design to investigate the efficacy of CICO in a virtual setting. Multiple baseline designs allow researchers to collect and evaluate multiple sets of data under different conditions (e.g., baseline and intervention; Cooper et al., 2007; Kazdin, 2011; Miller, 2006). In a traditional multiple baseline design, the intervention is implemented in a staggered fashion across participants, behaviors, or settings (Richards, Taylor, & Ramasamy, 2014). Repeated, staggered implementation of the intervention can demonstrate if there is a functional relationship between the independent variable (IV; i.e., the intervention) and the dependent variable (DV; Cooper et al., 2007; Miller, 2006).

Setting

The current study was conducted in a full-time virtual school in the southern United States that implemented a SWPBIS framework. At the time of the study, the school had approximately 6,421 students who attended school fully online. There were 49 special education teachers and 212 general education teachers who provided asynchronous and synchronous supports and activities to students. Synchronous activities occur in real time and require attendance at a specific time. Asynchronous activities allow students to log in at their convenience. The virtual school's student population was 32% Hispanic, 48% white, 3% Asian/Pacific Islander, 15% African American and 1% other. Twenty-four percent (i.e., 1541) of the students in the school had an identified disability;

14% received special education services under IDEA and 10% were serviced under Section 504 of the Rehabilitation Act of 1973.

Participants

Four students who attended this virtual school full-time (i.e., receiving 100% of their classes online) participated in the study. These four students were selected because they met the following inclusion criteria: they (a) received supports under IDEA (i.e., were eligible for special education); (b) were identified by staff members as being unresponsive to the school's Tier 1 behavior supports; and (c) were secondary students in grades 6-12. The virtual school indicated support for the study and the Institutional Review Board (IRB) at Texas Woman's University approved the study.

The virtual school's teachers, administrator, and behavior coordinator were asked via email to identify students who could be potential candidates for the study (i.e., students who met the aforementioned criteria). Once 18 students were identified, I sent consent forms to parents via email and made a follow-up phone call to each parent to answer any questions about the study. All parents were told that only four to six students would be selected to participate in the study, but after all data collection was completed, any non-selected student could access the intervention. After obtaining parental consent, I used the website Random.org to randomly select six participants from the 18 identified. I attained written assent from four students and two students declined to participate (see students'

demographic data in Chapter 4). Other study personnel included a CICO advisor, the school's teachers, and data collectors.

Other Study Personnel

CICO advisor. The CICO advisor was appointed by the school administrator. This person was responsible for management and implementation of the intervention (i.e., CICO; the details of the intervention process are described below) on a daily basis. The CICO advisor established rapport with both students and teachers, coordinated the check-in and check-out processes, entered daily point card data, organized student data for meetings, and served as the contact person for teachers, parents, and students participating in CICO. Attempts to establish rapport included activities such as sending notes of encouragement on asynchronous class days, embedding student's interest in conversations during meetings, and sharing personal interests.

Teachers. Teachers completed participating students' point cards on a daily basis and attended a 45-min training session that included a brief discussion to verify the definition of on-task behavior in the virtual environment. I conducted this training session prior to the implementation of the intervention.

Data collectors. Data collectors were two school-appointed individuals and the principal investigator. Data collectors conducted observations in the virtual classrooms at least twice weekly.

Procedures

After participating students were selected and parental consent and student assent were obtained, I attended two synchronous classes of each participating student in his or her virtual environment to observe the students and validate the operational definition of on-task behavior. Attending synchronous classes requires students to log into the Online Learning System (OLS; this school used the Blackboard OLS platform for course delivery) at a specific time and click on a specific course; this click brings the student into a live Blackboard classroom. The Blackboard classroom had a two-way interactive interphase with video, audio, recording, and screen sharing options. After attending classes, I conducted the 45-min training with the teachers of the student participants during one of the teachers' regular staff meetings. During the training session, we operationally defined on-task behavior and I trained teachers on (a) the use of the point card and (b) how to provide specific feedback to students.

Training

All student and adult participants participated in general CICO training as well as training in their specific roles. Training scripts (see Appendices F-I) for all trainings were adapted for the online environment from Crone et al.'s (2010) CICO training checklists. Teachers and the CICO advisor used the training scripts as a checklist to ensure the intervention was implemented with fidelity.

Teacher training. Teachers were trained during a regularly scheduled virtual staff meeting before the start of the study. The training script and checklist (see Appendix I) were used to train teachers on their role and a copy of the checklist was given to teachers at the end of the training as a reference for procedural integrity. Training was scheduled to last 45 min, but was extended to 68 min due to questions and practice sessions taking longer than anticipated. Teachers were trained to (a) access the daily point card, (b) privately communicate with students to review the points earned, (c) provide specific feedback on their on-task behavior in class, and (d) assign points on the point card. We agreed on the definition of on-task behavior and I provided teachers with the written operational definition. Before the conclusion of the training sessions, I gave teachers the opportunity to practice the CICO steps and ask any questions they had.

CICO advisor training. I provided the CICO advisor with one 60-min virtual training prior to the start of the study. This training focused on how to check in students, check out students, complete the Student Record Form (see Appendix H) in Google Sheets, and provide specific feedback to students. Check-in training addressed how to (a) initiate contact with students and build a rapport with students, (b) access and review the point card from the previous day, (c) provide a new electronic point card, (e) discuss the point goal for the day, (f) provide specific feedback, and (g) complete the CICO Student Record Form in Google Sheets during check-in. Check-out training addressed how to (a) electronically access the daily point card; (b) provide specific feedback on daily

performance; (c) calculate percentage of points earned by adding up the total number of points earned, dividing by the number of points possible, and multiplying by 100; (d) determine if the point goal had been met using the percentage of points earned; (e) allow student to choose a reward if point goal was met; and (f) give parents electronic access to the daily point card. At the end of the training session, the advisor was given the opportunity to practice. I gave the CICO advisor checklists to assist with daily check-in and check-out.

Student training. Virtual training for student participants was conducted individually after each participant's baseline since the multiple baseline design requires each participant to begin the intervention in a staggered fashion; that is, each participant receives the intervention only after the previous participant's intervention data show some stability and after a minimum of three observations in the intervention phase. During training, student participants were given a preference assessment to identify preferred activities and items; the assessment asked open-ended questions about preferable rewards (Cooper et al., 2007). When students exhibited difficulty naming school-appropriate rewards, they were provided a list of possible rewards already incorporated in the school setting (e.g., free assignment passes, electronic stickers, leading morning or afternoon announcements) and asked to select those they preferred. In addition, students were trained on the general processes of CICO (described below).

Data collector training. Data collector training was the only training session conducted face-to-face. During the 90-min training session, I introduced data collectors (who were paraprofessionals in the virtual school) to the definition of on-task behavior in the virtual classroom, the different elements of the observation form, and how to record their observations.

Paraprofessionals viewed pre-recorded synchronous class sessions to simulate data collection as it would occur in the study. During the training, data collectors received an example of the data collection tool, had the opportunity to practice using it, and were able to compare their observation results with others to determine interobserver agreement (IOA). IOA is the degree to which two or more observers report the same observed values after measuring the same event. IOA is computed by taking the number of agreements between the independent observers and dividing by the total number of agreements plus disagreements (Cooper et al., 2007). Data collectors needed to achieve 85% or better prior to beginning data collection for the study when viewing the pre-recorded sessions. Data collectors were taught to use a clock, watch, or timer in order to keep track of the 10s intervals for whole interval recording during observations. Data collectors indicated if students were on-task (according to the definition developed during the teacher training meeting) for the duration of each 10s interval observed. IOA data were also collected on student behavior for 36 % of live sessions during the intervention phase of the study. During the study, a periodic review of the operational

definitions utilized in the study and additional practice sessions were available in case IOA fell below 85%. While practice sessions were not utilized (since IOA consistently averaged 85%), data collectors did participate in three brief impromptu meetings to review the operationalized definitions and discuss scenarios. This review occurred three times during the study.

Baseline

During baseline, direct observations of each student participant's on-task behavior were conducted for 15 min twice a week using 10s whole interval recording. Data collectors were set up with administrator viewing privileges in the OLS when conducting observations. All baseline observations were conducted by the data collectors and me.

All students' baseline phases began at the same time in accordance with standard multiple baseline design protocol. For the first participant, baseline data were collected until a stable pattern of behavior was observed (across a minimum of three data points). Then, I trained the first participant and implemented CICO (i.e., beginning the intervention phase for the first participant) while the baseline phase continued for all other participants. After intervention data indicated a stable pattern (across a minimum of three data points) for the first participant, CICO was implemented with the second participant. This process was repeated until all four students entered the intervention phase.

