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Check-in/Check-out to Increase Academic Engagement and Classroom Behavior Among Adolescent Students in Juvenile Detention Centers

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CHECK-IN/CHECK-OUT TO INCREASE ACADEMIC ENGAGEMENT AND CLASSROOM BEHAVIOR AMONG ADOLESCENT STUDENTS IN JUVENILE DETENTION CENTERS

by

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ABSTRACT

CHECK-IN/CHECK-OUT TO INCREASE ACADEMIC ENGAGEMENT AND CLASSROOM BEHAVIOR AMONG ADOLESCENT STUDENTS IN JUVENILE DETENTION CENTERS

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The use of multi-tiered techniques can address many students' needs (e.g., problem behaviors, academic disengagement) in schools and juvenile detention centers. Some students have serious problems that may lead to poor academic performance and prevent them from being successful in school and in life. Check-in, check-out (CICO) is an effective second-tier intervention to address problem behaviors evidenced by these students. The purpose of this experimental study was to examine the effectiveness of using the CICO intervention on the four dependent variables (i.e., problem behaviors, appropriate behaviors, academic engagement, academic disengagement) among four incarcerated students. An A-B-A-B reversal design was used to assess the effectiveness of the CICO interventions on the four dependent variables. The results of the study indicated that the intervention functionally decreased problem behaviors and academic disengagement and increased appropriate behaviors and academic engagement. Finally, limitations and implications for future research and practice are discussed.

I dedicate this dissertation to my family and many friends, as well as my parents, who gave me moral lessons on discipline from an early age and supported me during my graduate studies. I also dedicate my dissertation to all educators and practitioners who address students' problem behaviors and academic disengagement.

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CHAPTER ONE

INTRODUCTION

Background

The majority of school-age students perform well academically, behave appropriately, and engage in positive social interpersonal interactions. These students are expected to succeed in schools. However, students who exhibit problem behaviors are at risk of poor academic engagement, suspension, school failure, and even incarceration Problem behaviors can impact students' ability to learn and perform well academically and engage in positive social interactions. Problem behaviors also can negatively impact students' social relationships among peers, diminishing their sense of belonging, which is a critical factor in school engagement (Hopkins, Taylor, Bowen, & Wood, 2013; Lawrence, 2017; Newman, Lohman, & Newman, 2007).

Students with problem behaviors. Every year, about three million K-12 students with and without disabilities face disciplinary actions, including out-of-school suspension for engaging in challenging behaviors. According to the U.S. Department of Education, Office for Civil Rights (2016), approximately 2.8 million (6%) out of 50,035,744 million K-12 students faced suspensions during the 2013-2014 school year. During the 2015-2016 school year, this number was still the same, 2.7 million (5-6%) out of 50.6 million K-12 students received out-of-school suspensions (U.S. Department of Education, Office for Civil Rights, 2018). Students who are suspended from schools often have exhibited inappropriate behaviors, such as fighting with students and teachers and using dangerous or deadly weapons. Students with problem behavior are at higher risk of failure than their peers due to their inability to manage their behavior. Not

surprisingly, many of these students are diagnosed as having emotional and behavioral disabilities (Hopkins et al., 2013; Lawrence, 2017; Nese et al., 2014).

In Saudi Arabia, there is a large population of students with problem behaviors in schools, but there is no accurate estimated number/or percentage of these students (Abdel-Fattah et al., 2004; Heward, Gilmore, Shochet, Campbell, & Roberts, 2006). According to the World Health Organization (2003), approximately 29% of students aged between 10 and 19 years who have behavior problems. As such, it is important to provide students with problem behavior effective interventions that can help address their needs.

Students with emotional and behavioral disorders. In the 2016-2017 school year in the United States, approximately .05% of school-age students were diagnosed with emotional and behavioral disorders (U.S. Department of Education, 2018). Students with emotional and behavioral disorders (EBD) often exhibit problem behaviors that impact learning in the classroom. Behavioral problems include physical (e.g., hitting, pushing), verbal (e.g., threatening, saying inappropriate words, talking without permission), and/-or electronic (e.g., cyberbullying) behaviors.

Students with EBD who exhibit inappropriate behaviors (e.g., off-task or disruptive behavior, bullying) are perceived negatively by peers and their teachers. These behaviors can negatively affect their academic performance, as well as the academic performance and safety of their peers in the general education setting (Christensen, Young, & Marchant, 2004; Chu, 2015; Limber & Small, 2003). Students with problem behavior and EBD are more likely to be suspended from school, which contributes to a negative attitude toward school, disrupt classroom instruction, rule breakings, and/or commitment of offenses that result in juvenile justice system referral and placement (Irvin, Tobin, Sprague, Sugai, & Vincent 2004).

In Saudi Arabia, EBD is considered as a category of special education by the Ministry of Education. Abdel-Fattah et al. (2004) did a study on 1313 students that revealed 109 (8.3%) of the students were eligible to be diagnosed with EBD regarding parents' reports. According to the General Authority for Statistics (2016), the number of students with EBD is expected to increase by 10,000 students per year. The increased number of students with EBD will require the Saudi government to take action to help these students address the impact of challenging behaviors in the classrooms.

Juvenile detention students. According to the U.S. Department of Education (2018), there are 4,091 students in correctional facilities, representing 1.22% of the national number of students with EBD. Juvenile offenders with and without disabilities numbered 48,043 in 2015. Data show that the proportion of violent criminal acts committed by juveniles increased from 12.1% in 2014 to 14.1% in 2015 (U.S. Department of Justice Office of Justice Programs, 2017). In 2016, an estimated 856,130 juveniles under 18-years of age were arrested. In Saudi Arabia, the number of children placed in social observation houses (i.e., juvenile detention centers) increased from 10,547 in 2015 to 10,704 in 2016 (Saudi Ministry of Labor and Social Development, 2017). Moreover, 11,142 notices were submitted to social protection programs regarding domestic violence and protecting children under the age of 18-years from all types of abuse and neglect (Saudi Ministry of Labor and Social Development, 2017). The number of children placed in social observation houses (i.e., juvenile detention centers) increased more by than 30% from 2014 to 2015 within each of the 17 centers in Saudi Arabia. The types of criminal acts for which such youths were sentenced included: homicide, substance abuse, use of weapons, destruction of property, and theft (Ministry of Labor and Social Development, 2016).

According to the U.S Department of Education (2014), educational institutions (e.g., schools) are required to provide a safe educational environment for all students, with and without disabilities. Therefore, educational personnel need to implement proven effective interventions to reduce problem behavior and increase academic engagement, both of which are prerequisites to successful school performance (Lawrence, 2017; MacFarlane & Woolfson, 2013; Nese et al., 2014). There is general agreement that youths exhibiting behavior problems need powerful interventions (e.g., CICO) to help them engage in more socially acceptable behavior in order to succeed in school and for schools to provide a safe learning environment for all students (Lawrence, 2017).

Check-in/Check-out. One of the effective interventions that can be used to improve students' behaviors and provide supportive educational climate is school-wide positive behavioral interventions and supports (PBIS). PBIS is a system that can use as both prevention and intervention including a decrease in problem behaviors, an increase in academic engagement with providing a supportive and safe educational environment for all students at any educational center (e.g., schools, residential facilities, juvenile detention centers). It is considered as the first tier that can help educational centers plan and manage students' behaviors in an appropriate way (Bradshaw, 2013; Lawrence, 2017; Swain-Bradway, Swoszowski, Boden & Sprague, 2013). One proven effective intervention that has received increased attention is the Check-in/Check-out (CICO) intervention because it has been shown to be an effective second-tier intervention for increasing academic engagement and reducing problem behavior (Turtura, Anderson, & Boyd, 2014; Miller, Dufrene, Sterling, Olmi, & Bachmayer, 2015). CICO can be used as a second-tier intervention within a tiered system of support for students who need additional instruction or non-responders to the first-tier system of supports. It consists of six steps: 1) A mentor and

student meet each morning before classes start; 2) the student takes a CICO point sheet and gives it to each teacher during the course of the day (e.g., math, English); 3) teachers are responsible for filling out the sheet and providing feedback on the student's performance; 4) at the end of each school day, the CICO mentor and student meet again to review and discuss the student's performance, and the mentor provides positive feedback on the student's achievements; 5) the student takes the sheet to his or her parents or guardians; and (6) the student returns the sheet to the CICO mentor the following morning.

Statement of the Problem

Students with problem behavior or who are diagnosed with EBD are more likely than their peers without problem behavior to be suspended from school and placed in alternative schools or juvenile detention centers due to chronic challenging behaviors. Juvenile detention centers serve to rehabilitate students; however, most often these students return to society without receiving appropriate interventions that give them the tools to self-regulate their emotions and behaviors that resulted in the out of school placements (Billingsley, 2004; Boe & Sunderland, 2008). Not surprisingly, social, emotional, and behavioral difficulties represent a major problem in schools, especially when students with EBD are in a general education setting and do not receive effective interventions (e.g., Christensen et al., 2004; Chu, 2015; MacFarlane & Woolfson, 2013; Tews & Lupart, 2008; Wehby, Lane, & Falk, 2005). Unfortunately, the teachers charged to deliver these interventions are often ill-equipped, lacking the supports, resources, and time to provide adequate instruction. In fact, according to Lastrapes (2014), MacFarlane and Woolfson (2013), and Tkachyk (2013), these teachers may even have negative attitudes and/or beliefs about students with problem behavior and/or EBD. Research reports that teaching students with more challenging behavior exceed their experience levels to manage and

meet these students' needs. Given the fact that these students often engage in highly disruptive and otherwise unacceptable behavior, they face disciplinary actions, such as suspension/expulsions from school and, in extreme cases placement in alternative schools or juvenile detention centers.

According to Liu (2004), a strong relationship exists between problem behavior, EBD (e.g., aggressive behaviors), and antisocial behaviors (ASB); furthermore, problem behaviors (e.g., aggression) can lead adolescent students to exhibit antisocial behaviors and violent acts if they do not treat. Behaviors that violate social norms, such as truancy, threatening others, stealing, and vandalism and physically attacking others can lead adolescent students to exhibit delinquent behavior, such as using drugs, or physical aggression, failure to intervene early can result in escalation (Abdullah, Ortega, Ahmad, & Chazali, 2015). Antisocial behaviors are a major factor in leading to students to be placed in juvenile detention centers (Abdullah et al., 2015).

Research demonstrates the relationship exists between problem behavior, EBD, and antisocial behaviors (Burt, Patel, & Lewis, 2012; Cole, Treadwell, Dosani, & Frederickson, 2013; Liu, 2004). Further, students who engage in aggressive behaviors may progress to antisocial behavior, harassment of others, stealing, or using drugs. Students with a behavior problem often are unable to control their emotions or behavior (e.g., hitting, lying, stealing) in school or out of school and, as a result, are subject to suspension, expulsion, and are at risk of being identified as juvenile offenders and placed in juvenile detention centers (Burt et al., 2012; Cole et al., 2013; Liu, 2004).

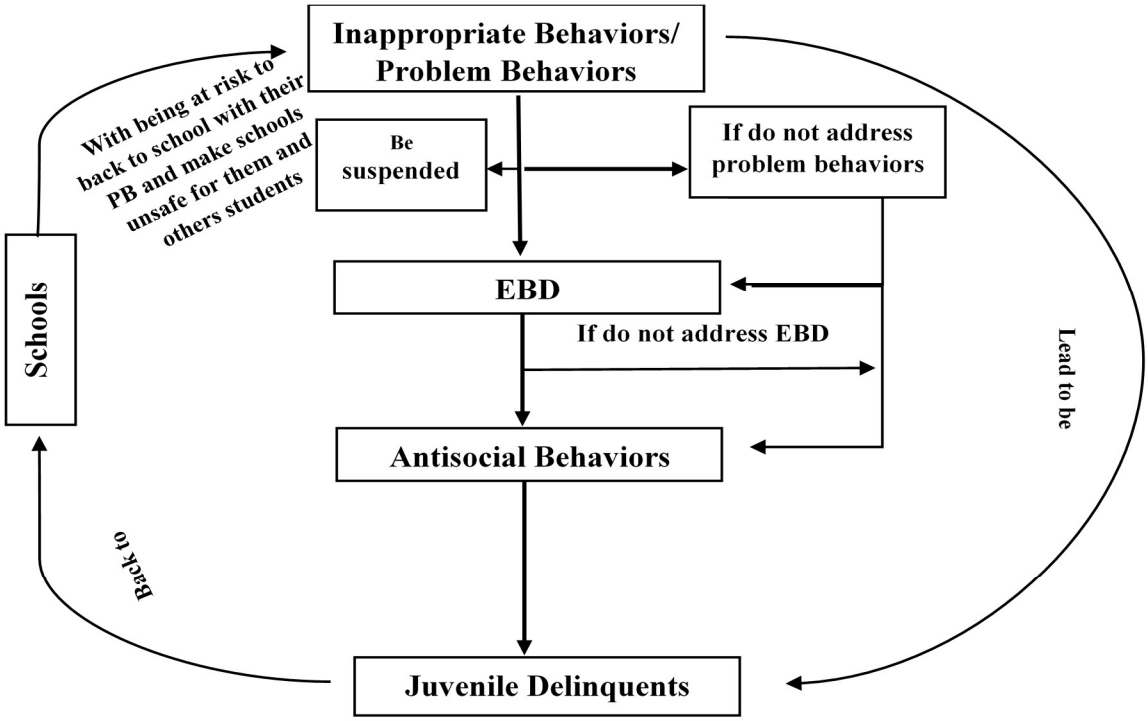

Figure 1. Relationship between the three terms of problem behaviors and how they lead students to be in juvenile detentions centers

The experience of being placed in the juvenile justice system may exacerbate problem behaviors that already exist, especially when juvenile offenders do not receive effective strategies that can address their needs (Nelson, Jolivette, Leone, & Mathur, 2010). Consequently, students with chronic problem behavior are at risk of returning to their home and/or school without having been given the tools to self-regulate their emotions and behaviors (Billingsley, 2004; Boe & Sunderland, 2008). Therefore, it is essential that students in juvenile detention centers to receive evidence-based interventions aimed at reducing or eliminating inappropriate behaviors before they are discharged and return home.

Timely and appropriate interventions can decrease the risk that students with problem behavior are diagnosed with EBD; furthermore, they may reduce the development of negative patterns of behavior by students both with problem behaviors and EBD, which often lead to

failure in school; suspension or expulsion from school; or committing offences that place them in the justice system and often in detention facilities (Irvin et al., 2004). If teachers do not know how to teach effectively students with problem behavior, negative attitudes and beliefs towards including these students in a general education classroom may develop. Indeed, Wagner and her colleagues (2006) documented the fact that relatively few general education teachers feel capable of managing successfully the behavior of classroom management. Teacher negative attitudes may be a factor to increase the number of these students being suspended from school, transferred to alternative schools, or placed in correctional or residential facilities (Billingsley, 2004; Boe & Sunderland, 2008; Lawrence, 2017; Nese et al., 2014).

Rationale for the Study

According to Irvin et al. (2004), suspensions are a common response to disruptive student behavior and/or problem behavior, especially among those students with and without disabilities, who attend middle and high schools. Moreover, students with problem behavior are at a higher risk than other students of being incarcerated (Anderson, Kutash, & Duchnowski, 2001). Therefore, it is important for students with problem behavior to receive effective interventions. CICO intervention has been shown to be an effective intervention for decreasing problem behavior and increasing academic engagement (Hawken & Horner, 2003; Hawken, MacLeod, & Rawlings, 2007; Lane, Capizzi, Fisher, & Ennis, 2012; Smith, Evans-McCleon, Urbanski, & Justice, 2015). According to Swoszowski, Patterson, and Crosby (2011)**,** CICO has been implemented in elementary schools more than in middle and high schools. Furthermore, a review of the literature revealed that there is a paucity of studies that have focused on the effect of CICO on incarcerated students.

According to Nelson et al. (2010), students with and without problem behavior may be negatively influenced by placement in juvenile justice systems, which often exacerbates existing problem behaviors. Many students with problem behaviors and academic disengagement are placed in juvenile detention centers, and these students return to their homes and schools without receiving effective interventions (e.g., CICO) that treat their problems. Drawing on a review of the literature, the present study was designed to examine the effectiveness of CICO intervention for students with academic disengagement and problem behavior in the classroom in juvenile detention centers. Results have the potential of helping students address their behavior problems before returning to their homes, schools, and community. Results also could help these students to be more successful in school and in turn, make schools safer for all students. Finally, positive outcomes may inform other school personnel and facilitate the more widespread use of CICO.

In the following sections, I present a review of the literature on CICO. It defines the problem faced by students and schools and it defines problem behavior and academic engagement and disengagement linked to the inability to self-regulate emotions and behavior. I also discuss the potential outcomes of using CICO intervention to address problem behavior and gaps in the research. Finally, I pose the research questions that guided this present research.

CHAPTER TWO

REVIEW OF THE LITERATURE

Students exhibiting problem behavior are not new, and they represent a longstanding challenge for school personnel. Fortunately, there is a plethora of research aimed at defining and revising problem behavior going back many years (Schumaker, Hovell, & Sherman, 1977; Zeman, Shipman, & Suveg, 2002). According to Bandura et al. (1963), providing elementary age students models demonstrating inappropriate behaviors has been shown to have a major influence on their behaviors. Providing an example of behavior patterns is one essential element to teach students the difference between inappropriate and appropriate behaviors and to develop students' ability to control their behavior (Camp, Blom, Hebert, & van Doorninck, 1977; Lochman, Nelson, & Slims, 1981). Moreover, modeling both appropriate and inappropriate behaviors may be used as an educational lesson to reduce problem behaviors that can be exhibited physically (e.g., pushing, hitting), verbally (e.g., threatening others, spoken words that can hurt others), or electronically, such as cyberbullying.

Behavior Problems and Students with EBD

Historically, students with chronic problem behavior were diagnosed as having emotional disturbance (ED), the legal definition of which was proposed by Congress in 1975. The federal definition of ED first used Bower's 1957 research. Bower's definition referred to children with ED as: (a) poor learners who are unable to learn, (b) having few or no acceptable interpersonal relationships with peers, (c) exhibiting inappropriate behaviors, and (d) being depressed or unhappy. The definition avoided presumptions about children's clinical designation and intrapsychic conditions. The primary focus was on observable behavior at home or in school (Bower, 1982).

During the 1990s, the definition of ED was replaced by emotional and behavioral disorders (EBD). The EBD definition was developed by the National Mental Health and Special Education Coalition which involved a group of approximately 30 professionals (Merrell & Walker, 2004). EBD defined children by disability characteristics, or/and who exhibited inappropriate behavioral or emotional reactions at their schools, that was widely different from appropriate and ethical norms. It was widely understood that these inappropriate responses can have a negative effect on their educational performance.

The current definition of EBD was adopted by the Individuals with Disabilities Education Act (IDEA; 2004), and it defines a child with EBD as exhibiting one or more of the following characteristics over a long period of time: (a) an inability to learn that cannot be explained by sensory, intellectual, or health factors; (b) an inability to establish and sustain suitable interpersonal relationships with teachers and peers; (c) repeated inappropriate behavior (e.g., aggression, non-compliance) under normal circumstances; (d) demonstrated feelings of unhappiness or depression; and (e) a tendency to show physical symptoms or groundless fears related to school or personal problems. One or more of these characteristics can affect a student's educational performance so negatively as to make special education placement appropriate or necessary (Electronic Code of Federal Regulations, 2018; U.S. Department of Education, 2005; Individuals with Disabilities Education Act, 2017).

Problem Behaviors and the Juvenile Justice System

Children under 18 years old who exhibit problem behaviors that include antisocial behaviors (e.g., stealing, using drugs, carrying weapons) may face removal from public school and placement in juvenile detention centers or residential institutions housing for offending delinquents (Matsumoto et al., 2005). The first juvenile justice system in the U.S. was

established in 1899, the same year that the world's first juvenile court was established in Cook County, Ill (Nelson et al., 2010). The justice system was expected to return children and/or adolescents back into the general population/school with revised behaviors at the end of their sentencing time. Since the inception of juvenile detention centers, there has been an increase in the number of juvenile detention residents around the world, and many countries seek solutions to decrease the numbers of behavioral problems and juvenile offenders (e.g., Saudi Arabia; Heward et al., 2006).

Interventions and Juvenile Offenders

Many researchers (e.g., Barrett, Katsiyannis, Zhang, & Zhang, 2014; Cavendish, 2014; Nelson, et al., 2010; McHale, Obrzut, & Sabers, 2003; Mueller & Stoddard, 2006; Mathur, Griller Clark, LaCroix, & Short, 2018; Whitted, Delavega, & Lennon-Dearing, 2013) have investigated the characteristics of children and young adults in the juvenile justice system and effective ways to help them to improve or correct their behavior. When a juvenile justice system does not use a multi-tiered system of supports (e.g., PBIS, CICO), it can be a place that helps residential students to learn inappropriate behaviors. Students with problem behavior are more likely to experience poor academic performance and become disenfranchised from the educational system when they do not receive appropriate interventions. Both learners with and without problem behavior may be negatively affected and their problems often worsen if they do not receive effective interventions (e.g., peer tutoring, CICO, self-management; Hill & Flores, 2014; Nelson et al., 2010; Swoszowski, McDaniel, Jolivette, & Melius, 2013).

Researchers agree that students with problem behavior and/or EBD are at increased risk of being involved in the juvenile justice system and housed in juvenile justice facilities (Barrett et al., 2014; Cavendish, 2014; Nelson et al., 2010). Barrett et al. (2014) found children and

students who engage in aggressive behavior are at a higher level of risk for delinquency. Moreover, school-related learning and emotional problems (e.g., anxiety and mood swings) also play a role in delinquency.

Timely and appropriate interventions for students in juvenile detention centers can prepare them to reenter the general population with revised behavioral thinking that is more consistent with productive learning. Interventions to improve inappropriate behaviors and academic engagement for students in alternative settings (e.g., juvenile detention centers) should focus on strategies that promote self-regulation of emotions and behavior. Best practices often include using a mentor or academic coach who meets with a student routinely to review students' academic and behavioral performance goals.

Timmons-Mitchell, Bender, Kishna, and Mitchell (2006) used a multi-system therapy for offenders' parents and teachers to train them to supervise youths and to better understand their behavior. The aim of this system is to empower the people close to youths with problem behavior in order to improve students' behavior, which has the potential to result in a significant reduction of rearrests. In another study, researchers found that dialectical behavioral therapy was effective in decreasing serious behavioral problems among female offenders (Trupin, Stewart, Beach, & Boesky, 2002). Both interventions that were advocated by Timmons-Mitchell et al. (2006) and Trupin et al. (2002) can reduce problem behaviors, however, none of the available studies aimed to address academic engagement and/or performance in juvenile detention centers' educational settings. One strategy that has received increased attention is Check in/Check out (CICO). It is one intervention that has been shown to be effective in addressing both academic and behavioral problems.

Check-in/Check-out Interventions

Students who are in juvenile justice centers need to receive evidence-based practices intervention that is considered as the first tier intervention (e.g., PBIS) with providing staff training to how to implement these practices which can contribute to addressing all incarcerated students' problem behaviors (Nelson et al., 2010; Sprague, Scheuermann, Wang, Nelson, Jolivette, & Vincent, 2013; Swain-Bradway et al., 2013). Schools should also intend to improve students' behaviors by providing PBIS and including a decision-making framework (response to intervention [Rtl]) that can identify students who at risk of problem behaviors and need to receive an intensive intervention, such as CICO interventions (Nelson, 2010; Sprague et al., 2013). CICO intervention can be used as intensive intervention (Tier 2 intervention) to improve students who need additional instruction or non-respond to the first-tier intervention, which can be a part of PBIS.

Early versions of the CICO program used report cards or other systems to address inappropriate behaviors through self-monitoring and self-evaluation scaffolded with teacher/others support (Schumaker et al., 1977). For example, Schumaker et al. (1977) examined the use of a daily report-card system to modify inappropriate behaviors of three male students (e.g., talking to peers while the teachers were conducting discussions, leaving their seats without permission, refusing to follow instructions, speaking discourteously). The researchers found that using a daily report card-based program that involved teachers and parents led to improvements in the behavioral and academic performance at school for all three participants. In other early studies, Hawken and Horner (2003) and March and Horner (2002) examined the effect of CICO on academic engagement (e.g., talking about a given topic) and decreasing problem behaviors (e.g., being out of seat). They found that CICO improved both academic engagement and

decreased problem behaviors of all the participants. However, a comprehensive review of the literature yielded no studies that used CICO/ report cards with incarcerated students.

Rationale for the Literature Review

The purpose of this literature review was to evaluate the effectiveness of more recent CICO single-subject studies for K-12 students and to identify how studies defined problem behavior(s) and with what population(s) of students there was empirical evidence that CICO interventions were effective. Further, these studies were evaluated according to the What Works Clearinghouse (WWC; 2017) single-case design standards to ensure fidelity and increase the internal validity of the designs of the studies.

As shown in Table 1, four systematic review studies (Bruhn, Lane, & Hirsch, 2014; Hawken, Bundock, Kladis, O'Keeffe, & Barrett, 2014; Mitchell, Stormont, & Gage, 2011; Wolfe et al., 2016) reviewed a total of 46 experimental studies that used CICO intervention. Results of reviewing 46 CICO experimental studies indicated that single-subject design is the design most often used with CICO intervention to address students' inappropriate behaviors. A total of 35 out of 46 reviewed studies used single-subject designs. Findings of the review of these experimental studies indicated that CICO was an effective intervention for addressing problem behaviors. Three studies (Ennis, Jolivette, Swoszowski, Johnson, 2012; Lane, Kalberg, Mofield, Wehby, & Parks, 2009; Swain-Bradway, 2009) were implemented with high school students and 14 studies (e.g., Simonsen, Myers, & Briere III, 2011) were implemented with middle school students. A total of 29 studies were implemented with elementary age students in traditional or alternative educational settings. In contrast, none of the 46 studies used CICO interventions with students in juvenile detention centers. As such, this study was designed to implement CICO with this largely neglected student population.

Table 1
Experimental Studies that were reviewed from the systematic review studies (Bruhn, Lane, & Hirsch, 2014; Hawken, Bundock, Kladis, O'Keeffe, & Barrett, 2014; Mitchell, Stormont, & Gage, 2011; Wolfe, Pyle, Charlton, Sabey, Lund, & Ross, 2016)

Study	Study Design	Setting (school level)
Barber (2013)	SSSD	S (ES)
Boyd (2011)	SSSD	S (ES)
Boyd and Anderson (2013)	SSSD	S (ES)
Campbell and Anderson (2008)	SSSD	S (ES)
Campbell and Anderson (2011)	SSSD	S (ES)
Cheney, Flower and Templeton (2008)	QE	S (ES)
Cheney et al. (2009)	E	S (ES)
Ennis, Jolivette, Swoszowski and Johnson (2012)	SSSD	RS (MS & HS)
Filter et al. (2007)	QE	S (ES)
Fairbanks, Sugai, Guardino, and Lathrop (2007)	QE	S (ES)
Gresham, Van, and Cook (2006)	SSSD	S (ES)
Harrison (2013)	SSSD	S (MS)
Harpole (2012)	SSSD	S (ES)
Hawken (2006)	QE	S (MS)
Hawken and Horner (2003)	SSSD	S (MS)
Hawken, O'Neil, and McLeod (2011)	QE	S (ES)
Hawken, MacLeod, & Rawlings (2007)	SSSD	S (ES)
Kauffman (2008)	SSSD	S (ES)
Kamps et al. (2011)	SSSD	S (ES)
Lane, Capizzi, Fisher, and Ennis (2012)	SSDD	S (MS)
Lane, Graham, Harris, Little, Sandmel, and Brindle (2010)	SSSD	S (ES)
Lane et al., (2011)	PPD	S (ES)
Lane et al. (2008)	SSSD	S (ES)
Lane, Kalberg, Mofield, Wehby, and Parks (2009)	QE	S (HS)
Lane et al. (2002)	SSSD	S (ES)
Lane et al. (2003)	SSSD	S (ES)
Little et al., (2010)	SSSD	S (ES)
McCurdy, Kunsch, and Reibstein (2007)	CS	S (ES)
McIntosh et al., (2009)	QE	S (ES)
MacLeod (2009)	SSSD	S (SE)
Miller (2013)	SSSD	S (ES)
Miller, Dufrene, Sterling, Olmi, and Bachmayer (2015)	SSSD	S (ES)
Mong, Johnson, and Mong (2011)	SSSD	S (ES)
Marchant et al., (2007)	SSSD	S (ES)
March and Horner (2002)	SSSD	S (MS)
McDaniel et al., (2011)	QE	S (ES)
Ness, Sohlberg, and Albin (2011)	SSSD	S (MS)
Robertson and Lane (2007)	QE	S (MS)
Simonsen, Myers, and Briere III (2011)	E	S (MS)
Swain-Bradway (2009)	SSSD	S (HS)
Swoszowski, Jolivette, Fredrick, and Heflin (2012)	SSSD	S (MS)
Swoszowski, McDaniel, Jolivette, and Melius (2013)	SSSD	S (ES)
Swift (2012)	SSSD	S (ES)
Todd et al., (2008)	SSSD	S (ES)
Turtura (2011)	SSSD	S (MS)
Turtura, Anderson, and Boyd (2014)	SSSD	S (MS)
Toms (2012)	SSSD	S (MS)
Wills, Kamps, Abbott, Bannister, and Kaufman (2010)	QE	S (ES)
Weakley (2012)	SSSD	S (MS)
A study %	SSSD = 35 (70%)	ES = 34 (68%) MS = 14 (28%) HS = (6%)

Note. SSSD = single subject study design; CS = case study; PPD = pretest–posttest design; ES = elementary school; MS = middle school; HS = high school; RS = residential setting, QE = quasi-experimental; E = experimental study design (study includes a comparison group)

Swoszowski et al. (2011) indicated that CICO was implemented more often in traditional elementary school environments and no study implemented in juvenile detention centers. This indicates that that the opportunity exists to try CICO with students who placed in juvenile detention centers need to improve their behaviors before returning to home and schools, they are often neglected in research pertaining to behavior interventions like CICO. Based on this finding, it is important to review recent CICO studies and determine the gap in CICO research, such as missing age students and settings that receive CICO intervention. It also is important to examine single-subject studies' designs to determine which study meets WWC design standards or not. Adhering to WWC design standards is important to increase the quality of scientific studies in special education and to classify interventions as evidence-based practices (Gersten et al., 2005; Odom et al., 2005).

Methodology for Searching and Evaluating Studies

Search procedures. Five databases were used for relevant, empirical studies that demonstrated the effectiveness of CICO interventions in diverse educational settings. Electronic databases included Psychology and Behavioral Sciences Collection, Teacher Reference Center, Education Complete Research, Education Source, and Academic Search Complete.