Independent Variable (CICO)

Check in. For students, the daily CICO intervention consisted of a morning meeting with the CICO advisor, midday progress meetings with at least two classroom teachers, an end-of-the-day meeting with the designated CICO advisor, and a daily communication (shared electronically) with the guardian of the student. The morning meeting consisted of a brief (i.e., not to exceed 5 min) phone call from the CICO advisor to the student to check in with the student and provide the student with electronic access to his or her daily point card (described below). The morning meeting was an opportunity for the student to have a brief positive interaction with school staff before the start of the day. For example, the advisor could say, “You did a great job of following directions and completing classwork yesterday. Keep up the good work!” The advisor would then provide the daily point card and remind the student of the expected (i.e., appropriate) behaviors. Students were expected to participate in the phone call and access the daily point card.

Teacher feedback. During the school day, classroom teachers provided participating students with scheduled specific feedback on their on-task behavior via instant messenger (IM); points were recorded on students’ daily point card. Teacher feedback occurred during natural transitions throughout the school day. Specifically, the teacher gave positive, specific praise for appropriate behavior, provided corrective feedback if applicable, and then assigned a score of 0, 1, or 2 points on the daily point

card (see Appendix J). A score of 0 indicated the goal for that class period was not met. A score of 1 indicated that the goal was partially met and a score of 2 indicated that the goal was met.

Check-out. Students were assigned a check-out time at the end of the school day. During check-out, the CICO advisor talked with the student via telephone or Skype chat about his or her day and totaled the points on the point card. The CICO advisor gave specific feedback to the student about the day's performance. During check-out, the CICO advisor and student determined if each student (a) met his or her goal and (b) accrued enough points to be awarded the item(s) determined in the preference assessment. If a point goal was not met, the advisor would provide re-teaching of the target behavior.

Progress monitoring. The CICO advisor entered percentage points earned by each student into a Student Record Form (i.e., an electronic document used to document CICO attendance and daily percentage points earned) every day during check-out. The data were reviewed periodically with the behavior team and the student's teachers to assist with making decisions related to each student's behavior. For example, if a student's off-task behavior increased or grades begin to decline during the intervention period, the behavior team would discuss additional interventions or consider dismissing the intervention. All students were aware of this regular review of data.

Daily point card. The daily point card (DPC) was the electronic document on which students received feedback and could earn points up to 10 points per day for targeted behaviors; the DPC could be shared and updated electronically. Students and parents had read-only access; teachers had editing privileges. The DPC provided four opportunities throughout the day for the student to receive feedback and earn points for expected behaviors: check-in (i.e., morning meeting), check-out, and two other specific times based on existing transitions for each student. When the DPC was updated, the student received an instant message (IM) from the teacher that included feedback. The students were able to exchange their daily points for predetermined reinforcers. During this study, school staff were not given additional directives or training on how to address problem behaviors.

Fidelity of implementation. The CICO advisor and teachers were given a checklist of the steps needed to effectively implement the intervention (see Appendix L for the procedural fidelity checklists). Data were collected on the occurrence or nonoccurrence of each step of the procedural fidelity checklist during intervention conditions for each student. Data were not collected during baseline or maintenance as the intervention was not delivered during these conditions. A procedural checklist was completed three times daily during live classes when CICO could be implemented. There was a four-step checklist for check in, a four-step checklist for check out, and a four-step

checklist for teacher feedback. When this self-reported measure rated below 85%, personnel would be required to be retrained. No retraining took place during this study.

Maintenance

The purpose of the maintenance phase was to assess the students' behavior when the intervention was removed. Students were not able to leave intervention and enter maintenance until data were considered stable in the intervention phase with a minimum of three data points. The procedures for maintenance included direct observations of each student participant's on-task behavior and problem behaviors conducted for 15 min for a minimum of two sessions using 10 s whole interval recording. Teachers also continued to record points on students' daily point card. However, students were not informed of their scores or given specific feedback regarding goals.

Dependent Variables

Data on two dependent variables (DVs) were collected. The primary DV, on-task behavior, was measured by calculating the percentage of intervals in which students exhibited on-task behaviors during each 15-min observation. Observers used 10s whole-interval recording to determine an estimate of students' on-task behavior throughout all phases of the study. Some on-task behaviors in a virtual school environment are similar to on-task behavior in a traditional school setting. On-task behaviors included behaviors such as using materials appropriately (e.g., cameras, microphones, messaging), following directions, and working on the assigned lesson. However, "on-task" in a virtual school

can also look different from “on-task” in a traditional school. For instance, texting or using instant messaging to ask questions of teachers and other students is encouraged in a virtual school.

Data collectors used their administrator viewing privileges in the OLS to conduct observations. This access allowed data collectors to view the screens of the student participants the data collectors were observing. The data collector was able to see everything the student was doing, including what the student was typing, with whom the student was communicating, if the student’s microphone was enabled, and on which tasks(s) the student was working. Data collectors observed each student participant for 15 min two times a week; these observations occurred when the student was in classes designated for observation.

The secondary DV in the study was students’ daily point card totals. While daily point card totals could not be compared between baseline and intervention phases (since students do not receive them until they are in the intervention phase), the totals were examined for any changes in level or trend throughout the intervention and maintenance phases of the study.

In addition, a social validity survey was given to the teachers and the students who participated in the study. Cooper et al. (2007) define social validity as a multi-faceted construct that includes consideration of the extent to which behaviors targeted for change were appropriate, intervention procedures were acceptable, and meaningful

changes in behavior occurred. At the end of the study, teachers completed the teacher version of the Teacher Check-In Check-Out Social Validity Questionnaire (Crone et.al., 2010). The seven-item checklist solicited the teacher's perceptions of the decrease in problem behavior, increase in on-task behavior, ease of implementation, and whether they would recommend the intervention to others. The checklist was scored using a 6-point Likert scale (1= *strongly disagree*, 6= *strongly agree*). At the end of the study, the student participants also completed a questionnaire to assess their perception of the CICO program. The eight-item questionnaire assessed the participants' perception of teacher interactions, the daily report card, earning points and reinforcers, and if they would want to continue using CICO in the classroom.

Data Analysis

Data were visually analyzed and descriptive statistics (i.e., mean, mode, variance) for social validity and fidelity of implementation measures were calculated. Visual analysis was performed on behavior measures by plotting each student's data on a graph, examining those data, and making judgments about whether and to what extent the independent variable (represented by the x -axis) had an effect on the primary dependent variable (denoted on the y -axis of the graph; Miller, 2006). The data on students' on-task behavior were visually analyzed for changes in level, trend, and latency within and between the baseline and intervention phases (Miller, 2006; Richards et al., 2014). Level refers to the absolute value of an observed behavior or performance during a phase

(Miller, 2006). Trend is determined by analyzing the direction of the data path; it examines the gradual increase or decrease of the DV across observations (Richards et al. 2014). Latency refers to the time it takes for the DV to change after a change in conditions and/or intervention (Miller, 2006). Visual analysis can indicate a functional relation between the introduction of an intervention and increases or decreases in observed behaviors.

Descriptive analysis was performed on measures of social validity and fidelity of implantation data. This type of analysis is commonly used to measure attitudes in social surveys like Likert scales (Dittrich, Francis, Hatzinger, & Katzenbeisser, 2007). Likert scales, like the ones used to measure social validity and fidelity of implementation in this study, rely primarily on simple low-inference, low assumption processes that use no or minimal statistical techniques such as measures of central tendency (such as mean, median, and mode) and measures of variation (such as range and standard deviation) that occur on a linear continuum (Dittrich et. al., 2007). For the social validity measures, each specific question was presented separately and then summed with other related items to create a score for a group of statements for both teacher and student responses. For fidelity of implementation, checklists were collected for all days on each participant. Scores were rated as percentages and then summed with other related items to create a score for a group of statements.

Interobserver Agreement

Researchers have identified methods for enhancing the believability of data that involves comparing independent observations from two or more people of the same events (Cooper et al., 2007; Primavera, Allison, & Alfonso, 1997). The most common of these procedures is interobserver agreement (Skinner, Dittmer, & Howell, 2000). Interobserver agreement (IOA) was measured by having two independent observers collect data concurrently.

Summary

This study used a single case multiple baseline design to examine the effectiveness of CICO in a full-time virtual school setting. Data were collected on participants' on-task behavior, daily point totals, IOA, fidelity of implementation, and the social validity of the intervention (from both the students' and the teachers' perspectives). Results are discussed in the next chapter.