Literature terms search. The keywords used to search for studies were as follows: CICO intervention, check-in/check-out, inappropriate behaviors, juvenile justice centers, a daily progress report, emotional disturbance, and problem behaviors. A hand search of the literature was also conducted to identify additional studies referenced in published research citations that met the inclusion criteria (Ledford & Gast, 2018).

Inclusion criteria. There were six criteria applied to this literature review to determine whether a study met the inclusion criteria. First, studies were published in peer-reviewed

journals. Second, studies were published between 2008 and 2019. Third, studies focused on testing the effectiveness of the CICO intervention with K-12 school-aged students with behavior needs (i.e., five through 18 years of age, K to 12th grade). Fourth, the studies employed a single-subject design. Fifth, the studies were written in English. And sixth, the studies considered CICO intervention and included a daily progress card or daily report card as an independent variable for decreasing problem behaviors (e.g., hitting) and increasing academic engagement (e.g., complete a given assignment).

WWC single-case design standards. The rigor of the research conducted in the studies assessed was evaluated using the What Works Clearinghouse Design Pilot Standards for SCDs (i.e. single case-designs; WWC, 2017). Each reviewed study was classified as *Meets Design Standards*, *Meets Design Standards With Reservations*, or *Does Not Meet Design Standards* according to the following criteria: (a) researchers, systematically manipulated (phases) of independent variables (IV), (b) observation and data collection was completed individually by more than one observer, (c) inter-rater reliability was conducted on each phase for at least 20% of data points, (d) data met 80% inter-observer agreement across all phases, and (e) involved three or more attempts to show an intervention effect at three diverse data points in time. A study was considered as *Does Not Meet Design Standards* if it demonstrated few or none of the components specified by the WWC standards and rules (Kratochwill et al., 2013).

Results of the Literature Review

Search procedures. Initially, through the database search, 127 studies were identified and were reviewed briefly to determine whether they met the six inclusion criteria. From this cursory review, a total of 36 pertinent studies were found that included the six inclusion criteria. A hand search of the reference pages of those 36 studies produced an additional 21 studies. After

conducting a thorough review of all 57 studies, only 19 studies met the inclusion criteria and were further examined using the WWC single-case design standards. In the following sections, all 19 studies that met the inclusion criteria and were evaluated this review are discussed.

WWC Single-Case Design Standards. The use of the quality indicator checklist that is specified by the WWC standards (2017) and Kratochwill et al. (2013) yielded 19 studies. The design of these studies was categorized as *Met Standards* (2), *Met Standards With Reservations* (5), or *Did Not Meet Design Standards* (12). In all, seven of the 19 (37%) studies were determined to *Meet Standards* or *Meet Standards with Reservations*.

The Swoszowski et al. (2013) and Todd, Campbell, Meyer, and Horner, (2008) studies were the only two studies that met all design standards. The two studies used a multiple baseline design to examine the CICO intervention and reported at least three opportunities to demonstrate intervention effects, systematically manipulated independent variables, determined inter-observer agreement between two observers in each phase for at least 20%, met at least 80% inter-assessor agreement, and had six phases with at least five data points per phase. Another five studies (Ennis et al., 2012; McDaniel & Bruhn, 2016; Miller, Dufrene, Sterling, Olmi, & Bachmayer, 2015; Melius, Swoszowski, & Siders, 2015; & Turtura et al., 2014) were determined to have *Met Standards With Reservations,* but did not meet the higher standards required for the number of phases and data points per phase. McDaniel and Bruhn (2016) used a changing criterion design that involved only three to four data points per phase. Ennis et al. (2012) used a multiple baseline design across participants that had one phase with only four data points and there was absence to inter-assessor agreement per phase. Miller et al. (2015), Melius et al. (2015), and Turtura et al. (2014) used ABAB design in which some of the phases had only three to four data points, which prevented the studies from being considered as meeting the standards.

Another 12 studies (Boden, Jolivette, & Alberto, 2018; Campbell & Anderson, 2008; Collins, Gresham, & Dart, 2016; Dart et al., 2015; Hunter, Chenier, & Gresham, 2014; Lane et al., 2012; Swoszowski, Jolivette, Fredrick, & Heflin, 2012) did not meet the standards. Seven studies did not calculate inter-observer data agreement for at least 20% per phase. Moreover, Mong, Johnson, and Mong (2011) used a multiple baseline design with fewer than five phases. In addition, three studies (Bunch-Crump & Lo, 2017; Campbell & Anderson, 2011; Dart et al., 2015) had fewer than three data points for some phases. Ross and Sabey (2015) used a multiple baseline design that introduced the CICO intervention phase and the maintenance phase at the same time for all participants which is not appropriate for a multiple baseline design.

Literature review findings. From the 19 studies that showed improvement in students' academic and classroom behavioral performance as a result of the CICO intervention, six out of 19 studies (Bunch-Crump & Lo, 2017; Campbell et al., 2013; Collins et al., 2016; Ennis et al., 2012; Lane et al., 2012; Swoszowski et al., 2013) showed negative effects of using the CICO intervention for some participants' behaviors and while the remaining13 studies showed positive outcomes with regard to improving students' academic and behavioral performance (see Table 1 and 2 for information about all 19 studies). The following sections provide summaries of the studies reviewed according to two main themes: studies failed to meet WWC design standards and studies that met WWC design standards.

***Studies failed to meet WWC design standards*.** A total of 12 out of 19 studies failed to meet WWC single-case design standards, with and without reservation based on a variety of indicators.

Positive effects. Eight out of the 12 studies that did not meet WWC design standards showed positive results for improving students' behavioral outcomes (Boden et al., 2018;

Campbell & Anderson, 2008, 2011, in press-a; Dart et al., 2015; Hunter et al., 2014; Mong et al., 2011; Ross & Sabey, 2015; Swoszowski et al., 2012). Two studies (Campbell & Anderson, 2008, 2011, in press) used CICO to decrease problem behaviors and increase academic engagement across elementary students. Results of the two studies indicated that all participants with and without disabilities (e.g., learning disabilities) benefited from the CICO intervention. Dart et al. (2015), Hunter et al. (2014), Mong et al. (2011), and Ross and Sabey (2015) also found that CICO was effective for addressing elementary students' behavior and social issues (e.g., bullying). Only two (Boden et al., 2018; Swoszowski et al., 2012) out of the eight studies were implemented with middle school students with problem behaviors and used CICO intervention, both studies resulted in positive outcomes for addressing problem behaviors (e.g., off-task behaviors, disruptive behaviors).

Negative effects. Four out of 12 studies did not meet WWC design standards and showed negative results from using CICO (Bunch-Crump & Lo, 2017; Campbell et al., 2013; Collins et al., 2016; Lane et al., 2012). Bunch-Crump and Lo (2017) and Campbell et al. (2013) found that CICO was not effective in increasing academic engagement or reducing disruptive behaviors across students with disabilities (i.e., speech and language impairment, emotional and behavioral disorders). Collins et al. (2016) reported negative results for increasing social skills (e.g., joining group discussion, interacting with classmates) for one elementary student. Lane et al. (2012) found that CICO did not increase academic engagement decrease off-task behaviors for one participant who did not achieve phase criterion goal (90%, 85%) of increase appropriate behaviors in two criterion phases (see Table 2 for information about all the studies that failed to meet WWC design standards).

Table 2.

Summary of the Twelve Studies did not meet What Works Clearinghouse Single-Case Design Standards

Studies	DV	IV	Target's population and setting	*n*	Sample age range (Grade)	SPED Status	Measures	Results	Effect size, *p* value/ PND	Country
Bunch-Crump and Lo (2017)	CICO	Decreasing DB and increase AE	PES	4 (*M* = 4, *F* = 0)	9 to 11 (3rd to 5th)	SLS, SLS	SSIS-TF, DPR, SMMDIC, FACTS	- Positive in reduction of DB and increase AE for three out four participants and negative for one participant, however, he improved when introducing the FBSM as a secondary intervention for him.	NR	USA
Boden et al. (2018)	CICUCO	Decrees OT	SES in PMS	3 (*M* = 3, *F* = 0)	14 to 18	MoID, DE, SLI,	DO, DPR	- Positive in the reduction of off-task behaviors in three settings (classroom, coffee shop, restaurant)	NR	USA
Campbell and Anderson (2008)	CICO	Decrease PB	PES	2 (*M* =2, *F* = 0)	10	NR	FBA, DO, ABC	- Positive for both participants	NR	USA
Campbell and Anderson (2011)	CICO	Decrease PB and increase AE	PES	4 (*M* = 4, *F* = 0)	(2nd to 5th)	LD, SLI, ADHD	FBA, DO, PC.	- Positive for all participants	NR	USA
Campbell et al. (2013)	CICO	Decreasing DB and increase AE	PES	3 (*M* = *3*, F = 0)	7 to 11 (2nd to 5th)	EBD	DO, DPR,	- Positive and all three participants decreased their DB and two out three participants increased their academic engagement behavior. Negative for one participant who did not show significant improvement during CICO	NR	USA
Collins et al. (2016)	PM-CICO	Increase SS	PES	4 (*M* = 1, *F* = 3)	10 to 12 (4th to 5th)	NR	DBRC, SSIS-RS	- Positive for three out of four participants increasing social skill behaviors; however, it was negative for one participant	Tau- U = 0.71 P < .00	USA
Dart et al. (2015)	Peer-mediated CICO	Decrease IBP and increasing pre-social behaviors	PES	3 (*M* = 0, *F* = 3)	6 to 8 (1st to 2nd)	NR	DBR-MIS, DO, SIBS	- Positive for three participants on increasing their pro-social behaviors, however, two out of three participants get significant increasing in teachers completed DBR	Tau-U and P value	USA

Studies	IV	DV	Target's population and setting	*n*	Sample age range (Grade)	SPED Status	Measures	Results	Effect size, *p* value/ PND	Country
Hunter et al. (2014)	CICO	Decrease IBP and increase PSB	PES	4 (*M* = 3, *F* = 1)	9 to 11 (4th)	NR	DPR, SRSS, SIBS, SSIS-RS	- Positive for all participants on increase all four participants prosocial replacement behaviors and decrease their IBP	NR	USA
Lane et al., (2012)	BEP	Decrease OT, DB, IW	PMS	4 (*M*= 4, *F* = 0)	13 to 14 (8th)	ADHD, OHI	PFAS, ABC, SRSS, SSRST, DO	- Positive for three out of four participants - Negative for only one participant who did not achieve phase criterion goal in two phases.	NR	USA
Mong et al. (2011)	CICO	Decreasing PB, ODRs, and EPM and increase DCPM	PES	4 (*M* = *2*, F = 2)	8 to 9	NR	DO, FBA, DPR	- Positive for all participants on decrease of PB, ODRs, and EPM and increase DCPM in academic progress in the math class, however, results were somewhat effective for one participant.	PND	USA
Ross and Sabey (2015)	CICO + SS	Decreasing NSE and increase PSE	PES	5 (*M* = 1, *F* = 4)	7 to 11 (1st to 5th)	One Student with LD	DO, DBRC	- Positive for increased PSE and decreased NSE among all five participants	Tau-U And P value	USA
Swoszowski et al. (2012)	CICO	Decrease problem behaviors (e.g., DB, noncompliance)	A residential facility from K to 12 grades.	6 (*M* = 5, *F* = 1)	12 to 15 (6th to 9th)	EBD	DO, STAR point chart	- Positive for all six participants on decrease of problem behaviors	NR	USA

Note. CICO = check in, check out; CICO+SS; check in, check out + social skills; PM-CICO = peer-mediated CICO; BEP = behavior education program; CICUCO = check-in, check-up, check-in; DV = dependent variables; IV = independent variables; NSE= negative social engagement; PSE= positive social engagement; DB = disruptive behavior; AE = academic engagement; SS = social skills; OT = off-task behaviors; ; IW = incomplete work; IBP = internalizing behavior problems; PSB = prosocial behaviors; ODRs = office discipline referrals; EPM = errors per minute; DCPM = digits correct per minute; PES = public elementary school; PMS= public middle school; SES = special education services; M = male, F = female; LD = learning disabilities; EBD = emotional and behavior disorders; NR = no report; SLS = speech and language services; SLI = speech and language impairment; ADHD = attention deficit hyperactivity disorders; HOI = other health impairment; MoID = moderate intellectual disability; ED = emotional disorder; SLI = speech language impairment, DO = direct observation, PFACT = preliminary functional assessment survey, DBRC; a daily behavior report card, DPR = a daily progress report, FBA = functional behavior assessment, SSIS-RS = social skills improvement system–rating scales; SSRST = social skills rating system-teacher version, SMMDIC = self-monitoring mobile device with I-Connect, SRSS = student risk screening scale, SIBS = student internalizing behavior screener, SSIS-RS = social skills improvement system-rating scale, PC = a point card, DBR-MIS = direct behavior rating-multiple item scales, SIBS = student internalizing behavior screener, FACTS = functional assessment checklist for teachers and staff, ABC = antecedent-behavior-consequence data collection.

Studies met WWC design standards. Seven studies met WWC standards, with and without reservations (see Table 3 for more information about studies that met WWC design standards). The findings are described in relation to four factors: (a) participants and settings; (b) dependent variable and independent variable; (c) measurements; and (d) the effectiveness of the intervention.

Participants and setting. A total of 24 students (16 males, 8 females) participated in the seven studies. Four studies (Ennis et al., 2012; Melius et al., 2015; McDaniel & Bruhn, 2016; Swoszowski et al., 2013) included participants' age and grade, namely seven to 16-years old in grades first to ninth grade. Three studies (Miller et al., 2015; Todd et al., 2008; Turtura et al., 2014) reported only students' grade level, kindergarten to eighth grade. In sum, the seven reviewed studies showed that the number of participants of each gender was not equal in each study, and the CICO intervention was used with more male than female students.

The seven studies also varied in the groups of individuals targeted for intervention. Ennis et al. (2012) conducted their study with students diagnosed with emotional and behavioral disorders (EBD) and Swoszowski et al. (2013) had two students with other health impairments (OHI), one student with an EBD, and another student with developmental delays (DD). Melius et al. (2015) conducted their study with two students with attention deficit hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD). Todd et al. (2008) and Miller et al. (2015) implemented their studies with students exhibiting problem behaviors but without a diagnosis of a disability. For example, the Todd et al. (2008) study had four participants, including one student diagnosed with learning disabilities (LD). Finally, two studies (McDaniel & Bruhn, 2016; Turtura et al., 2014) targeted general education students wo attended regular classes but

exhibited disruptive behaviors (e.g., making disruptive noise) and were not academically engaged (e.g., not completing a given task) in classroom instruction.

Three of the seven studies (Ennis et al., 2012; Melius et al., 2015; Swoszowski et al., 2013) were conducted in an alternative educational setting (e.g., a residential facility or program for students with disabilities). Four studies were conducted in public school settings. Todd et al. (2008) and Miller et al. (2015) implemented their studies in public elementary schools and two studies were conducted in public middle schools with general education students (McDaniel & Bruhn, 2016; Turtura et al., 2014). All studies were implemented in schools or alternative education settings in the United States; no study was found to be implemented in a juvenile detention center.

Dependent variables. While most of the studies focused on decreasing problem behavior (Ennis et al., 2012; Miller et al., 2015; Melius et al., 2015; McDaniel & Bruhn 2016; Swoszowski et al., 2013; Todd et al., 2008; Turtura et al., 2014), two studies focused on increasing student academic engagement (Miller et al., 2015; Turtura et al., 2014). Miller et al. (2015) defined academic engagement as; talking with teachers about a given topic, looking at teachers during instruction, and following teachers' instructions. Academic engagement was also defined as students completing all their coursework and having all the essential materials, such as pens and workbooks (Turtura et al., 2014). Problem behaviors were defined as any behavior not correlated with academic tasks (i.e., off-task behaviors, disruptive behaviors, refusal to complete a given task, talking out without permission, negative peer interactions, being out of seat).

Independent variables. All seven studies used the CICO intervention with a minimum of five steps (e.g., check-in with a mentor in the morning to set and discuss the day's goals). Ennis

et al. (2012), Miller et al. (2015), McDaniel and Bruhn (2016), Todd et al. (2008), and Turtura et al. (2014) used teachers to implement the five procedures of the CICO intervention across participants. Swoszowski et al. (2013) used the five steps of the CICO intervention with one additional step, checkup. This step required a CICO mentor to meet with a student in the middle of the school day in the hallway during the transition between math and art class to mark half of the CICO point sheets. In a different way, Melius et al. (2015) used peer mentors instead of teachers to lead the CICO (PL-CICO) intervention. Peer mentors were responsible for meeting with each student and providing them with feedback regarding their behavioral performance.

Measurements. Measures used to gauge problem behaviors and academic engagement varied by study. Three studies used a 10-second partial interval recording system (Miller et al., 2015; Todd et al., 2008; Turtura et al., 2014), two studies used 15-second partial interval recording system (McDaniel & Bruhn 2016; Swoszowski et al., 2013), and one study used partial interval recording for a 15-minute observation without referring to the length of the interval time (Ennis et al., 2012). Melius et al. (2015) measured inappropriate behaviors by counting the average percentage of "stamp" earnings. All seven studies used direct observation and CICO point sheets (is called a daily point card) to measure these dependent variables. CICO point sheets had rating numbers that were used to examine students' academic and behavioral performance. Swoszowski et al. (2013), Turtura et al. (2014), and Miller et al. (2015) also defined off-task behaviors as students failing to attend to their teacher's instruction by not responding to the teacher's request within 10 seconds and/or refusing to complete a given task. Ennis et al. (2012) defined off-task behaviors as slapping, talking to peers, and putting one's head down during class time. Disruptive behaviors were defined as students being engaged in

non-academic talk with the teacher or peers, arguing with teachers, or making noise that could create a classroom disturbance (Ennis et al., 2012; Todd et al., 2008).

Positive student outcomes. Five out of the seven studies reported improvement, meaning a decrease in behavior problems and/or an increase in academic engagement among all their participants. Todd et al. (2008) used the CICO intervention with three regular education students and one student with LD. All four students with and without disabilities showed a decrease in problem behaviors after the onset of the intervention. The percentage of inappropriate behaviors decreased for the four students to 16%, 18%, 19%, and 15% from the baseline phase. One student had a substitute teacher for one day who did know about the intervention. The student exhibited more inappropriate behaviors (e.g., talking out, poking peers) on that day compared to other days with the CICO intervention condition.

McDaniel and Bruhn (2016) used a changing criterion with withdrawal design to examine the CICO intervention for two middle-school students without disabilities. The results indicated that both students decreased their problem behaviors and increased appropriate behaviors, based on a daily progress report score. The results also indicated that the correlation between CICO and problem behaviors in both students was significant ($p = .00$ for one student and $p = .06$ for the other student). Only one of the three changing criteria phases of the CICO intervention condition goals was not met; the goal was 85%, but the student achievement was 82.50%.

Melius et al. (2015) used peer-led check-in check-out (PL-CICO), which allowed a peer to be a mentor for the mentoring process. They found that PL-CICO helped to improve the behavior of two students both of whom were identified as ADHD and ODD. The results indicated that both students increased their daily stamp earning percentage after PL-CICO, which suggested that both students increased their exhibition of appropriate behaviors. Results were

analyzed by calculating the average of earned "positive stamps" during the school day. One student earned an average of 76% in the first baseline phase, and the percentage increased to 83% in the first intervention phase. The student average daily "stamps" earning decreased to 65% during the second baseline phase. However, after the reintroduction of the PL-CICU intervention, the average number of daily "stamps" earned increased to 77%. Another student showed positive results, with an increase in an average percentage of 12% in the first intervention phase compared with the first baseline phase and 26% in the second intervention phase compared with the second baseline phase. It should be noted that relevance on report cards represents acceptable data once removed from the actual behavior.

Turtura et al. (2014) and Miller et al. (2015) found that the CICO intervention helped to decrease problem behaviors and increase academic engagement across students with disabilities. Turtura et al. (2014) found that the intervention decreased problem behaviors by more than 9% across three students. The results also indicated that all three students increased academic engagement (e.g., classwork completion) by 20%, 25%, and 20%, based on the average teacher rating.

Miller et al. (2015) also found that CICO decreased problem behaviors (e.g., talking out) and increased academic engagement among three students. Results of comparing the percentage change between the first baseline phase and the intervention phase indicated that problem behaviors decreased by 27.83%, 35.16%, and 20.24%, and academic engagement increased by 27.33%, 34.16%, and 18.14%. During the second baseline, problem behaviors decreased by 24.64%, 13.08%, and 22.58%, and academic engagement increased by 24.1%, 16.26%, and 30.24%.

Negative student outcomes. Two studies (Ennis et al., 2012; Swoszowski et al., 2013) showed improvement in participants' behavior. Ennis et al. (2012) implemented the CICO intervention among six students with EBD to reduce their problem behaviors (e.g., off-task behaviors, refusal). Comparing the percentage of mean change between the baseline and intervention phase revealed that only three participants showed a high major reduced percent change of problem behaviors, at -22.62%, -59.62%, and -20.80%, respectively. Another two students showed a slight improvement, at -6.89% and -11.86% reduction of problem behaviors from the baseline phase. One participant did not benefit from the intervention; her problem behaviors increased by 14.29%. The results indicated that the CICO intervention was only modestly effective with students with EBD. That is, the two students decreased behavior problems by less than 12 % compared to the baseline phase, and finally, one student did not decrease her inappropriate behaviors during and after implementing the CICO intervention.

Swoszowski et al. (2013) implemented the CICO intervention with four students with disabilities. The results indicated that all four students improved as a result of the CICO intervention, as reflected by a decrease in off-task behavior. However, two participants did not meet the CICO criterion, which was to decrease their off-task behaviors by more than -40% from baseline. The two students were eligible to receive the Check-in/Check-up/Check-out (CICUCO) intervention as a secondary intervention because they did not meet the original CICO criterion and they exhibited changes of -31.77% and -31.32% after the CICO intervention. Only one student with DD received the CICUCO intervention and exhibited a -57.54% change from the baseline and then met the CICO criterion. However, another student with OHI did not receive the CICUCO intervention because her therapeutic staff was planning to provide her an intensive

intervention that required her to attend different classes. Her teacher also suggested that it would be impossible to implement the CICUCO intervention for her.

Table 3.

Summary of the Seven Studies that met What Works Clearinghouse Single-Case Design Standards

Studies	IV	DV	Target's Population and setting	*n*	Sample age range (Grade)	SPED Status	Measures	Results	Effect size, *p* value/ PND	Country
Ennis et al. (2012)	CICO	Decrease PB (e.g., Refusal, OT, & DN)	Alternative education setting or Residential facility	6 (*M* = 4, *F* = 2)	12 to 16 (7th to 9th)	EBD	DO, ABC	- High positive effective for three participants to reduce problem behaviors - Somewhat effective for two participants - Negative for one participant	NR	USA
Miller et al. (2015)	CICO	Decrease PB (i.e., OT and talking out, out of seat) and increase AE	PES	3 (*M* =2, *F* = 1)	(2nd to 6th)	NR	DO, DPC	- Positive for three participants in deceasing PB and increasing AE for all participants	NR	USA
Melius et al. (2015)	PL-CICO	Increase exhibiting appropriate behaviors and decrease PB and	Alternative Educational settings, RTEF	2 (M = 2, F = 0)	7 to 9 (2nd to 3rd)	EBD, ODD	DO, Stamp system, DPC	- Positive for both participants on increase their daily stamp earning percentage doing PL-CICO, which means that both students increased appropriate behaviors.	NR	USA
McDaniel and Bruhn (2016)	CICO	decrease PB	PMS	2 (*M* =0, *F* = 2)	13 (7th)	NR	DO, DPC	- Positive for both participants to improve problem behaviors based on DPR points.	Yes P = .00	USA
Swoszowski et al. (2013)	CICUCO	Decrease OTB	ARE in ES	4 (*M* = 2, *F* = 2)	7 to 9 (1st to 3rd)	OHI, ED, DD	DO, DPR	- Putative for two participants - Negative for two participants who did meet CICUCO inclusion criteria with percent change of less than 40% from CICO condition	NR	USA
Todd et al. (2008)	CICO	Decrease PB	PES	4 (*M* = 4, *F* = 0)	(k to 3rd)	One participant with LD	FACTS, DO, ODR,	- Positive for all participants who reduced their problem behaviors after receive CICO intervention	NR	USA
Turtura et al. (2014)	ABC	Decrease OT and DB and increase WC and HC	PMS	3 (*M*= 2, *F* = 1)	(6th to 8th)	NR	FACT, ABC, DPR, DO	- Positive in the reduction of off-task behavior and increased academic engagement	NR	USA

Note. CICO = check in, check out; CICUCO = check-in, check-up, check-in; PL-CICO= peer led check in, check out; ABC = academic behavior check-in/check-out; DV = dependent variables; IV = independent variables; PES = public elementary school; PMS = public middle school; AE = alternative Educational; RTEF= a residential treatment and educational facility; DO= direct observation; PB= problem behaviors; AE = academic engagement; DB= disrespect behaviors; EBD = emotional and behavior disorders; LD = learning disabilities; HOI = other health impairment; ED = emotional disorder, M = male; F = female, NR = no report, DO = direct observation; OT = off-task behaviors; DPR = a daily progress report; DPR = daily progress card; WC= work completion; HC = homework completion.

Definition of behavior problems and academic engagement from the reviewed studies. Check-in/Check-out intervention literature included in this review defined problem behaviors as students being off-task or disruptive or academically disengaged, such as not looking or tracking the teacher during instruction, not following teacher directions, not completing a given task, or not having the necessary materials for a class (Miller et al., 2015; McDamoe & Bruhn, 2016; Swoszowski et al., 2013; Turtura et al., 2014). Based on the current review, the literature suggested that the CICO intervention can decrease problem behavior and increase academic engagement across students with and without disabilities (Miller et al., 2015; Melius et al., 2015; Swoszowski et al., 2013; Turtura et al., 2014).

Academic engagement. Miller et al. (2015) defined academic engagement as: talking with teachers about a given topic, looking at teachers during instruction, and following teachers' instructions. Academic engagement was also defined as students completing all their coursework and having all the essential materials, such as pens and workbooks (Turtura et al., 2014). Students who were academically disengaged were not looking or tracking the teacher during instruction, following teacher directions, completing a given task, or did not have the materials necessary for class (Miller et al., 2015; McDamoe & Bruhn, 2016).

Problem behaviors. Swoszowski et al. (2013) and Turtura et al. (2014) defined problem behaviors as any behavior not directly related to academic tasks (i.e., off-task behaviors, disruptive behaviors, refusal to complete a given task, talking out without permission, negative peer interactions, being out of seat). According to the literature, problem behavior is one of the most common issue among students with and without emotional and behavioral disorders (EBD) across educational settings (i.e. public school, alternative school, etc.) and school levels (e.g., elementary, middle, high).

Gaps in the Research Studies

Overall, results of the reviewed studies indicated that there is a lack of data on the effectiveness of the CICO intervention in the generalization phase and maintenance phase. Moreover, a total of 12 of 19 reviewed studies did not meet single-subject design standards related to data reliability and fidelity of the implementation of the CICO intervention. Using the WWC standards, the results of the present review suggest that studies with five data points were a more reliable measure of the effects of CICO that allowed generalization.

The reviewed studies present evidence that CICO intervention can be effective for diverse students in diverse learning environments. However, there is a paucity of research on the effectiveness of CICO for adolescent students who are in juvenile detention centers or schools. Only three studies (Ennis et al., 2012; Melius et al., 2015; Swoszowski et al., 2013) applied CICO to students in a residential facility or residential care. Unlike juvenile detention centers, the latter may contain individuals not convicted of crimes. A gap clearly exists in that, in the literature, the majority of studies were implemented in general education schools; whereas, there were no studies that investigated the efficacy of CICO in juvenile detention centers in the past 10 years.

Juvenile detention centers contain individuals convicted of crimes and who are more likely to exhibit inappropriate behaviors at high levels of intensity. For students in juvenile detention centers, if interventions like CICO are utilized and are effective, it can result in a major shift in the trajectories of the student's futures. That is, if CICO is proven to have a positive impact on student behavior, it could increase the likelihood the students have a more positive educational experience which could result in more positive long-term outcomes. Adolescents in the juvenile justice system are more likely to learn aggressive behaviors that promote

inappropriate behaviors if they do not receive effective interventions, such as CICO (Kim & Linan-Thompson, 2013). Therefore, the present research focus is to address the gap of reviewed studies, which is to examine the effectiveness of CICO for students in juvenile detention centers.

Statement of Purpose

The purpose of the present study was to examine the effectiveness of the CICO intervention on addressing two preprimary dependent variables, decreasing problem behaviors (e.g., out of seat, not following teachers' directions, making noise, talking without permission) and increasing academic engagement (e.g., asking questions, raising hands, completing homework) of adolescent students in juvenile justice centers. Moreover, the study also aimed at examining the effectiveness of the CICO intervention on two additional secondary dependent behaviors: increasing appropriate behaviors and reducing academic disengagement. Last, this study was designed to follow WWC design standards and meet WWC standards to answer the following research questions.

Research Questions

1) Is there a functional relation between the implementation of CICO and a reduction in the frequency of student behavior problems (e.g., out of seat, not following teachers' directions, making noise, talking without permission) and increasing appropriate behaviors (e.g., talking after getting permission from teachers) with middle school and high school aged students in juvenile detention centers?

2) Is there a functional relation between the implementation of CICO and an increase in student academic engagement (e.g., asking questions, raising hands, completing homework or a given assignment) and reduction academic disengagement (e.g., sleeping in class) with middle school and high school-aged students in juvenile detention centers?

3) Are the students' and teachers' perceptions of the implementation of the CICO intervention positive?

CHAPTER THREE

METHOD

This chapter addresses the quantitative design that was used to determine the efficacy of the CICO intervention for increasing academic engagement and appropriate classroom behavior of adolescent students in juvenile detention centers. Also discussed in this section is the research design, procedures for participant selection, measures, the treatment fidelity, and social validity of the research study.

Research Design

The current study consisted of a single-subject design (ABAB) with generalization and maintenance phases to assess the effectiveness of the CICO intervention among adolescent students with problem behavior and academic disengagement. An A-B-A-B design includes a withdrawal design (baseline and intervention phases) with generalization and maintenance phases added to document functional control of the CICO intervention and responses in appropriate alternative behavior and academic engagement problems. The A-B-A-B experimental design was used because it allowed the researcher to observe the participants prior to treatment, during treatment, withdrawal of treatment, and examine generalizability and maintenance of intervention effects (Byiers, Reichle, & Symons, 2012; Gaines & Barry, 2008).