CHAPTER IV

RESULTS

The current study investigated the effects of CICO on student on-task behavior in a full-time virtual school in Texas. This chapter reports the results from the study, including (a) demographic data, (b) dependent variable data, (c) fidelity of implementation data, and (d) social validity data.

Participant Characteristics

The age of the four participants in this study ranged from 12 to 15 years old. Two students were in middle school and two were freshmen in high school. All participants (a) had attended the virtual campus for two or more years, (b) were students with disabilities who participated in the school's special education program, (c) were identified as students with disabilities prior to enrolling in the virtual school, and (d) were native English speakers.

Journey was a 12-year-old Caucasian female student in the sixth grade. She met the criteria for special education services in the categories of Specific Learning Disability (SLD) and Other Health Impairment (OHI) due to ADHD. At the time of the study, Journey had been enrolled in the virtual school for three academic years. She was found eligible for special education 1 month before she enrolled into the virtual school. She had no history of retention.

Audwin was a 15-year-old Caucasian male student in the eighth grade. He met the criteria for special education services in the category of Emotional Disturbance (ED). Audwin was homeschooled until sixth grade, when he started at the virtual school. He was placed in the special education program just weeks before the start of the study; previously, he was receiving supports via a 504 plan. Audwin was retained in the first grade.

Anthony was a 15-year-old Caucasian male student in the ninth grade. He met the criteria for special education services in the categories of OHI and speech impairment (SI). Anthony attended the virtual school for two academic years prior to the start of the study and had received special education supports since third grade. He was retained in seventh grade.

Mark was a 14-year-old Caucasian male student in the ninth grade. He met the criteria for special education services in the category of SLD. Mark attended the virtual school for four academic years. Mark had been receiving special education supports for two years and had been receiving services via a 504 plan since first grade. He had no history of retention.

Primary Dependent Variable Data

Data were collected on on-task behaviors two days per week during synchronous classes for approximately 11 weeks. On-task behaviors were defined as responding to polls and teacher questions when called upon, contributing to discussion with on-topic comments, working on assignments, following appropriate teacher direction within 10s,

using appropriate emoticons and feedback tools and when participating in discussions, taking control of the application screen sharing tool to share on-topic information, participating when asked, using materials appropriately (e.g., cameras, microphones, messaging and/or appropriately requesting assistance from the teacher regarding assigned tasks). See Figure 1 for each participant's performance.

Journey. Visual analysis of Journey's data indicated an immediate change in the level on task behavior with an upward trend when the CICO intervention was implemented. Across Journey's four baseline observations, her mean percentage of intervals for on-task behavior was 9.25%. Across her 11 observations during the intervention phase, Journey's mean percentage of intervals with on-task behavior was 85.8%. Visual analysis of the data indicated no change in level or trend in on task-behavior when Journey entered the maintenance phase. Across her seven observations during the maintenance phase, Journey's mean percentage of intervals with on-task behavior was 80.15%.

Audwin. Visual analysis of Audwin's data indicated an immediate change in the level of on-task behavior and an upward trend when the CICO intervention was implemented. Across Audwin's eight baseline observations, his mean percentage of intervals with on-task behavior was 20.87%. Across his eight observations during the intervention phase, his mean percentage of intervals with on-task behavior was 83.14%. Visual analysis of the data indicated a gradual change a downward trend in on task-

behavior when Audwin entered the maintenance phase. Across his seven observations during the maintenance phase, Audwin's mean percentage of intervals with on-task behavior was (76.5%).

Anthony. Visual analysis of Anthony's data indicated an immediate change in level of on-task behavior and an upward trend in when the CICO intervention was implemented. Across Anthony's 14 baseline observations, his mean percentage of intervals with on-task behavior was 6.5%. Across his four observations during the intervention phase, his mean percentage of intervals with on-task behavior was 89.75%. Visual analysis of the data indicated an immediate change in the level of on-task behavior and a downward trend when Anthony entered the maintenance phase. Across his three observations during the maintenance phase, Anthony's mean percentage of intervals with on-task behavior was 33%.

Mark. Visual analysis of Marks' data indicated a change in the level of on-task behavior and an upward trend before the CICO intervention was implemented. During Mark's 17 baseline observations, his mean percentage of intervals with on-task behavior was 72.95%. Across his three observations during the intervention phase, his mean percentage of intervals with on-task behavior was 75.66%. Visual analysis of the data indicated no change in the level of on-task behavior when Mark entered the maintenance phase. Across his two observations during the maintenance phase, Mark's mean percentage of intervals with on-task behavior was 79.5%.

Secondary Dependent Variable Data

Data were collected on percentage of daily points earned by students by recording points on daily point cards (DPCs) across intervention and maintenance phases. DPCs provided four opportunities throughout the school day for the student to receive feedback and earn points for expected behaviors: check-in (i.e., morning meeting), check-out, and two other specific times based on existing transitions for each student. DPCs were collected from students for a range of 5 to 18 days on which synchronous sessions were available. See Figure 2 for each participant's performance.

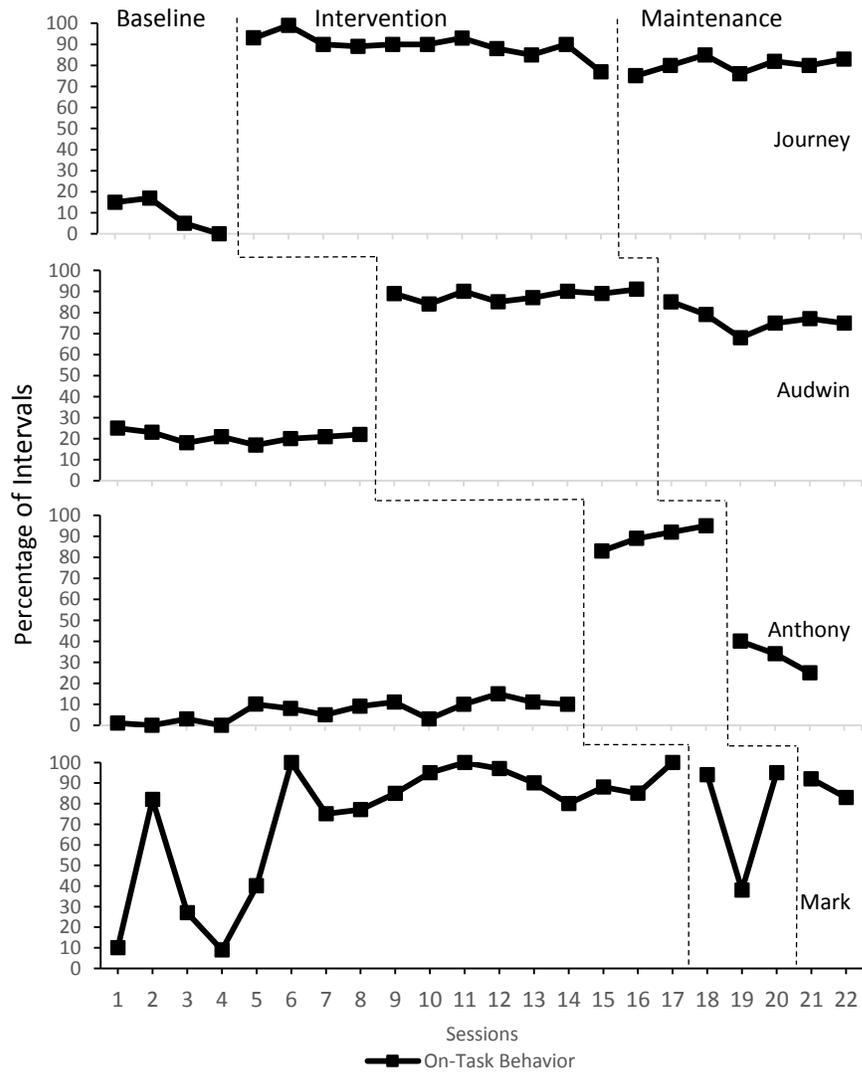


Figure 1. On-task behaviors. This graph shows data on the primary dependent measures across baseline, intervention, and maintenance phases, which was percentage of behaviors displayed during intervals for all participants.

Journey. Visual analysis of the data indicated no immediate change in the level of daily points earned and zero trend when Journey entered the maintenance phase and left intervention. During Journey's intervention phase, her mean percentage of daily points earned was 89.63%. During the maintenance phase, her mean percentage of points earned was 81.42%.