Overall, this study consisted of six phases to measure the efficacy of the CICO intervention: two baseline phases (*A*), two intervention phases (*B*), a generalization phase (*G*), and a maintenance phase (*M*). The *A* phases were used to document participants' behaviors before the intervention and after the withdrawal of treatment. The CICO intervention occurred in the *B1 and B2* phases. The *G* phase was the generalization phase, directly following the *B2* phase. The *M* phase was used to measure whether or not participants increased academic

engagement and/or more positive behaviors from the CICO intervention over time. Using the A-B-A-B withdrawal design with the addition of the generalization and maintenance phases is important in the development of evidence-based practice in special education (Horner et al., 2005).

The A-B-A-B withdrawal design, with the generalization and maintenance phases, is appropriate for assessing the effectiveness of the intervention by replicating the intervention (Gaines & Barry, 2008; Kazdin, 2011). Moreover, the A-B-A-B design with generalization and maintenance phases provides evidence of the functional relation between the dependent and independent variables. It is important that researchers use a rigorous design (e.g., reversal design) to help to ensure the increased credibility of results. Moreover, this study adhered to the What Works Clearinghouse (WWC) standards: (a) the independent variable (IV) was manipulated systematically to identify its effect on the dependent variables over phases, (b) researchers collected inter-observer agreement on at least 20% of data points in each phase, with at least 80% IOA across all sessions, (c) the design included at least three opportunities to demonstrate the impact of an intervention on the dependent variables at three different points in time, and (d) it included six phases with at least five sessions in each phase (WWC, 2017).

Setting

The Ministry of Labor and Social Development in Saudi Arabia gave approval to the present study after the study was careful review. This study was conducted at an urban juvenile justice center located in the North of Saudi Arabia. The center serves middle-school-and high-school-aged male students who are allowed to complete their education while in detention. The juvenile justice center houses approximately 60 male adolescents between the ages of 11 and 18.

The center allows detained youths to participate in multiple activities (e.g., sports), including attending academic instruction. None of the detained youths are allowed to leave the center until they have served their sentences. Inside the center is a school structured like a typical public school in Saudi Arabia. The school provides detained youths regular classes (e.g., math, reading) that resemble traditional classes in the public schools. Students attend class from 8:00 a.m. to 2:00 p.m. and each class lasts about 35 mins. After school, students engage in non-academic activities, such as playing soccer or board games. The juvenile justice center has security cameras throughout the building to monitor all staff and students. These cameras record students' behaviors 24 hours per day. However, there are no cameras allowed in the classroom to provide confidentially of the education process.

Institutional Review Board and Consent Procedure

After obtaining a letter of approval from the Ministry of Labor and Social Development in Saudi Arabia to conduct the study, the researcher requested approval from Old Dominion University's Institutional Review Board (IRB). After the IRB reviewed all the study's factors (e.g., purpose, procedures, possible benefits and risks, and confidentiality), the researcher obtained approval to conduct the study. Thereafter, the researcher implemented the study at the juvenile detention center.

Procedure for Selecting Adolescent Students

First, the principal of the center was asked to nominate participants based on the following criteria: (a) adolescent male students, ages 12 to 18, in grades seven through 12, (b) identified by the juvenile detention center teachers/and or principal as needing more instruction in behavior interventions, (c) sentenced to remain in detention for six months to over one year due to their participation in antisocial behaviors (e.g., using drugs, fighting, using a gun,

stealing), and (d) exhibiting various high-frequency problematic behaviors (e.g., making disruptive noise, talking to peers without permission) and academic disengagement (e.g., not completing a given task, not responding to teachers' questions within 5 seconds), (e) given two or more office discipline referrals, and (f) have not received evidence-based interventions or special education services to rehabilitate their behavioral and academic engagement problems.

Second, the selection process began when the principal of the center nominated 10 students who were at-risk for academic disengagement and problem behavior and otherwise met all nomination criteria. Third, two teachers of each nominated student were asked to complete the Social, Academic, and Emotional Behavior Risk Screener (SAEBRS) to identify students whom they considered behavioral, emotional, and academic risks (see Appendix A for more information about SAEBRS). Several studies (e.g., Kilgus, Chafouleas, & Riley-Tillman, 2013) provided evidence of the SAEBRS' validity, reliability, and diagnostic accuracy among elementary, middle, and high school students. Each student also needed to score 0-12 on social behavior, 0-9 on academic behavior, 0-17 on emotional behavior, and 0-36 on total behaviors on both teachers' evaluations. Three students did not meet one or more of the SAEBRS requirements for being at risk and were excluded from the study.

Fourth, seven students were identified at high risk of behavioral, emotional, and academic risk through the use of SAEBRS. The principal of the center was asked to randomly select four students from those identified by the SAEBRS. This random selection was done by writing all the students' names on equal size cards (one student name per card), shuffling them, and then picking four cards. Thus, four students were selected randomly from those identified by SAEBRS as having a high risk of social, academic, and emotional problem behaviors. Everyone involved in the proposed study (the principal of the center, students and their parents, teachers,

CICO mentors, observers) was asked to sign informed consent forms (see Appendices B, C, D, E, F, & G) documenting their agreement to participate in this study. Last, the principal of the center was asked to sign permission to complete an educational observation and intervention (see Appendix H).

Participants

Students. Four adolescent male students, ages 16 to 17 in grades seven through 12, were identified by the juvenile detention center staff as needing behavior interventions, were recruited for this study. The four students identified as (A, AN, M, & N) were sentenced to remain in detention from six months to more than one year due to their in antisocial behavior (e.g., using drugs, fighting, using a gun, stealing). Participants A, AN, M, and N were exhibiting various problem behaviors (e.g., making noise, talking to peers without permission) and academic disengagement (e.g., not completing a given task, not responding to teachers' questions). The four participants had not received evidence-based interventions or special education services to rehabilitate their academic disengagement before the CICO intervention was implemented. Table 4 presents the demographic data and SAEBRS results for the fourth students.

Table 4.
Demographic Data and SAEBRS Ranking Results for the Fourth Participants

Participant	Age (Grade)	Gender	Race	SAEBRS								Reason(s) to be in JDC	Number of previse being in JDC
				Teacher 1				Teacher 2					
				SA	AB	EB	Total	SA	AB	EB	Total		
A	17 (11)	Male	Middle east	3	7	7	17	9	6	11	21	Stealing	Two times
AN	17 (12)	Male	Middle east	6	7	13	26	7	3	2	12	Ethics issues and fighting	First time
M	16 (8)	Male	Middle east	8	6	8	22	5	5	5	15	Stealing	First time
N	17 (8)	Male	Middle east	9	6	5	20	8	3	10	21	Stealing	Three times

Note: SAEBRS = Social, academic, and emotional behavior risk screener; SB = Social behavior; AB = Academic behavior; EB = Emotional behavior; JDC = juvenile detention center.

A CICO mentor, teachers, and observers were employed in the center and received training regarding the CICO intervention. All of them held at least a bachelor's degree, either in education, special education, or social work. Moreover, they had three years or more of teaching experience with students in juvenile detention centers. As presented in Table 4, all the following participants:

Table 5.
Facilitators Demographics

Teachers 'names	Title/Location	Gender	Race	Years of Experience	Highest Degree	Job Title	Roles
AR	Supervisor/School and JDC	Male	Middle east	24	Bachelors	Social observer	Main coders
SA	Staff/JDC	Male	Middle east	24	Bachelors	Social observer	Coders
FA	Staff/JDC	Male	Middle east	11	Bachelors	Case Researcher	CICO mentor
Math	Teacher/School	Male	Middle east	6	Bachelors	Teacher	Filling DPR
Reading	Teacher/School	Male	Middle east	5	Bachelors	Teacher	Filling DPR
English	Teacher/School	Male	Middle east	9	Bachelors	Teacher	Filling DPR
Rakan	Researcher	Male	Middle east	8	Master	Lecture	Treatment fidelity

Note: JDC = juvenile detention center.

A CICO mentor. The CICO mentor was a male paraprofessional with 11 years of working experience with detained youths. The CICO mentor received one hour of training on CICO procedures by the researcher. His role was to meet twice (morning and afternoon) with each student individually to facilitate their appropriate behaviors and to discuss their behavioral and academic performance at school. The mentor was required to provide monitoring sheets, determine daily goals, and to review each student's points at the end of the day using a daily progress report.

Teachers. Three classroom teachers (Math, Reading, English), each with more than three years of teaching experience with detained youths, received one-hour training on CICO and the procedures on how to use the daily progress report (DPR). The responsibility of each teacher was

to complete the DPR for each student at the end of each class regarding their targeted behaviors. The DPR was carried from class to class by each student.

Observers. Two male employees work as social observers with 24 years of working experience with incarcerated students who served as coders. AR coder had a bachelor's degree in psychology, and SA coder had a bachelor's degree in social work. Both coders received two hours of training from the researcher on how to code data and calculate an inter-observer agreement. Both coders were required to code data and calculate inter-observer agreement for 3 of 5 (60%) randomly collected sessions in each phase (e.g., baseline, intervention) of the study. Then, the main coder continued to code the remaining data for the other sessions in each phase.

Independent Variable

The check-in, check-out (CICO) intervention was the independent variable in this study. This intervention included the following six steps: (a) The CICO mentor was to meet with each student individually each morning before classes started; (b) Each student needed to take his CICO point sheet that is "a Daily Progress Report, and shares with his Math, Reading, and English teachers respectively", (c) At the end of each class, all three classroom teachers were responsible for filling out the sheet and providing feedback on each student's behavioral performance; (d) At the end of each school day, the CICO mentor and each student met individually to review and discuss each student's performance, and the CICO mentor provided positive feedback on the student's achievements; (e) Each student was required to take the sheet to his night supervisor or mentor at the center, and finally, (f) Then each student was required to return the sheet to the CICO mentor the following morning.

Dependent Variables

Problem Behaviors and appropriable behaviors. Problem behaviors were defined as: talks out of turn, talks to peers without the teacher's permission, tells inappropriate jokes during a given academic task, makes rude facial expressions, and/or uses profanity or verbal insults toward the teacher/ or peers. These also included physical actions, leaves a designated area, moves around the classroom or gets out of their seat during independent work time, taps a pencil on the desk, makes disruptive noises (e.g., singing), coughs intentionally, or stomps feet on the floor. Each student was taught two things: (a) to be respectful (e.g., using appropriate language, sitting quietly), and (b) to be safe instead of engaging in problem behaviors (e.g., not hitting and fighting).

Academic engagement and academic disengagement. Academic engagement was defined as: responding to a teacher's requests within 10 seconds, completing classwork, finishing homework, and/or sitting properly (i.e., upright posture and feet planted on the ground). It also was defined as: looks at the teacher during instruction, working with a peer when instructed to do so, and talking with the teacher about a given academic topic. Each student was taught to be a learner on completing work, talking after getting permission from his teachers, instead of exhibiting academic disengagement, such as failure to respond to a teacher's request within 10 seconds, or not completing a given task.

Measures

Functional Behavioral Assessment

After identifying the four students, the researcher conducted a brief functional behavior assessment interview with two teachers who had a positive relationship with the students and had the most daily interactions with them. The researcher interviewed two teachers before

conducting the CICO study. The interviews were intended to be used to review the definitions of each dependent variable (problem behaviors, appropriate behaviors, academic engagement, academic disengagement) that were identified from the literature review with teachers. In addition, it was intended to identify additional problem behaviors that were exbibit by each student.

This interview also identified additional academic and problem behaviors exhibited by each student. Each interview lasted between five and 15 minutes. Moreover, the researcher had observed each student's behavior during regular classes for three days. This observation helped the researcher to understand and to determine additional behaviors and to ensure that operational definitions were inclusive of each student's problem behaviors. Specifically, the following Table 6 explains the final operational definition of the four dependent variables that this study aimed to measure for all four students.

Table 6.
Definition of the Fourth Independent Variables

Problem Behaviors	Each student encouraged to be	Appropriate Behaviors
Verbal actions: talks out of turn; talks to peers, teacher without the teacher's permission; tells inappropriate jokes during a given academic task; makes rude facial expressions; and/or uses profanity or verbal insults toward the teacher/ or peers. **Physical actions:** leaves a designated area; moves around the classroom or gates out of their seat during independent work time; taps a pencil on the desk; makes disruptive noises (e.g., singing); coughs intentionally; or stomps feet on the floor; throws rubbish in floor; hits peers, fights with others.	respectful and safe to decrease problem behaviors	**Respectful Behaviors:** uses appropriate language (e.g., excuse me, thanks teachers and students when they do something for him), communicates in a respectful manner, listens to teacher instructions, sits quietly; talks after getting permission from teachers, asks teachers before doing anything in class. **Safe Behaviors:** no hit and fight; pushes others; stays in line or order; walks slowly; tells teachers if he needs to leave the class or feels uncomfortable with anything; puts rubbish in bin or trash.
Academic Disengagement		Academic Engagement
Fails to respond to a teacher's request within 10 seconds (e.g., being silent when ask a question); does not complete a given task; does not orient eyes toward teacher or relevant materials for academic task (e.g., does not look to teacher or looks a way during teacher's instruction for 60 second); does not do what teachers' ask him to do; sleeps in class; sits in the far corners of the classroom; preoccupied with doing something else during teacher's explanation (e.g., drawing on the wall or hands; does not bring all required classes supplies and materials	Learner to increase academic engagement behaviors	Follows a teacher's requests within 10 seconds; completes class work; finishes homework; and/or sits properly (i.e., upright posture and feet planted on the ground; looks at the teacher during instruction; works with a peer when instructed to do so; and talks with the teacher about a given academic topic, is ready for class (e.g., puts all needed class materials on his disk); completes homework; talks after getting permission from his teachers; raises his hand to ask or answer a question. Brings all required classes supplies and materials

Fidelity of Implementation

To ensure the fidelity of implementation of the intervention, the researcher monitored the procedures and steps of the CICO intervention to ensure that the CICO mentor and teachers implemented the treatment as planned throughout the intervention phases. During the math class, a 15-item treatment fidelity checklist (see Appendix I for the Treatment Fidelity Checklist) for 35% was used of each treatment's phase (*B1* and *B2* phases). The checklist was designed to measure the extent to which the interventionists adhered to the intervention guidelines. The percentage of steps implemented correctly was calculated by dividing the number of steps completed correctly by the total of 15 items; that number was multiplied by 100 to determine the percentage. A standard of 90% was used to ensure that the CICO intervention's steps were implemented accurately. The researcher observed students and interventionists to measure the CICO intervention's procedures and content independently and coded implementation fidelity more than 40% of randomly selected sessions during each phase of the study.

A fidelity implementation checklist for the CICO intervention, constructed by the researcher. It was comprised of 15 items. The procedure for intervention included five essential steps: 1) morning check-in, 2) regular teacher feedback by using DPR, 3) data collection and entry, 4) afternoon check-out, and 5) night supervisor signature. In addition, the researcher assessed 10 additional items to measure the fidelity of implementation of the CICO mentor and teachers that were when each meet to evaluate each student's performance. This checklist also had a comment section that allowed the researcher to record any comment he may notice from observations of teachers, participants, or CICO mentor during implementing the intervention. The examples of CICO mentor's and each teacher's responsibilities are the CICO mentor should provide a positive greeting, discuss the student's academic and behavioral goals during the

morning check-in; and, the teacher should mark the DPR, provide verbal feedback to the students during the regular teacher feedback time; and during the afternoon check-out, the CICO mentor should review and calculate the percentage of the day's progress and provide a positive statement to the student at the end of the afternoon meeting.

Social, Academic, and Emotional Behavior Risk Screener (SAEBRS)

Each teacher completed SAEBRS to identify students who were at behavioral, emotional, and academic risk. This assessment measured a total of 19 items of inappropriate behavior that are distributed across three behavioral categories: 1) social behavior, 2) academic behavior, and 3) emotional behavior. This assessment has a number scale: 0 = Never, 1 = Sometimes, 2 = Often, 3 = Almost Always. Teachers were asked to circle only one number on the scale to identify the frequency with which the student displays each of the different behaviors. To consider students who are at risk in each element, a student needed to score 0-12 on social behavior, 0-9 on academic behavior, 0-17 on emotional behaviors; or, 0-36 on total behaviors of the three behavioral elements. (See Appendix A for more information about the items).

Social Validity

The usefulness of the intervention was assessed using two social validity forms: a teacher form and a student form. Both teacher and student forms were a rating profile that was developed by Umbreit, Ferro, Liaupsin, and Lane (2007). The latter measured students' and teachers' perceptions of the CICO intervention and focused on goals, outcomes, and procedures before and after implementing the CICO intervention. Lane, Capizzi, Fisher, and Ennis (2012) recommended using a social validity profile twice in order to help compare participants' response before and after implementing a given intervention. Based on these recommendations, teachers and students were required to complete a rating profile twice: once at the end of baseline

and before implementing the intervention; and, at the end of the implementation of the CICO intervention. This assessment provided information on the participants' perceptions of the CICO intervention before and after its implementation. It also helped to compare their perceptions and reveal any changes in their thinking.

To assess the social validity of the intervention, teachers and students were given two questionnaire forms. In the first form, the three teachers were required to complete the 15 items in the rating profile using a Likert scale (1 = *strongly disagree* to 6 = *strongly agree*), with a score ranging from 15 to 90. Students also were asked to rate seven items on a 6-point Likert-type scale (1= *I do not agree* to 6 = *I agree*) with a total score rating from 7 to 42 (See Appendices J and K for more information about the teacher and student questionnaires before intervention). At the end of the study, a second form consisted of the same Likert questionnaire with just grammar changed to past tense in each item, plus four open-ended questions to allow the teachers and students an opportunity to share any additional information they wanted to provide (See Appendices L and M for more information about teacher and student questionnaire at the end of study).

The researcher collected the data obtained from each teacher based on the total points indicated on each questionnaire form (pre and post intervention forms), then compared the totals. Higher totals indicated that the intervention was acceptable. The researcher used this method because all items in the teacher's forms indicated positive statements when they circled the number six (strongly agree). For the student's forms, the researcher analyzed all pre and post social validity questionnaire data points using statistical calculator software in Excel to calculate the scores for each item. There were two columns with reverse coding on items 1, 5, 6, and 7. These reverse coding items were formatted with 0s or 7s before entering any data. However, the

scores for each statement on the pre and post forms were updated automatically when data were entered. This helped the researcher to recalculate the scores of positively and negatively worded statements.

Daily Progress Report and Data Collection System

A daily progress report (DPR) was used to monitor each students' academic and behavioral performance. Observers were required to count each problem behavior, inappropriate behavior and academic engagement and academic disengagement behaviors that was seen or heard. Two types of DPRs was used to assess a student's academic and behavioral expectations. Both of these types have rating numbers of 0 to 2; for example, a rating of zero means a student exhibited three or more problem behaviors and did not exhibit any academic engagement, one means a student exhibited one or two behavior problems and exhibited one or two behaviors of academic engagement, and two means a student did not exhibit any behavior problems (e.g., talking out) and exhibited three or more behaviors of academic engagement (e.g., classwork completion).

The first type of DPR was used by the CICO mentor and classroom teachers. The teacher was required to fill out a DPR by circling the number that referred to the student's behavioral performance. This allowed teachers to offer their perception of student's behavioral performances at the end of each class. After evaluating each student's performance, the teacher gave the DPR sheet to the student. Then, the student gave the sheet to a CICO mentor at the end of each school day during the afternoon meeting to discuss whether if the student met the day's goal (see Appendix N for more information about teacher's sheet).

The observers used the second type of DPR during direct observations to collect data on each participant's academic and behavioral performance during all phases of the study. Two

observers used the DPR to code each student's behavior during a 10-minute period of a 35-minute math class. The observers used 30-seconds frequency count embedded within an interval recording system to ensure accuracy during coding. During each observation cycle, they alternated between recording the occurrence of academic engagement and problem behaviors for 30 seconds and coding for 20 seconds. Each observed a student's behavior for a total of 10 minutes. The total time was divided into 20 intervals, each 30 seconds in duration. Each student received a score of zero when exhibiting three or more instances of academic disengagement and no appropriate behaviors. A score of one indicated that a student exhibited one or two instances of academic disengagement and appropriate behaviors. Students received a score of two when they exhibited no academic disengagement and exhibited three or more appropriate behaviors. The total rating number of 20 intervals is 40 points for each dependent variable. Two formulas for calculating percentages were used: 1) 40 subtracted a daily point total of obtained rating number, and then and an obtained sum ÷ 40 × 100 for calculating percentages of each problem behaviors and academic disengagement percent; and 2-) a daily obtained point total of a daily point total of obtained rating number ÷ 40, and then and an obtained sum × 100 for calculating percentages of each academic engagement and appropriate behaviors.

In each interval period, the observers made a mark for each occurrence of the four dependent variables that a student exhibited. Then, by the end of their observations, which lasted a total of 20 intervals, each observer counted the number of marks and selected the appropriate rating number for each interval period. Rating numbers go from 0 to 2; for example, a rating of zero means a student exhibited three or more problem behavior and did not exhibit any academic engagement.

Two trained observers coded the four participants during the baseline, intervention, generalization, and maintenance phases using the DPR. This interval recording system allowed observers to record and evaluate the frequency of each student's behavior through each interval. The observers used this interval recording system to record problem behavior (e.g., talks without permission) and academic engagement, such as completing a given assignment instead of exhibiting academic disengagement problems (e.g., failure to respond to teacher's request within 5 seconds), and then selected the appropriate rating number (0 – 2). For example, a rating of zero indicates that the student did not exhibit academic engagement (e.g., follows teachers' instructions) or exhibited three or more problem behaviors, such as talking without permission (see Appendix O for more information about observer's sheet).

At the end of each observation day, observers were required to leave all data sheets in a locked filing cabinet in the principal's office to protect students' confidentiality. When needed, the principal of the detention center used a secure email to send data sheets to the primary researcher. Again, to protect the confidentiality, this communication did not include any identifiable information on participants.

Inter-Observer Agreement

Inter-observation agreement (IOA) data was collected on at least 3 out of 5 (60%) randomly selected sessions on each student during every phase. The IOA was calculated by using two steps: 1) dividing the smallest obtained total marks of whole the four dependent variables selected from one observer with the highest obtained total number of marks from another observer; and 2) the main observer then divided the obtained sum by 100 to get a percentage agreement. If the IOA falls below 85%, observers were retrained using the original training procedures.

Procedure

Pre-baseline. Initially, informed consent forms were signed by school staff members, teachers, observers, a CICO mentor, and students and their parents. The consent and assent forms state the following. “We will do our best to keep your information private. Students’ names will not be used in the study, as they will be labeled with a number or letter. The results of this study will be used only for academic and scholarly purposes and may be shared with Old Dominion University representatives. All data will be in a locked filing cabinet.” All the participants in the study were asked to participate in the study, including students’ parents, to sign informed consent forms.

The researcher met with the center’s principal, observers, CICO mentor, and teachers to explain the purpose of the study. Participants in the meeting discussed the various aspects of the study, including how the data was gathered and how the CICO intervention would be implemented, as well as the possible results. The researcher answered all questions about the intervention. The two observers were given two to three hours of training to learn how to observe and calculate interobserver agreement on all data collected. Both observers had bachelor’s degrees and were familiar with student observations. Both observers were required to have at least 85% agreement. In addition, both the CICO coordinator and classroom teachers (e.g., Math and Reading teachers) who had worked with the four students attended two hours training on how to use DPR and the six CICO components.

Baseline phases. Two observers were required to observe the participants using the 30-seconds frequency count embedded within an interval recording system. Participants were observed during regular math class and the two observers were coding each participant’s academic and problem behavior during each 30-seeconds interval. Each observer counted the

number of problem behaviors exhibited, both physical (e.g., making noise) and verbal (e.g., telling inappropriate jokes) for each participant in each class (e.g., math, reading) that teachers identified as having problematic behaviors. Also, they observed the number of academic engagements, such as raising hand appropriately and completing a given assignment instead of exhibiting academic disengagement, such as not completing their assignments.

Data were collected for a minimum of five data sessions. If the data were not stable, two to five additional data sessions were conducted to achieve stability. The two researchers used the 30-seconds frequency count embedded within an interval recording system and calculated their inter-observer agreement (IOA) at the end of the observation session; the criterion for agreement was 85%. A minimum of five sessions was collected per baseline phase. Other phases (i.e., intervention, generalization, maintenance) also had a minimum of five sessions for one week using the DPR data sheet. The same process of observations also was used in all the following phases.

Intervention phases. The CICO intervention included six steps. The first step required the CICO mentor to meet each participant individually in the morning before classes started. The mentor discussed the student's goals for the day and explain expectations of appropriate behavior, that is, to be respectful (e.g., not talking until they get a teacher's permission), safe (not hitting and fighting), and a good learner who is engaged academically (e.g., completing given tasks). During some morning meetings, a CICO mentor showed a student video scenarios and/or pictures of how a student behaves well. Each student was taught via modeling and role play to exhibit both appropriate behaviors and academic engagement, rather than exbibit problem behavior or academic disengagement.

For example, the CICO mentor played the role of being a student who demonstrates inappropriate behaviors (e.g., making noise), appropriate behaviors (e.g., sitting in seats appropriately). The student then was asked to give feedback regarding the inappropriate behaviors using DPR. In the second step, each participant was required to take his DPR to his classroom teachers (math, reading, English). Third, teachers were required to evaluate the participant's behavioral and academic engagement. In the fourth step, by the end of the school day, the student and mentor met again to review the student's behavioral achievement.

When a participant achieved more than 50% of the teacher's DPR evaluation for two consecutive days, the student received positive verbal feedback for exhibiting appropriate behaviors during the afternoon meeting. When a participant did not achieve this goal, as determined by the classroom teacher's rating on the DPR, the student was encouraged to do better the next day. During the fifth step, the participants took their sheets with them to get their night supervisors' signatures. At the end of each intervention week, each student was required to write a one-paragraph reflection aimed at answering the question, "What did you learn from your intervention today?". During the sixth step, students were required to return the short reflection assignment at the next meeting (see Appendix P for an example reflection assignment).

To assess the effects of the CICO intervention, the two coders continued to use the 30-second interval recording system to evaluate each student's behavior and academic engagement during math class. Both intervention phases included a minimum of five intervention sessions. During the first intervention phase, data were collected until each student's problem behaviors decreased to equal or below 40% compared with the average percentage of the first baseline phase. Moreover, academic engagement behaviors increased to equal or above 40% compared with the average percentage of the first baseline phase. Each session of the two last intervention

sessions (i.e., fourth and fifth) of the five sessions must be decreased problem behaviors to equal or below 40% compared with the average percentage of the first baseline phase. Academic engagement behaviors increased to equal or above 40% compared with the average percentage of the first baseline phase. However, during the second intervention phase, students had to decrease problem behaviors by 50% and increase academic engagement by 50% compared with the second baseline. Besides, each session of the two last intervention sessions (i.e., fourth and fifth) also must be decreased problem behaviors by 50% and increase academic engagement by 50% compared with the second baseline

If students did not achieve the average percentage in one of the intervention phases, data were collected for two consecutive days, up to a maximum of 10 intervention sessions. The method of calculating the 40% between the two phases was by multiplying .4 with a total percentage mean of the first baseline phase. After that, an obtained sum was subtracted from a total percentage mean of the first baseline phase for decreasing problem behaviors, and then an obtained sum was added to a total mean percent of the first baseline phase for increasing academic engagement. The obtained total percentage for each dependent variable was the percentage criteria for each student to reach it. During the second intervention phase, it was started by multiplying .5 with a total percentage mean of the second baseline phase for 50% using the same remined steps was followed in the previous steps for each dependent variable. The reason for starting with 40% because it was expected that students and teachers would not accurately implement all intervention steps and show much improvement. Starting with 40% helped both students and teachers gain experience and adapt to the intervention program. At the end of the second intervention phase, each student decreased problem behaviors to 90% and increased academic engagement to 90% compared with the mean percentage of the first baseline

phase. During both intervention phases, the researcher used a daily progress report and a sheet to monitor the fidelity of the CICO intervention implementation (see Appendix I for the sheet used to check the fidelity of CICO intervention implementation).

Generalization phase. Students did not receive the CICO intervention during the generalization phase. They were observed during science class, with a different teacher who did not participate in the CICO intervention. This class was 35-minutes long and the 30-seconds interval recording system was used to assess each student's behavior during the 10 minutes of the class. Two coders observed each student individually and calculated the IOA between them. They observed the four dependent variables, which are problem behavior, inappropriate behaviors, academic engagement, and academic disengagement. Data were collected for at least five sessions in the generalization phase.

Maintenance phase. Two weeks after the generalization phase, each participant was observed again in math class to assess the effects of the intervention over time. The CICO intervention was not implemented during this time. Data were recorded on the four targeted behaviors during each 10- minutes Math class. There also were five sessions maintenance had been taken in this phase.

Follow-up phase. If participants did not meet the maintenance criteria (i.e., a mean maintenance percentage that exceeded the average of both baseline phases), a phase was to be implemented using the original intervention, supplemented with visual aids. The two coders were supposed to observe and code a session using a maximum of five data-points. However, the researcher did not implement this phase because all the four participants met the criteria. The length of the study was approximately nine weeks.

Research Ethics

None of the information gathered or contained in the study was used for any purpose other than to fulfill the requirements of the research. To ensure confidentiality, the study used fictitious names instead of student's names and did not contain any other identifiable information. All data were collected via observing the students through direct observations. Two inter-rater observers observed and used data collection sheets to track student behavior in class. Observers were not allowed to download or save any videos; they were only allowed to observe each student inside the center under the supervision of the center director and/or classroom teacher. Neither observer had any contact with the students.

All data sheets were stored securely in a locked filing cabinet in the principal's office or the center to protect students' confidentiality. The data sheets remained locked in the center's filing cabinet for the main researcher unless scanned to the primary researcher through secure email. This communication did not include any identifiable information of the participants.

At the end of the study, the researchers provided about one hour of training for all teachers at the center on how to use of the CICO intervention for use with other students who needed to address behavioral and academic engagement problems. During this training, all teachers were given a handbook that provided detailed instruction and instruments that needed to used with CICO intervention. Also, it had all the information and instructions about the CICO interventions. There is good reason to believe that the CICO intervention may be a useful intervention for other teachers to implement and help them improve students' academic and behavioral performance.

Data Analysis

The researcher primarily used visual data analysis (e.g. A-B-A-B graphs) to show the independent variable's effects on the dependent variables for each participant). The researcher used the graphed data to show the students' behaviors during each phase and indicate the present averages for exhibiting problem behaviors and academic engagement for each phase. This helped the researcher represent the effectiveness of the CICO intervention visually. The researcher also used Microsoft Excel 2016 to examine the obtained data and draw graphs. The researcher calculated the mean levels to identity the mean within each phase, then the obtained mean levels per phase were compared with each other. In addition, the researcher examined variability by reporting the range of data during each phase. The researcher also calculated PND and P-values to examine the effects of the CICO intervention on each student. The researcher accomplished this using the Web application created by Tarlow and Penland (2016) to determine overlap and the proportion of data between each phase (e.g., Phase A1 and Phase B1). According to Alresheed, Hott, and Bano, (2013), a PND percentage equal to less than 50% is unreliable treatment, a PND of 50% -70% is of questionable effectiveness, and a PND more than 90% indicates a strongly effective treatment.