Audwin. Visual analysis of the data indicated an immediate change in the level of daily points earned and downward trend directly before Audwin entered the maintenance phase and left intervention. During Audwin's intervention phase, his mean percentage of points earned on the DPC was 88.33%. During the maintenance phase, his mean percentage of points earned on the DPC was 37%.

Anthony. Visual analysis of the data indicated an immediate change in the level of daily points earned and downward trend when Anthony entered the maintenance phase and left intervention. During Anthony's intervention phase, his mean percentage of points earned on the DPC was 80%. During the maintenance phase, his mean percentage of points earned on the DPC was 42.5%.

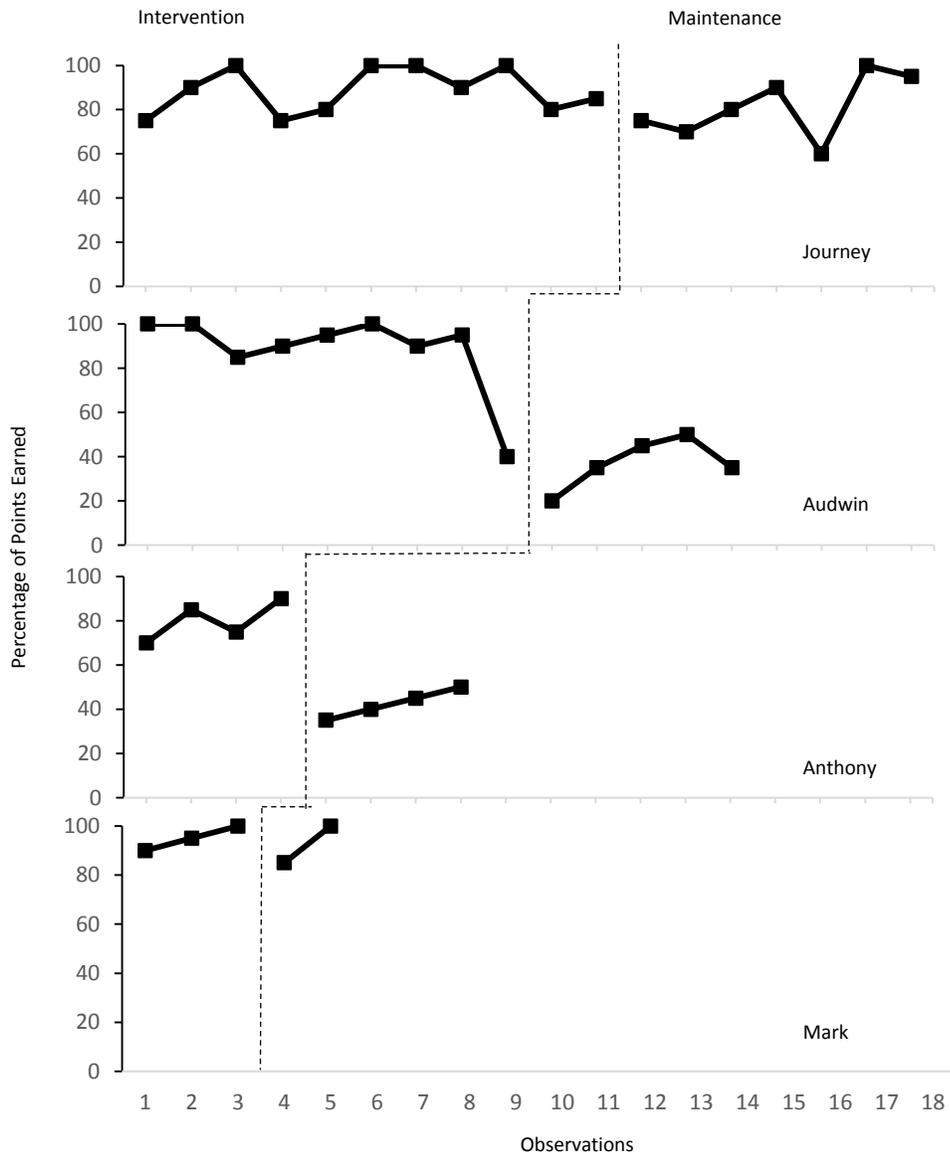


Figure 2. DPC card totals. This graph shows data on the secondary dependent measures across intervention and maintenance phases, which was percentage of daily points earned on a daily point card for all participants.

Mark. Visual analysis of the data indicated an immediate change in the level of daily points earned and an upward trend when Mark entered the maintenance phase and left intervention. During Mark's intervention phase, his mean percentage of points earned on the DPC was 95%. During his brief maintenance phase, his mean percentage of points earned on the DPC was 92.5%.

Fidelity of Implementation Data

Data were collected on the implementation of each of the four steps of CICO across all students as a self-report measure by teachers and the CICO advisor. A percentage was calculated for implementation fidelity by using the following equation: the number of components implemented divided by the total number of components that could be implemented, multiplying that product by 100. The overall mean for each component was then determined. CICO was implemented with high fidelity. Teachers rated their fidelity of implementation of CICO in the range of 95% - 100% and the CICO Advisor rated their fidelity of implementation of CICO in the range of 92% - 100%. Appendix L reflects the results.

Social Validity

At the conclusion of the study, the CICO advisor, two teachers, and the four student participants were asked questions related to the intervention using two different questionnaires.

CICO advisor and teachers. One six-item checklist solicited the CICO Advisor's and teachers' perceptions of the decrease in off-task behavior, increase in on-

task behavior, ease of implementation, and whether they would recommend the intervention to others through six questions. The checklist was scored using a 6-point Likert scale (1= *strongly disagree*, 6= *strongly agree*). The overall mean for the CICO Advisor and teachers was 5.25. See Appendix O for individual responses to each question.

Students. The students' questionnaires consisted of an eight-item checklist to solicit the students' perceptions of the intervention. The checklist was scored using a 6-point Likert scale (1= *strongly disagree*, 6= *strongly agree*). The overall mean for students was 4.25. See Appendix P for individual responses to each question.

Inter-Observer Agreement

IOA occurred for 36% percent of the observations across all participants. IOA across all intervals was 97.1% with a range of 93.3-100%.

Summary

Data were collected to determine if there was a functional relationship between CICO and students' on-task behaviors in a virtual school environment. Three of the four student participants experienced increases in on-task behaviors and decreases in off-task behaviors when CICO was implemented. The fourth student's on task behavior increased before the implementation of the intervention; while no one at the school reported the implementation of an intervention for this student prior to CICO, that change in behavior is likely related to an environmental event outside of the control of the study. All teachers

and three participants gave CICO high social validity ratings related to ease of implementation and whether or not they would recommend the intervention to others.

CHAPTER V

DISCUSSION

This chapter presents a summary of the research findings, implications for practice, limitations, and recommendations for further research. The primary purpose of this study was to evaluate the effectiveness of CICO with students enrolled in a full-time virtual school. I was not able to locate any existing studies evaluating CICO in a virtual school setting. This multiple baseline design was conducted entirely online using platforms available to virtual school students and personnel.

Results of this study indicated a functional relationship between CICO and on-task behavior for three of the four participants (i.e., on-task behavior increased when CICO was introduced). Concurrent decreases in problem behavior were also observed. These results are similar to prior studies that showed CICO was effective in reducing problem behaviors in alternative school settings (Ennis et al., 2012; Swoszowski et al., 2012). These results also align with results of studies focused on behavioral supports outside of the school setting (e.g., applied behavior supports, e-therapy) delivered virtually (Paxling et. al., 2011; Postel et. al., 2011; Pugh et. al., 2014).

The findings from the current study indicate that CICO may be a viable option to support students' behavior in a virtual school. The findings may also assist virtual school staff in recognizing that virtual programs can accommodate the needs of all students by showing that interventions can be implemented with fidelity and are likely to be acceptable to students and teachers.

Research Question 1

The first research question examined if the prescriptive steps of CICO could be modified to provide Tier 2 behavioral supports to students with disabilities in an online school setting. The current study demonstrated that existing elements of CICO could be modified to allow for online implementation without compromising any components of the CICO process. All tools and documents were adapted to be electronically accessible and were altered minimally, if at all. In addition, fidelity of implementation data (see Appendix L) indicate that CICO can be implemented with fidelity in a virtual setting. CICO was implemented with high fidelity with an overall mean of 97% for teacher implementation, an overall mean of 96% for check-in advisor procedures, and an overall mean of 99% advisor check-out procedures.