CHAPTER FOUR

RESULTS

This study was designed to examine the effectiveness of the CICO intervention on two primary dependent variables, decreasing problem behavior (e.g., being out of seat, not following a teacher's directions, making noise, talking without permission) and increasing academic engagement (e.g., asking questions, raising hands, completing homework) of adolescent students in juvenile justice centers. Moreover, I sought to examine two additional secondary dependent variables, namely increasing appropriate behavior (e.g., sitting quietly) and decreasing academic disengagement behavior, such as refusing to do what is asked of him. In this chapter, the results of each research question, including students' and teachers' perceptions of the implementation of the CICO intervention are reported and analyzed separately.

Research Question One

The purpose of this section is to analyze the results of the use the CICO intervention on two dependent variables: problem behavior and appropriate behavior of four students in a juvenile detention center. An ABAB reversal design was used to assess the function relation between the CICO intervention and improvement of each student's problem behavior. I analyze and describe the results of the following research question: Is there a functional relation between the implementation of CICO intervention and a reduction in the frequency of student behavior problems (e.g., being out of seat, not following a teacher's directions, making noise, talking without permission a teacher) and increasing appropriate behavior (e.g., talking after getting permission from teachers) with middle school and high-school aged students in juvenile detention centers? Descriptive statistics also are presented in Tables 5 and 6, which examine the effectiveness of the CICO intervention on the following two dependent variables: problem

behavior and appropriate behavior. It presents the mean percentages, standard deviation, present change, PND (effect size), and *p*-value of the two dependent variables for each participant.

Table 7 presents statistical data that shows the effectiveness of the CICO intervention on reducing student problem behavior. The use of the CICO intervention produced a significant effect when comparing the mean percentage of problem behavior between the first baseline (A-1) and intervention (B-1) phases. Results showed a significant reduction of problem behavior 26% ($p < 0.000$) for Participant A, 26% ($p < 0.003$) for Participant AN, 26%, ($p < 0.003$) for Participant M, and 23% ($p < 0.001$) for Participant N. Results also indicated a significant reduction of problem behavior between the second baseline (A-2) and intervention (B-2) phases. Results was 25% *(*$p < 0.003$) for Participant A, 34% ($p < 0.003$) for Participant AN, 31% ($p < 0.003$) for Participant M, and 35% ($p < 0.003$) for Participant N.

Table 7.
Summary Statistics for Problem Behaviors Across the Four Participants

DV	Target Participant	Mean Percentage (SD)						Percent Change		PND		*P*	
		A-1	B-1	A-2	B-2	G	M	A-1 vs B-1	A-2 vs B-2	A-1 vs B-1	A-2 vs B-2	A-1 vs B-1	A-2 vs B-2
Problem behaviors	A	59% (3)	33% (5)	46% (4)	21% (7)	48% (3)	25% (5)	26% decreased	25% decreased	100%	100%	0.000	0.003
	AN	52% (3)	26% (4)	45% (4)	11% (2)	39% (2)	15% (3)	26% decreased	34% decreased	100%	100%	0.003	0.003
	M	58% (4)	32% (5)	48% (2)	17% (5)	36% (4)	15% (5)	26% decreased	31% decreased	100%	100%	0.003	0.003
	N	56% (4)	33% (6)	49% (3)	14% (4)	38% (3)	23% (3)	23% decreased	35% decreased	100%	100%	0.001	0.003

Note. A-1 = Baseline; B-1= CICO; B-2 = withdrawal; A-2 = withdrawal; B-2 = return to CICO; G = generalization; M = maintenance.

Table 8 displays statistical data that show the effectiveness of the CICO intervention on increasing appropriate student behavior. Results indicated that the CICO intervention was effective in helping all the four participates to exbibit appropriate behavior. A comparison between mean percentage of each of the A-1 and B-1 phases showed a significant increase of

exhibition of appropriate behavior. Participation increased 21% ($p < 0.000$) for Participant, 29% ($p < 0.003$) for Participant AN, 17% ($p < 0.003$) for Participant M, and 20% ($p < 0.001$) for Participant N. In addition, results showed significant increase between the A-2 and B-2 phases. Participation improved 19% ($p < 0.000$) for Participant A, 20% ($p < 0.000$) for Participant AN, 26% ($p < 0.003$) for Participant M, and 23% ($p < 0.003$) for Participant N.

Table 8.
Summary Statistics for Appropriate Behaviors Across the Four Participants

DV	Target Participant	Mean Percentage (SD)						Percent Change		PND		*P*	
		A-1	B-1	A-2	B-2	G	M	A-1 vs B-1	A-2 vs B-2	A-1 vs B-1	A-2 vs B-2	A-1 vs B-1	A-2 vs B-2
Appropriate Behaviors	A	32% (4)	53% (5)	39% (4)	58% (5)	47% (4)	48% (5)	21% increased	19% increased	100%	100%	0.000	0.003
	AN	30% (1)	59% (2)	43% (4)	63% (3)	49% (3)	51% (3)	29% increased	20% increased	100%	100%	0.003	0.003
	M	37% (4)	54% (3)	35% (2)	61% (5)	52% (2)	50% (3)	17% increased	26% increased	100%	100%	0.003	0.003
	N	39% (6)	59% (3)	42% (2)	65% (4)	53% (2)	51% (2)	20% increased	23% increased	100%	100%	0.001	0.003

Note. A-1 = Baseline; B-1= CICO; B-2 = withdrawal; A-2 = withdrawal; B-2 = return to CICO; G = generalization; M = maintenance.

Effects on problem behavior and appropriate behavior. Tables 7 and 8 and Figure 2 show, graphically and visually, the percentage of problem behavior and appropriate behavior across the four participants. All four participants benefited from the use of the CICO intervention. Each participate met the criteria of decreasing problem behavior, reducing problem behavior by 40% or more in the B-1 phase and 50% or more in the B-2 phase. During the first baseline observations in the math class, the mean percentage level of problem behavior was 59% (SD = 3), 52% (SD = 3), 58% (SD = 4), and 56% (SD = 4) for A, AN, M, and N. During the first intervention phase, each participate reduced his problem behavior; the mean percentage levels were 33% (SD = 5), 26% (SD = 4), 32% (SD = 5), and 33% (SD = 6) for A, AN, M, and N. When the CICO intervention was withdrawn, the mean percentage levels of problem behavior

increased from A2 and they were 46% (SD = 4), 45% (SD = 4), 48% (SD = 2), and 49% (SD = 3) for A, AN, M, and N. However, after reintroduction of the CICO intervention in the B2 phase, the mean percentage levels of problem behavior lowered to 21% (SD = 7), 11% (SD = 2), 17% (SD = 5), and 14% (SD = 4) for A, AN, M, and N.

Appropriate behavior also increased among all the four participants. During the first baseline in the math class, mean percentage levels of appropriate behavior were 32% (SD = 4), 30% (SD = 1), 37% (SD = 4), and 39% (SD = 6) for A, AN, M, and N. During the first intervention phase, all four participants increased the exhibition of problem behavior, and the mean percentage levels were 53% (SD = 5), 59% (SD = 2), 54% (SD = 3), and 59% (SD = 3) for A, AN, M, and N. However, when the CICO intervention was withdrawn, the mean percentage levels of appropriate behavior decreased from A2; and they were 39% (SD = 4), 43% (SD = 4), 35% (SD = 2), and 42% (SD = 2) for A, AN, M, and N. After reintroduction of the CICO intervention in the B2 phase, the mean percentage levels of appropriate behavior increased to 58% (SD = 5), 63% (SD = 3), 61% (SD = 5), and 65% (SD = 4) for A, AN, M, and N, respectively. The effects of the CICO intervention on problem behaviors and appropriate behavior for all four participants are displayed in Figure 2 and described in the following sections.

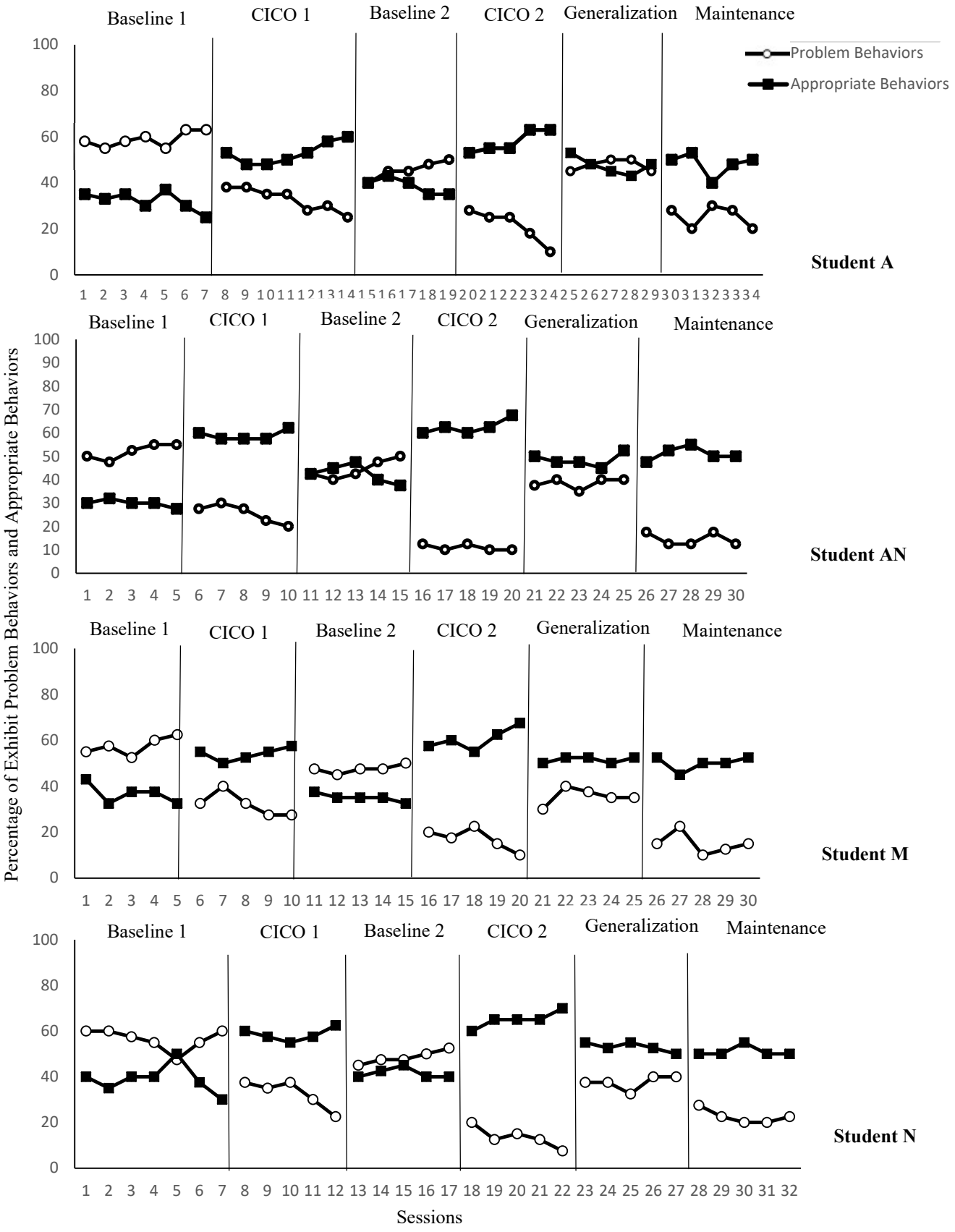

Figure 2. Effects of CICO on problem behaviors and appropriate behaviors across the four participants

Participant A. Tables 7 and 8, and Figure 2 display the results of problem behavior and appropriate behavior across each of the six phases for each participant. As shown in Figure 2 and Table 7, during the first baseline phase, the mean percentage of problem behavior was 59%. However, the implementation of the CICO intervention resulted in an immediate reduction of the mean percentage of problem behavior to 33% during the first the CICO intervention phase. When both the first baseline and the CICO intervention phases were compared, results indicated that there were no overlapping data (PND = 100%) between these phases. The reduction of problem behavior during the first CICO intervention was more than 40% from the mean percentage of the first baseline phase, which was more than 35%. During the second baseline phase, the mean percentage of problem behavior was 46%. However, when the second CICO intervention phase was reintroduced, the problem behavior decreased to 21%. The reduction of problem behavior was more than 50% from the mean percentage of the second baseline phase, which was more than 23%. The last two sessions of the second CICO intervention phases, participant A decreased his problem behaviors to 18% and 10%. Results also showed that there were no overlapping data (PND = 100%) when these phases were compared. During the generalization phase, the mean percentage of problem behavior was 48% and it was slightly more than the mean percentage of problem behavior in the second baseline. Participant A kept exhibiting problem behavior in science class. However, results indicated that Participate A did well in the maintenance phase. The mean percentage was 25%, which was less than both baseline phases.

The effect of the CICO intervention on appropriate behavior for Participate A is shown in both Figure 2 and Table 8. Results showed that the mean percentage of appropriate behavior was 32% during the first baseline. As is shown in Figure 2, implementation of the CICO intervention

resulted in an immediate increase in the mean percentage of appropriate behavior to 53%. Comparison of data between the first baseline and first CICO intervention implementation indicated that there were no overlapping data (PND = 100%). During the second baseline phase, the mean percentage of appropriate behavior decreased to 39%. After implementation of the second CICO intervention, the mean percentage of appropriate behavior increased to 58%. When both the second baseline and second CICO intervention phases were compared, results indicated that there were no overlapping data (PND = 100%). Results also indicated that the percentage of appropriate behavior was 47% in the generalization phase and 48% in the maintenance phase, which are higher percentages from both baseline phase and the student.

Participant AN. As shown in the second upper panel of Figure 2 and Table 7, during the initial baseline phase, the mean percentage of problem behavior was 52%. During the first CICO intervention phase, the exhibition of problem behavior decreased immediately to 26%. Moreover, results indicated that there were no overlapping data (PND = 100%) between the first baseline and CICO intervention phases. When the mean percentage levels were compared between the first baseline and CICO intervention phases, Participant AN had decreased his problem behavior by than 40% of the mean percentage of the first baseline phase, which was more than 31%. During the second baseline observation, the mean parentage increased highly to 45%. However, after implementation of the second CICO intervention, the mean percentage of problem behavior immediately reduced to 11%. When comparing data between both the second baseline and CICO intervention phases, results showed that there were no overlapping data (PND = 100%). Participant AN also decreased engaging in problem behavior to equal or more than 50% of the mean percentage of the second baseline phase, which was more than 23%. The last two sessions of the second CICO intervention phases, Participant AN decreased his problem

behaviors to 10% on both sessions. During the generalization phase, Participant AN's mean percentage of problem behavior was 39% and 15% during the maintenance phase. Participant AN showed improvement in the generalization and maintenance what he had learned from the CICO intervention. Problem behaviors were compared with both baseline phases. Results indicated that both the mean percentage in generalization and maintenance phases were less than the mean percentage of each baseline phase.