Many published CICO studies used permanent products (i.e., completed CICO forms) to evaluate fidelity. Sheridan, Swanger-Gagne, Welch, Kwan, and Garbacz (2009) found that permanent products and self-reported measures both produced valid measures of fidelity of implementation. Fidelity of implementation is important when assessing the effectiveness of an intervention because the changes in the dependent variable cannot be attributed to the intervention if procedures are not implemented as prescribed (Gresham, 2009). Adequate fidelity of implementation is important when considering if an intervention can be carried out in a school setting (even a virtual school setting!) because student outcomes improve when an intervention is delivered as intended and student

outcomes can be negatively impacted when interventions are not carried out with fidelity (Harn, Parisi, & Stoolmiller, 2013).

Fidelity of implementation results for this study are consistent with the many studies of CICO that have demonstrated that regular school personnel can successfully implement CICO (Campbell & Anderson, 2008; Campbell & Anderson, 2011; Ennis et al., 2012; Fairbanks et al., 2007; Filter et al., 2007; Hawken et al., 2007; Hawken et al., 2011; Lane et al., 2011; McIntosh et al., 2009; March & Horner, 2002; Mong et al., 2011; Simonsen et al., 2011; Todd et al., 2008).

Research Question 2

The second research question examined if virtual CICO could increase the frequency of on-task behavior for students with disabilities during academic routines in a virtual setting. Figures 1 and 2 show the percentage of DPC totals and percentage of observed intervals with on-task behaviors. Data indicate a functional relationship between CICO and on-task behavior for three out of the four student participants. These findings are consistent with previous research indicating that in addition to teaching academic content, teachers can teach students how to engage and remain on task (Roblyer & Marshall, 2003). The current study's results are also consistent with previous research indicating that CICO is associated with reductions in problem behavior (Filter et al., 2007; Hawken, 2006; Hawken & Horner, 2003; Hawken et al., 2007; McCurdy et al., 2007; Mong et al., 2011; Simonsen, 2011; Todd et al., 2008).

Social Validity

The results from the Teacher Check-In Check-Out Social Validity Questionnaire and Student Teacher Check-In Check-Out Questionnaire (Crone et. al., 2010) indicated that participants were generally satisfied with the intervention. Mean scores for teacher and advisor responses ranged from 4-6 for teachers and from 2.75-5.25 for students. Student scores were lower because Mark rated many of the areas on the questionnaire as a 1. Data did not indicate a functional relationship between CICO and Mark's behavior, and while he did not think CICO was a good use of his time or easy to implement, he did give a high rating when asked if he would recommend this program to other students.

Limitations

There are several limitations to the current study. The first limitation is the low number of students participating in the study, leading to limited potential for generalization of results. Researchers indicate that when using a single subject design, three to eight participants are sufficient to test hypotheses (Gillis & Butler, 2007). Therefore, having four participants was within the minimum number of participants required. However, studies using a larger sample size are warranted to provide support for these findings (Kazdin, 2011).

A second limitation is that data support a functional relationship between the implementation of CICO and on-task behavior for only three of the four participants. The fourth student's on-task behavior increased before the implementation of CICO and was likely related to an environmental event outside of the study. No one at the school (nor

the student) reported the implementation of any intervention for this student prior to the implementation of CICO. Had the functional relationship existed for all four participants, internal validity for this study would be more robust and results could have been generalized more reliably to other populations.

The third limitation also relates to generalizability of the findings. Three out of four participants were Caucasian males (and the fourth was a Caucasian female) with an average age of 14. Researchers should seek to include students of diverse backgrounds, cultures, and ages as participants in future studies of interventions like CICO in a virtual setting.

Another limitation of this study pertains to validity and reliability of the data collected. Due to time limitations, some phases of intervention and maintenance were shortened. Although stability in data patterns were documented prior to changes between phases, extended collection of data within phases would strengthen confidence in the results. As this study was conducted in a virtual school setting, there was a limited amount of time for data collection and research due to the nature of the school schedule, which allows for limited interactions and observations. In addition, competing events (e.g., state assessments, end-of-the year activities, organizational/staff changes, etc.) presented obstacles to extended data collection.

When conducting applied research, any school setting poses unique challenges for researchers. In virtual schools, researchers must find accurate ways to measure the

observance of a behavior. Students in virtual schools are online in the comfort of their homes; therefore, it can be difficult to determine which behaviors are occurring due to external factors that would not otherwise occur in a school environment or due to lack of being able to see the student. For example, taking a long time to respond could be the result of careful consideration or reflection on the question or non-school-related factors such as an internet outage, hardware trouble, interference by family members, phone calls, or visitors.

The low number of IOA observations was also a limitation. IOA was only collected on 36% of the observations. More observations of inter-observer agreement during each of the conditions could have strengthened the study.

Lastly, measures to collect fidelity of implementation data could have been more robust. There was no measure of fidelity for the parent/home component of the procedure. Parents were given electronic access to the daily point card, but there was no verification or confirmation if they actually received it and reviewed it daily.

Future Directions for Research

Education is one of the most important aspects of any community, and providing support to a wide range of learners—not just the typical learner—is mandated by federal special education law and communities should provide access to multiple educational options. Interventions like CICO that include increased collaboration between the home and the school, increased contact between adults and students, and increased feedback about behaviors can provide additional and effective supports at different types of school

settings. The results of the current study contribute to the literature related to positive behavioral interventions and supports in virtual programs. Virtual schools are consistently growing and becoming part of the landscape of K-12 educational offerings (Barbour, 2011; Cavanaugh, 2010; Clark & Berge, 2005). Educating students requires both academic and behavioral supports that will allow all access to and success with the curriculum, so more research on effective interventions in virtual settings is imperative.

The United States Department of Special Education and Rehabilitative Services has indicated that students with disabilities in virtual programs are entitled to PBIS and all of the other tenets of IDEA (USDoEd, 2016). The current study represents a small step toward providing those services. Implementing effective behavioral interventions for students with disabilities in a virtual school environment is possible. However, the amount of research conducted in virtual schools for students with disabilities is still relatively low (Barbour, 2011; Carnahan & Fulton, 2013; Greer, et. al., 2014; Miron & Urschel, 2012; Toppin & Toppin, 2016). Therefore, more research should be conducted on both the behavior and academic performance of students with disabilities in virtual schools.

Results from the current study can help parents and the public understand how CICO is flexible and efficient enough to be successful in the virtual classroom. These findings may also help current and new virtual educators consider CICO and other interventions and supports likely to improve student outcomes for students with

behavioral difficulties. Current and new school administrators and teachers may consider CICO as a possible day-to-day support in virtual school settings. The findings from this study indicated that CICO was doable and effective, socially acceptable, and increased appropriate behavior for the participants. Other virtual school organizations could use this study as a model to investigate evidence-based interventions with the potential to improve and maintain on-task behaviors for their students. All school decision-makers must remember that students, parents, the United States Department of Education (and its Office of Special Education and Rehabilitative Services) and other educational stakeholders are demanding better supports for students with disabilities (Black et al., 2009; Greer et al., 2014; Mitchell et al., 2017 USDoEd, 2016).

Implications for Practitioners

This study provides important information about and an applied example of the implementation of CICO for school professionals in a virtual setting. In this study, school professionals implemented the components of CICO with fidelity (see Appendix L). The post-intervention survey elicited positive responses from school professionals and their students, indicating that CICO is a feasible secondary intervention in a virtual school setting. Existing staff implemented the intervention and the time devoted was minimal (see Appendix O). This research is timely in the aftermath of the United States Department of Education's "Dear Colleague" letter to virtual schools indicating that

students with disabilities are entitled to research-based supports just like their peers being educated in traditional brick and mortar traditional schools.

One important implication from this study is that school professionals must continue to examine the issue of how to provide behavioral support to students with disabilities in a virtual setting. Practitioners tend to lean on the traditional characteristics of virtual schooling (e.g., self-paced learning, flexible scheduling, etc.) to provide support to students with behavioral challenges in that setting (Kleiner et. al., 2002). This study provides an example of how an evidence-based practice that increases appropriate student behavior can be modified for implementation in a virtual setting – with promising results. The results of this study may prompt further research that can inform virtual school professional development programs, providing a basis for extending in-service teachers’ knowledge of school-wide positive behavior interventions and supports that are appropriately matched to the medium of instructional delivery.

Conclusion

The current study demonstrated the feasibility and potential benefits of implementing CICO for students with disabilities attending a full-time virtual school. Results suggest that CICO is a promising approach to managing behavior within virtual school settings, but the limitations of the study should be considered when evaluating the implications of the findings. Though the findings are promising, future research should

seek to replicate the study across larger and more diverse samples to evaluate the impact of CICO in virtual schools.

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Appendix A: IRB Letter



Institutional Review Board
Office of Research and Sponsored Programs
P.O. Box 423619, Denton, TX 76204-3619
940-898-3378
email: IRB@twu.edu
<http://www.twu.edu/irb.html>

DATE: August 4, 2017

TO: Ms. Jennifer Farmer
Teacher Education

FROM: Institutional Review Board (IRB) - Denton

Re: Approval for An Investigation of the Efficacy of Check In/Check Out as an Intervention for Students with Disabilities in Virtual Schools (Protocol #: 19600)

The above referenced study was reviewed at a fully convened meeting of the Denton IRB (operating under FWA00000178). The study was approved on 8/3/2017. This approval is valid for one year and expires on 8/3/2018. The IRB will send an email notification 45 days prior to the expiration date with instructions to extend or close the study. It is your responsibility to request an extension for the study if it is not yet complete, to close the protocol file when the study is complete, and to make certain that the study is not conducted beyond the expiration date.

If applicable, agency approval letters must be submitted to the IRB upon receipt prior to any data collection at that agency. A copy of the approved consent form with the IRB approval stamp is enclosed. Please use the consent form with the most recent approval date stamp when obtaining consent from your participants. A copy of the signed consent forms must be submitted with the request to close the study file at the completion of the study.

Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any adverse events or unanticipated problems. All forms are located on the IRB website. If you have any questions, please contact the TWU IRB.

cc. Ms. Linda Diane Myers, Teacher Education
Dr. Diane Myers, Teacher Education

Appendix B: Flyer for Participation



VOLUNTEERS NEEDED FOR RESEARCH

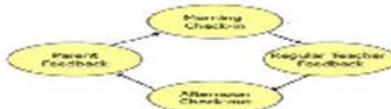
Who: Student participants in grades 6-10 are needed for research to examine if an intervention can increase on-task behavior in classrooms.

When: Fall semester 2017

Where: Your child's school

What: The student would be asked to participate in the check-in/check-out intervention that many students already participate in. Directly after participating, the student will be asked to complete a survey about the intervention.

More about the intervention: Check-in/Check-out is a collaborative intervention that provides students with adult attention and feedback on their behavior. It is a four step process. It consists of a morning check-in, teacher feedback between 3-5 times a day, an afternoon check-out, and parent feedback.



If you are interested, please contact:

Jennifer Farmer, M. S., Principal Investigator (PI)
jfarmer3@twu.edu
(940) 367-7352

THANK YOU!

Please know only a small number of students will be able to participate.

Appendix C: Parent Letter

Dear Parent(s),

I am a doctoral student at Texas Woman's University. I am conducting a study with your child's school to examine the benefits of providing an intervention named check in/check out (CICO) to determine academic and behavioral effects for students in a virtual program.

The CICO intervention allows for a check in and check out phone call daily, a point card to earn points for appropriate behaviors, a daily parent communication about behavior, and "rewards" contingent on appropriate behaviors. As part of the research, I will access attendance records, behavior records, point card data, and instant messaging records related to behavior only.

All information in the study is completely confidential. Your child's name, the school name, or your name will not be used in any report or presentation of the results of this study. Participation in the study will not have an impact on your child's grades. You may withdraw your child from participation in this study at any time without question or repercussion.

All procedures will be explained to your child as they are outlined in the attached Informed Consent Form. In order for your child to participate in the study, the attached Informed Consent Form must be signed and dated by you. Your child must also provide their assent in order to participate in this interview. Any question you have about this study can be answered by contacting me at 940-367-7352 or jfarmer3@twu.edu.

Thank you for your time,

Jennifer Farmer, M. S., Principal Investigator (PI)

jfarmer3@twu.edu

(940) 367-7352

Appendix D: Informed Consent

Title of Study: An Investigation of the Efficacy of Check in/Check Out as an Intervention for Students with Disabilities in Virtual Schools

Investigator: Jennifer Farmer, Special Education PhD students, Department of Teacher Education, Texas Woman's University (TWU)

Faculty Supervisor: Dianne Myers, PhD, Professor of Special Education, Department of Teacher Education, Texas Woman's University (TWU)

Your child is being asked to take part in a research study. Before you decide if she/he should participate in this study, it is important that you understand why the research is being done and what it will involve. Please read the following information carefully. Please ask the researcher if there is anything that is not clear or if you need more information.

Purpose

The purpose of this research study is to evaluate the effects of check-in check-out (CICO) in a full-time virtual K-12 school setting.

Procedures

Students were selected to participate based on being non-responsive to current behavioral supports. Office referrals, attendance, and teacher observations has been kept as a part of the current campus behavior program will be used in analyzing data.

Students who meet requirements for participation will take part in one training session to learn what the intervention is about and to explicitly teach what behavior expectations are of the school. The intervention period is expected to last a minimum of six weeks with each student participating a different number of weeks. At the end of the intervention period, the students will be asked to complete a survey about the intervention.

Risks

It is important that you are aware of the risks before providing consent. Risks include coercion, loss of anonymity and loss of confidentiality (which is described in the next section). Here's how we are minimizing the risks of this study:

- **Coercion:** Students may feel like they should participate in the study if asked. We will assure them (and you) that whether they participate or not will have no impact on their grades, their relationship with their teachers or administrators, or in any way affect their schooling
- **Anonymity:** There is a potential risk of loss of anonymity in all email, downloading, electronic meetings, and internet transactions. All participants will be given pseudonyms.

Confidentiality

Confidentiality will be protected to the extent that is allowed by law. All of data including point cards, training logs, instant messages, and discipline referrals will be kept confidential and no individual and/or identifying information

Page 1 of 2

will not be shared with others. All data will be stored in a locked cabinet in the principal investigator's office. Only the principal investigator listed above will have access and the data will be destroyed within one year of the date of collection.

Opportunity to Ask Questions

You may ask questions, before, during, or after this study by contacting Jennifer Farmer at 940-367-7352. If you have any questions concerning your child's rights as a research subject that have not been answered by the principal investigator or to report any concerns about the study, contact the Texas Woman's University Office of Research at 940-898-3378 or via e-mail at IRB@twu.edu.

Parent Signature

Date

Witness Signature

Date

Page 2 of 2

Appendix E: Assent Letter for Students

Title of Study: An Investigation of the Efficacy of Check-in/Check-Out as an Intervention for Students with Disabilities in Virtual Schools

Investigator: Jennifer Farmer, Special Education PhD students, Department of Teacher Education, Texas Woman's University (TWU)

Faculty Supervisor: Dianne Myers, PhD, Professor of Special Education, Department of Teacher Education, Texas Woman's University (TWU)

I am doing a research study about how to teach students about appropriate behavior in school. A research study is a way to learn more about a topic. If you decide that you want to be part of this study, you will be asked to check in every morning with an adult from the school, check out every afternoon with an adult from the school, and set goals to increase your appropriate behavior in the school setting. This information will be shared with your parent daily. Before starting, I will train you on how this works.

There are some things about this study you should know. Since we are completing everything via internet, you can possibly lose your confidentiality. There is always a risk when you are using the internet of losing your confidentiality. You are not the only student asked to participate in this study. Not everyone who takes part in this study will benefit. A benefit means that something good happens to you. Some possible benefits of this study are decreased discipline reports, increased work productivity, and access to preferred items (e.g. stickers, homework passes, etc.)

When I am finished with this study I will write a report about what was learned. This report will not include your name or that you were in the study.

You do not have to be in this study if you do not want to be. If you decide to stop after we begin, that's okay too. Your parents know about the study, too.

If you decide you want to be in this study, please sign your name. If you do not want to participate, do not sign and thanks for considering it.

I, _____, want to be in this research study.

(Sign your name here)

(Date)

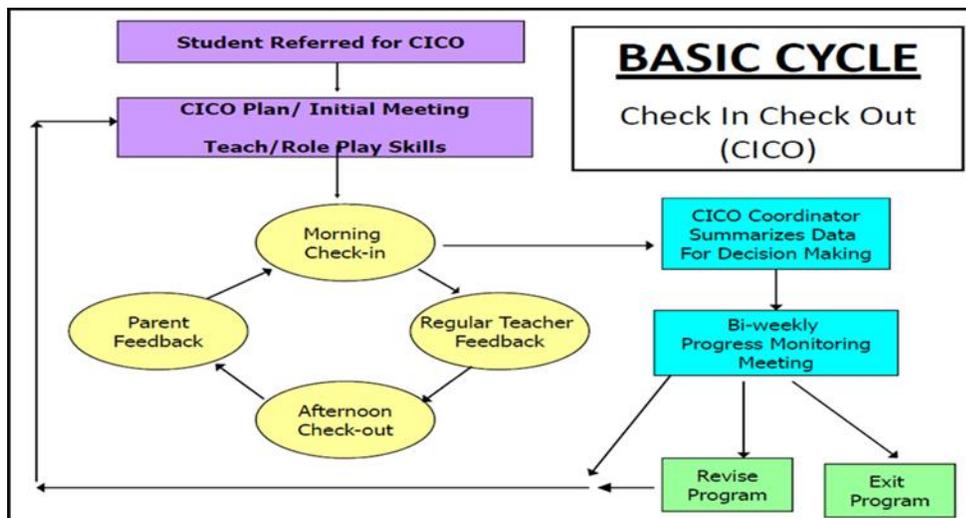
Appendix F: CICO Advisor Training Transcripts

CICO Advisor TRAINING SCRIPT

Distribute the Basic Cycle for CICO, the Integrity Checklist, Preference Assessment, and a sample daily point card before beginning the training.

Trainer: “Check in/Check (CICO) out is an effective collaborative intervention that provides students with adult attention and feedback on their behavior. Today, we are going to review the basics of CICO and discuss how we are going to implement CICO in the virtual environment.”

Trainer: “All participants should understand the fundamental components of Check-in/check-out prior to implementation. The success of a student depends on the fidelity of implementation. Infidelity can result in the lack of success for a student.”



Trainer: “Look at this graphic regarding the steps in the Check-in/Check-out process. What does it tell you about the process? How many steps are involved? Does this seem doable?”

****Address all questions****

Trainer: CICO is a four step process. It consists of a morning check-in, teacher feedback between 3-5 times a day, an afternoon check-out, and parent feedback. That’s it!”

Trainer: “CICO is a time-limited intervention. The hope is that students fade to self-management and exit through continuous improvement. Please know that this is a positive behavior support and is not meant to be punitive in anyway.”

Trainer: “Let’s review what should occur during a morning check-in.”

Trainer: “At the start of the school day, you will want to initiate contact with students at the agreed upon time. Greet the student and establish a rapport by asking an open-ended question that gets the student to open up and talk. Try to avoid questions that allow for one-word answers. You can ask about recent field trips, approaching STAAR tests, athletics, previous night’s events, etc.”

Trainer: “During the first meeting, you will not ask about the previous days point sheet, but if it is the second day or every day after, inquire about the previous day’s point card and request the signed version (using the same formats we use for e-ARDs). If the sheet has been signed, provide feedback and award a point. If not, encourage the student to obtain the signature if the parent is available. They will not earn a point for this.”

Trainer: “Now you should transition into school readiness. Talk about expectations for on-task behavior and remind the student about his or her goal points in order to access their rewards.”

Trainer: “At this time, you should give the student access to the new point for the day.”

Trainer: “After giving them access to the card, review their daily point goal. You can offer tips on how to meet their goal as well. For example, “Renita, your point goal for today is 50% or XX points.’ Yesterday, you had trouble remaining on-task in first period; so, remember to look at the teacher when she is talking and to complete your assignments.”

Trainer: “You will also want to give positive feedback for attending check-in, so you could say ‘I am so glad that you were available on the agreed upon time for check-in. This is a great start to the day. Good job! Do you remember what other behaviors will earn you a point?’ You will also assign a point for attending morning check-in.”

Trainer: “Remind the student about the point goal for the day again and see if they have any questions. After you address his or her concerns, release the student.”

Trainer: “Check-in is now complete. Be sure the CICO Student Record Form is completed in its entirety.”

Trainer: “Do you have any questions, comments, or concerns about check-in?”

****Address all questions****

Trainer: Time to practice.

****Practice until the CICO advisor is able to check-in a student without missing a step****

Trainer: “Let’s review what should occur during an afternoon check-out.”

Trainer: “At the end of the school day, the student will need to initiate contact with you at the agreed upon time.

Trainer: “Greet the student and access the electronic point card. Praise the student for attending check-out

Trainer: “Give specific praise about the day’s performance. You can say something like ‘You did a great job of following directions and completing classwork today. Keep up the good work.’ Provide a positive

response even if the student did meet their point goal or if they had a bad day. This experience should a positive adult-student interaction despite if the student met goal or not.”

Trainer: “Calculate percentage of points earned by adding up the total number of points earned, dividing by the number of points possible, and multiplying by 100. Determine if the point goal has been met. Then allow the student to choose a reward if point goal was met.

Trainer: “Type the percentage and points at the bottom of the point sheet and complete the Student Record Form.”

Trainer: “If a point goal is not met, then you should provide re-teaching of the target behavior.

Trainer: “If the point goal is met, distribute the reward from the preference assessment.

Trainer: “Lastly, provide access to the point goal to the parent and release student.”

Trainer: “Do you have any questions, comments, or concerns about check-out?”

****Address all questions****

Trainer: “Now, let’s practice using your Fidelity of Implementation sheet!”

****Practice until the CICO advisor is able to check-in a student without missing a step****

Appendix G: CICO Checklist
Check-In/Check-Out Advisor Checklist Duties

Morning Check-In

- Initiate Contact with Students at Agreed Upon Time;
- Issue Specific Praise for Check-In Attendance
- Establish Rapport and Ensure Student is Ready for Class;
- Obtain CICO Point Sheet from Previous Day & Give Praise if signed by Parent;
- Give Access to New CICO Point Sheet;
- Talk About Point Goal;
- Remind Student About Behavior Expectations
- Solicit Questions/Concerns from Student
- Release Student
- Complete Student Record Form

After School Check-Out

- Greet students
- Issue Specific Praise for Check-Out Attendance
- Review Point Sheet
- Tally Points and Percentages
- Type Point and Percentages on Student Record Form & CICO Sheet
- Give Specific Positive Feedback About Performance.
- Reward Students, if applicable
- Reteach Students Target Behavior, if applicable
- Release Student
- Complete Student Record Form

As needed

- Communicate with homeroom teacher, case manager, and/or me about concerns/issues
- Contact home about successes/struggles (or ask administrator to)

Appendix H: Student Record Form

Student Name: _____

Date	Check-In	Check-Out	Teacher Contacted with concerns or questions	Percentage Points Earned	Goal Met	Parent Given Access to DPC

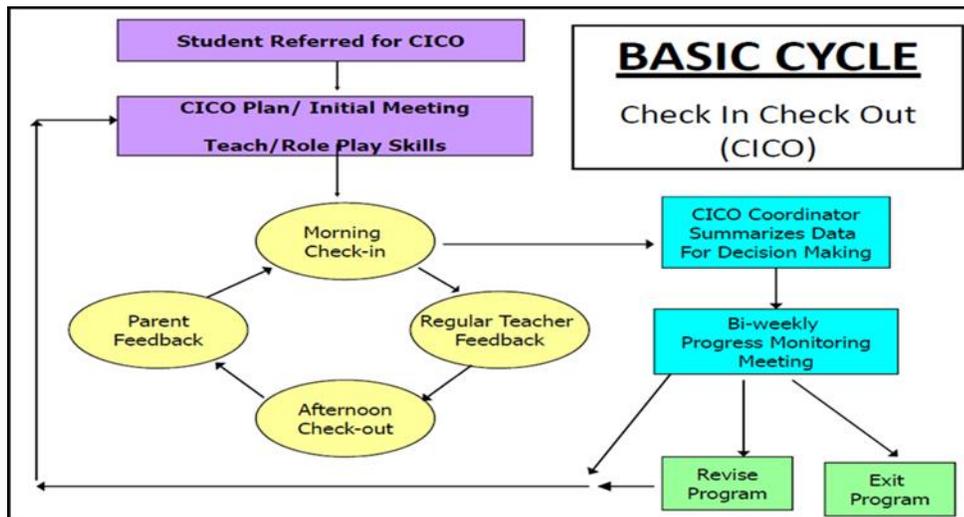
Appendix I: Teacher Training Script

Teacher Training Script

Distribute the Basic Cycle for CICO, the Integrity Checklist, and a sample daily point card before beginning the training.

Trainer: “Check in/Check (CICO) out is an effective collaborative intervention that provides students with adult attention and feedback on their behavior. Today, we are going to review the basics of CICO and discuss how we are going to implement CICO in the virtual environment.”

Trainer: “All participants should understand the fundamental components of Check-in/check-out prior to implementation. The success of a student depends on the fidelity of implementation. Infidelity can result in the lack of success for a student.”



Trainer: “Look at this graphic regarding the steps in the Check-in/Check-out process. What does it tell you about the process? How many steps are involved? Does this seem doable?”

****Address all questions****

Trainer: CICO is a four step process. It consists of a morning check-in, teacher feedback between 3-5 times a day, an afternoon check-out, and parent feedback. That’s it!”

Trainer: “CICO is a time-limited intervention. The hope is that students fade to self-management and exit through continuous improvement. Please know that this is a positive behavior support and is not meant to be punitive in anyway.”

Trainer: “Let’s review what should occur during teacher feedback.”

Trainer: “If a student attended morning check-in, you will have access to their daily point card. If you do not have access, the student did not attend morning check-in and s/he will need to be prompted to check in with the CICO Advisor. S/he will not earn a point for late check-ins.”

Trainer: “At the end of the live class or another pre-determined transition, use the point card to rate the student’s on-task behavior during the live class using a score of 0-10. Each rating has corresponding descriptors to help you in making an accurate estimate of behavior. Please do your best to rate the child’s behavior for the class period immediately preceding your rating.”

Trainer: “At this time, you should send the student a message about his rating, instruct him to the view to point sheet, and provide specific feedback. When providing feedback, try to use positive statements. Even if the student was not on-task, try to think of something they did well.

Trainer: “After reviewing the point card and providing specific feedback, you are done.”

Trainer: “Questions? Comments? Let’s practice using your Fidelity of Implementation sheet.

Appendix J: Daily Point Card
Check-In, Check-Out Daily Point Card Recording Form

Daily Behavior Point

Name: _____

Date: _____

<p>LEGEND:</p> <p>2 = Great</p> <p>1 = Partial</p> <p>0 = Goal not met</p>

Points Possible _____

Points Received _____

% of Points _____

Goal Met? Y N

Target Behaviors	Check-In	Subject 1	Subject 2	Check-Out

Comments: _____

Appendix K: CICO On-Task Behavior Recording Form

Check-In/ Check-Out On-Task Behavior Recording Form

CICO Recording Form

Student: _____
 Teacher: _____
 Observer: _____

Subject: _____
 Date: _____

Directions: Record the presence or absence of on-task behaviors and problem behaviors using 10 second whole interval recording for 15 minutes for each observation session.

Reminder: When recording for whole Interval + or √ = behavior is continuous during the 10s interval

Seconds	10	20	30	40	50	60
Minute						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Days of the month: _____ √ = Problem Behavior X = On Task Behavior = Absent/Not Available

Number of +s: _____ out of _____ intervals = _____ % of intervals

Number of √s: _____ out of _____ intervals = _____ % of intervals

Appendix L: Fidelity of Implementation
Fidelity of Implementation by Step/Component

Fidelity of Teacher Implementation of CICO

Intervention Component	Journey	Audwin	Anthony	Mark	Mean
1. I gave the student feedback at the end of every designated time period	100%	100%	100%	100%	100%
2. I only rated student performance for the designated time period.	93%	97%	90%	100%	95%
	91%	100%	100%	88%	95%
3. I gave the student positive feedback for performing appropriate behaviors and scoring high in that period					
4. If the student scored low in that period, I gave feedback on how they could improve their behavior.	100%	100%	100%	100%	100%

Fidelity of CICO Advisor Check In Implementation of CICO

Intervention Component	Journey	Audwin	Anthony	Mark	Mean
1. Gave student access to the DPC before the start of his/her first live class during check-in?	100%	100%	100%	100%	100%
2. Discussed student's performance/behavior from the previous day of live classes and issued feedback based on performance.	100%	100%	100%	66%	92%
3. Gave prompts regarding appropriate behavior.	100%	100%	100%	100%	100%

4. Set the daily goal with the student	100%	100%	100%	66%	92%
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Fidelity of CICO Advisor Check Out Implementation of CICO

Intervention Component	Journey	Audwin	Anthony	Mark	Mean
1. Reviewed DPC at the end of the school day with student	100%	100%	100%	100%	100%
2. Discussed student's performance/behavior from live classes attended for that school day and issued feedback based on performance.	100%	100%	100%	100%	100%
3. Issued applicable reinforcers/rewards regarding targeted behavior.	97%	93%	100%	100%	98%
4. Prompted student to share progress with parent as well as obtain parent signature.	100%	100%	100%	100%	100%

Appendix M: Teacher and CICO Advisor Social Validity Survey/Questionnaire
Teacher Check-In, Check-Out Social Validity Questionnaire

_____ has been in Check-In, Check-Out since _____. For each statement, select one number that best describes how you feel about Check-In, Check-Out.

1. Problem behaviors have decreased since enrollment in Check-In, Check-Out.

Strongly Disagree	Strongly agree
1 2 3 4	5 6

2. Appropriate classroom behaviors have increased since enrollment in Check-In, Check-Out.

Strongly Disagree	Strongly agree
1 2 3 4	5 6

3. It was relatively easy (e.g. amount of time/effort) to implement Check-In, Check-Out.

Strongly Disagree	Strongly agree
1 2 3 4	5 6

4. How effective was Check-In, Check-Out in decreasing this student's number of absences and tardies?

Strongly Disagree	Strongly agree
1 2 3 4	5 6

5. The Check-In, Check-Out process for this student was worth the time and effort.

Strongly Disagree	Strongly agree
1 2 3 4	5 6

6. I would recommend that other schools use the Check-In, Check-Out process with similar students.

Strongly Disagree	Strongly agree
1 2 3 4	5 6

Adapted from Deanne A. Crone, Leanne S. Hawken, and Robert H. Horner (2010). Copyright by The Guilford Press.

Appendix N: Student Social Validity Survey/Questionnaire

Student Check-In, Check-Out Social Validity Questionnaire

For each statement, select the number that best describes how you feel about Check-In, Check-Out.

1. Check-In/Check-Out helps improve my behavior at school.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6

2. Check-In/Check-Out helps with completion of classwork.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6

3. It was relatively easy (e.g. amount of time/effort) to implement Check-In, Check-Out.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6

4. Check-In/Check-Out decreases the amount of time I am off task in the class.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6

5. It is easy to complete the Check-In/Check-Out process.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6

6. Check-In/Check-Out process is worth the time and effort. Overall, it really helped me.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6

7. If I had a choice, I would participate in Check-In/Check-Out again.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6

8. If I think Check-In/Check-Out would be good for other kids that may be struggling with staying on task.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6

Adapted from Deanne A. Crone, Leanne S. Hawken, and Robert H. Horner (2010). Copyright by The Guilford Press.

Appendix O: Teacher and CICO Advisor Social Validity Survey/Questionnaire Results

Teacher Check-In, Check-Out Social Validity Questionnaire Results

Social Validity Scale CICO Advisor and Teacher Responses

	CICO Advisor	Teacher 2	Teacher 3	Mean
Problem behaviors have decreased since enrollment in Check-In, Check-Out	5	6	4	5
Appropriate classroom behaviors have increased since enrollment in Check-In, Check-Out.	5	6	5	5.3
It was relatively easy (e.g. amount of time/effort) to implement Check-In, Check-Out.	3	5	6	4.6
How effective was Check-In, Check-Out in decreasing students' number of absences and tardies?	6	6	6	6
The Check-In, Check-Out process for this student was worth the time and effort.	6	6	4	5.3
I would recommend that other schools use the Check-In, Check-Out process with similar students.	5	6	5	5.3

Appendix P: Student Social Validity Survey/Questionnaire Results

Student Check-In, Check-Out Social Validity Questionnaire Results

Social Validity Scale Student Responses

	Journey	Audwin	Anthony	Mark	Mean
Check-In/Check-Out helps improve my behavior at school.	6	3	5	1	3.75
Check-In/Check-Out helps with completion of classwork.	6	5	1	2	3.50
It was relatively easy (e.g. amount of time/effort) to implement Check-In, Check-Out.	3	2	5	1	2.75
Check-In/Check-Out decreases the amount of time I am off task in the class.	6	6	5	1	4.50
It easy to complete the Check-In/Check-Out process.	4	4	5	3	4.00
Check-In/Check-Out process is worth the time and effort. Overall, it really helped me.	6	6	6	1	4.75
If I had a choice, I would participate in Check-In/Check-Out again.	5	6	4	6	5.25
If think Check-In/Check-Out would be good for other kids that may be struggling with staying on task.	6	5	5	6	5.50