As seen in Figure 2 and Table 8, data also illustrated, graphically and visually, the percentage of appropriate behavior. During the first baseline phase, the mean percentage of appropriate behavior was 30%. Participant AN exhibited an immediate increase in appropriate behavior during the first CICO intervention phase. Participant AN's mean percentage of appropriate behavior was 59%. After evaluating the CICO intervention's effectiveness, results indicated that there were no overlapping data (PND = 100%) between the phases. During the second baseline phase, Participant AN's mean percentage of appropriate behavior decreased slightly. The mean percentage of appropriate behavior was 43%. However, Participant AN also exhibited an immediate increase in appropriate behavior during the second CICO intervention phase. The mean percentage of appropriate behavior was 63%. After measuring data between both the second phase and the CICO intervention phases, results indicated that there was no overlap (PND= 100%) between the phases. Results indicated a significant increase in appropriate behavior during the intervention over baseline phases. Results indicated that the CICO intervention was effective in increasing Participant AN's appropriate behavior and helped him to generalize what he had learned from the intervention in different classes. During generalization, Participant AN's mean percentage of appropriate behavior was 49%. During the maintenance phase, Participant AN's mean percentage of appropriate behavior was 51%.

Participant M. As seen in Figure 2 and Table 7, during the initial baseline phase, the mean percentage of problem behavior was 58%. However, during the first CICO intervention, participate M's mean parentage of problem behavior decreased immediately to 32%. Comparison between phases indicated that there were no overlapping data (PND = 100%) between the first baseline and CICO intervention phases. Participant M decreased the exhibition of problem behavior more than 40% from the mean percentage of the first baseline phase, which was more than 35%. During the second baseline, the mean parentage of problem behavior increased to 48%. However, after implementing the second CICO intervention, the mean percentage of problem behavior decreased significantly to 17%. Results indicated that the CICO intervention was effective in decreasing problem behavior via showing non-overlapping data (PND = 100%) between the second baseline and CICO intervention phases. The percentage decrease of problem behavior during the second CICO intervention was more than 50% from the mean percentage of the second baseline phase, which was more than 23%. Participant M decreased his problem behaviors to 15% and 10% on the last two sessions of the second CICO intervention phases. Participant M's mean percentage of problem behavior was 36% during the generalization phase and 15% during the maintenance phase. Results indicated that participant M showed improvement in decreasing problem behavior in both the mean percentage in generalization and maintenance phases compared to the two baseline phases.

As seen in Figure 2 and Table 8, Participant M's mean percentage of appropriate behavior during the first baseline was 37%. An immediate increase in appropriate behavior was observed when the CICO intervention was implemented. The mean percentage of appropriate behavior was 54%. As shown in Figure 2 ant Table 8, there were no overlapping data (PND = 100%) between the first baseline and CICO intervention phases. However, the exhibition of

appropriate behavior decreased to 35%. During the second baseline, results indicated that Participant M exhibited less the percentage of appropriate behavior than the first baseline phase. After reintroducing the CICO intervention, the mean percentage of appropriate behavior increased significantly to 61%. Results indicated that there were no overlapping data (PND= 100%) between the second baseline and CICO intervention phases. Results also indicated that the percentage of appropriate behavior was 52% in the generalization phase and 50% in the maintenance phase. The CICO intervention was effective for improving Participant M's behavior by showing significant improvements in increasing appropriate behavior.

Participant N. As shown in Figure 1 and Table 7, the mean percentage of problem behavior during the initial baseline phase was 56%. After introducing the CICO intervention, problem behavior showed an immediate decrease in the mean percentage to 33%. This reduction of problem behavior was more than 40% compared with the mean percentage of the first baseline phase, which was more 34%. Results also indicated that there were no overlapping data (PND = 100%) between the first baseline CICO intervention phases. During the second baseline phase, the mean percentage of problem behavior increased slightly to 48%. However, when the second CICO intervention was introduced, the problem behavior decreased significantly to 14%. Participant N had decreased the exhibition of problem behavior by more than 50% from the mean percentage of the first baseline phase, which was more than 24%. Participant N decreased his problem behavior to 13% and 8% on the last two sessions of the second CICO intervention phases. Results also showed that there were no overlapping data (PND = 100%) between the second baseline and CICO intervention phases. Results also indicated that the percentage of appropriate behavior was 38% in the generalization phase and 23% in the maintenance phase.

As seen in Figure 2 and Table 8, results indicated that the mean percentage of appropriate behavior was 39% during the first baseline. After implementing the CICO intervention, there was an immediate increase in appropriate behavior for Participant N. The mean percentage of appropriate behavior increased to 59%. After comparing data between the first baseline and CICO intervention phases, results indicated that there was no overlapping data (PND = 100%). During the second baseline phase, the mean percentage of appropriate behavior decreased to 42%. However, after reintroducing the second CICO intervention, the mean percentage of appropriate behavior increased substantially to 65%. Results also indicated that there were no overlapping data (PND = 100%) between the second baseline and the CICO intervention. During the generalization phase, the percentage of appropriate behavior was 47%, with 48% in the maintenance phase. Both percentages indicted that participants N increased appropriate behavior more than in both the baseline phases.

Average number of problem behavior and appropriate behavior across four participants. Figure 3 shows the mean percentage of the occurrence of problem behavior and appropriate behavior during all sessions per phase. The use of the CICO intervention helped decrease the number of occurrences of problem behavior and increased appropriate behavior across all four participants. In the following two paragraphs, the mean number of occurrences of problem behaviors and appropriate behavior are provided for each participant.

Problem behaviors. As seen in Figure 3, during the first baseline, the mean number of the occurrences of problem behavior was 34%, 31%, 34, and 31%, for Participant A, Participant AN, Participant M, and Participant N respectively. During the first CICO intervention phase, these percentages decreased to 15%, 12%, 15%, and 15%, for Participant A, Participant AN, Participant M, and Participant N respectively. However, after the withdrawal of the CICO

intervention, the mean number of the occurrences of problem behavior increased to 26%, 25%, 28, and 27% during the second baseline phase, for Participant A, Participant AN, Participant M, and Participant N respectively. When the CICO intervention was reintroduced during the second CICO intervention phase, the mean number of the occurrences of problem behavior decreased to 10%, 7%, 9%, and 7%, for Participant A, Participant AN, Participant M, and Participant N respectively. During the generalization phase, the mean number of the occurrences of problem behavior was 22%, 18%, 17%, and 16%, for Participant A, Participant AN, Participant M, and Participant N, respectively. During the maintenance phase, the mean number of the occurrences problem behavior was 13%, 11%, 9%, and 13%, for Participant A, Participant AN, Participant M, and Participant N, respectively.

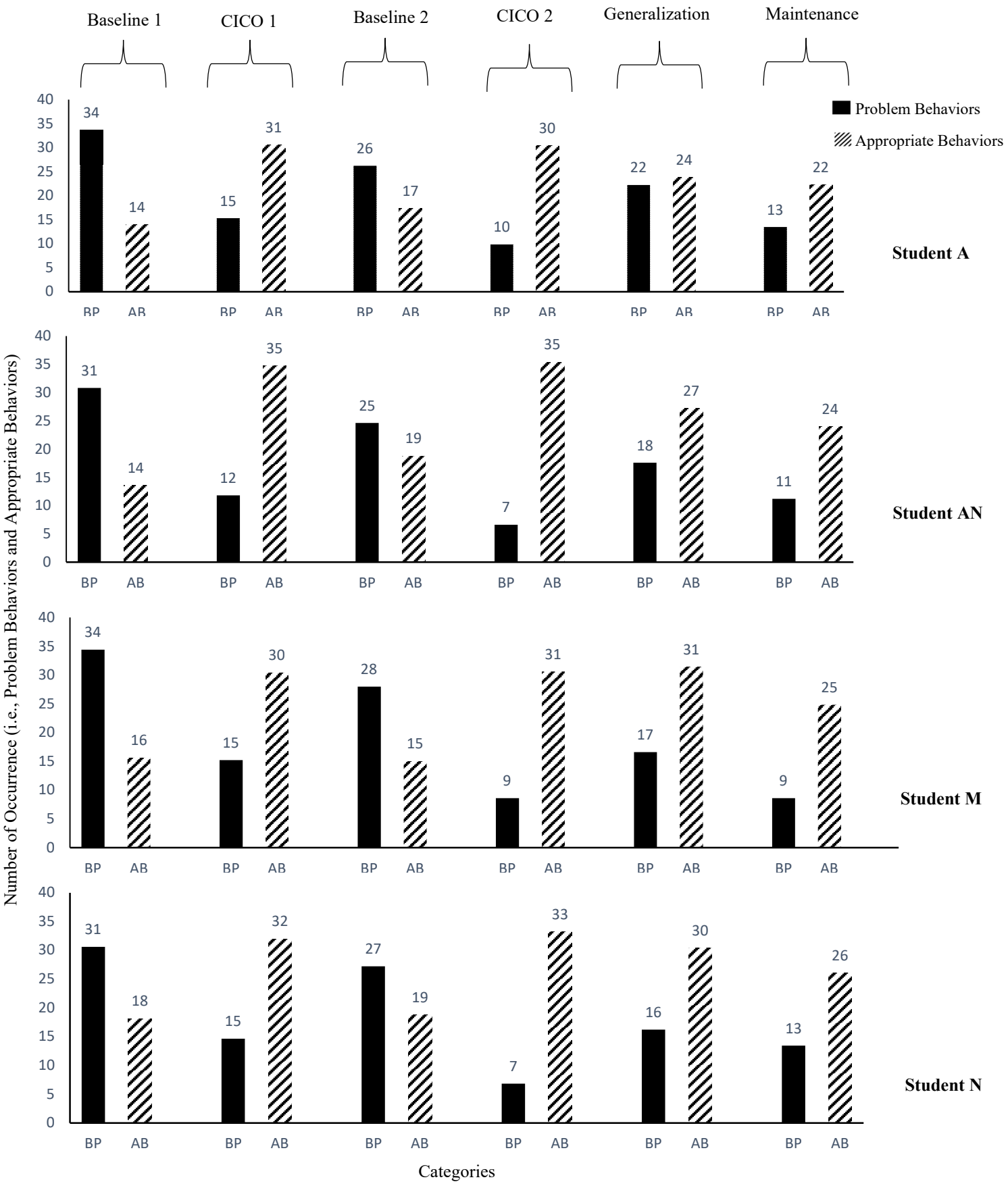

Figure 3. Average Frequency Number of Exhibit Problem Behaviors and Appropriate Behaviors across four participants

Appropriate behaviors. As seen in Figure 3, during first baseline observations, the mean number of the occurrences of appropriate behavior was 14%, 14%, 16%, and 18% for participant A, Participant AN, Participant M, and Participant N, respectively. During the first CICO intervention phase, these percentages increased to 31%, 35%, 30%, and 32% for Participant A, Participant AN, Participant M, and Participant N, respectively. However, after withdrawal of the CICO intervention, the mean number of the occurrence of appropriate behavior decreased to 17%, 19%, 15%, and 19% during the second baseline phase, for Participant A, Participant AN, Participant M, and Participant N, respectively. When the CICO intervention was reintroduced during the second CICO intervention phase, the mean number of the occurrences appropriate behavior increased to 30%, 35%, 31%, and 33% for Participant A, Participant AN, Participant M, and Participant N, respectively. During the generalization phase, the mean number of occurrences of appropriate behavior was 24%, 27%, 31%, and 30% for Participant A, Participant AN, Participant M, and Participant N, respectively. During the maintenance phase, the mean number of the occurrences of appropriate behavior was 22%, 24%, 25%, and 26% for Participant A, Participant AN, Participant M, and Participant N, respectively.

Research Question Two

In this section, the results of the use of the CICO intervention on two dependent variables: academic engagement and academic disengagement are analyzed. An ABAB reversal design was used to assess the effectiveness of the CICO intervention on improving each student's academic engagement. In this section, the results of the following research question are analyzed and described : Is there a functional relation between the implementation of the CICO intervention and an increase in student academic engagement (e.g., asking questions, raising hands, completing homework or a given assignment) and a reduction of academic disengagement

(e.g., sleeping in class) with middle school and high school aged students in juvenile detention centers?

Table 9 presents the mean percentages, standard deviation, present change, PND (effect size), and *p* value of the two dependent variables for each participant. These items were calculated to examine the effectiveness of the CICO intervention in increasing academic engagement. After comparing the mean percentage of academic engagement between the first baseline and CICO intervention phases, results indicated that the use of the CICO intervention produced a significant effect on student academic engagement. That is, the percent change of academic engagement was 31% ($p < 0.000$) for Participant A, 28% ($p < 0.003$) for Participant AN, 23% ($p < 0.003$) for Participant M, and 21% ($p < 0.001$) for Participant N. Results also indicated a significant reduction in academic disengagement between the second baseline and CICO intervention phases. The percent change was 29% ($p < 0.003$) for Participant A, 27% ($p < 0.003$) for Participant AN, 30% ($p < 0.003$) for Participant M, and 31% ($p < 0.003$) for Participant N.

Table 9.
Summary Statistics for Academic Engagement Across the Four Participants

DV	Target Participant	Mean Percentage (Range %)						Percent Change		PND		*P*	
		A-1	B-1	A-2	B-2	G	M	A-1 vs B-1	A-2 vs B-2	A-1 vs B-1	A-2 vs B-2	A-1 vs B-1	A-2 vs B-2
Academic Engagement	A	27% (3)	58% (3)	34% (3)	63% (6)	51% (3)	54% (4)	31% increased	29% increased	100%	100%	0.000	0.003
	AN	31% (3)	59% (4)	41% (2)	68% (3)	50% (1)	56% (3)	28% increased	27% increased	100%	100%	0.003	0.003
	M	32% (4)	55% (2)	37% (2)	67% (4)	53% (2)	55% (4)	23% increased	30% increased	100%	100%	0.003	0.003
	N	35% (6)	56% (3)	37% (2)	68% (4)	52% (2)	54% (3)	21% increased	31% increased	100%	100%	0.001	0.003

Note. A-1 = Baseline; B-1= CICO; B-2 = withdrawal; A-2 = withdrawal; B-2 = return to CICO; G = generalization; M = maintenance.

As seen in Table 10, the use of CICO intervention to decrease academic disengagement was effective across all four participants. In comparing the results between the first baseline and CICO intervention phases, results indicated a significant decrease in the exhibition of academic disengagement. The percent changes between these phases were 24% ($p < 0.000$) for Participant A, 31% ($p < 0.003$) for Participant AN, 23% ($p < 0.003$) for Participant M, and 21% ($p < 0.001$) for Participant N. In addition, the results indicated significant outcomes when data from the second baseline and CICO intervention phases are compared. The percent changes were 33% ($p < 0.003$) for Participant A, 37% ($p < 0.003$) for Participant AN, 36% ($p < 0.003$) for Participant M, and 36% ($p < 0.003$) for Participant N.

Table 10.
Summary Statistics for Academic Disengagement Across the Four Participants

DV	Target Participant	Mean Percentage (Range %)						Percent Change		PND		*P*	
		A-1	B-1	A-2	B-2	G	M	A-1 vs B-1	A-2 vs B-2	A-1 vs B-1	A-2 vs B-2	A-1 vs B-1	A-2 vs B-2
Academic Disengagement	A	61% (3)	37% (5)	53% (3)	20% (7)	42% (7)	19% (5)	24% decreased	33% decreased	100%	100%	0.000	0.003
	AN	59% (1)	28% (4)	50% (1)	13% (4)	34% (3)	15% (3)	31% decreased	37% decreased	100%	100%	0.003	0.003
	M	54% (3)	31% (3)	49% (4)	13% (4)	33% (2)	14% (2)	23% decreased	36% decreased	100%	100%	0.003	0.003
	N	55% (3)	34% (7)	48% (1)	12% (2)	34% (4)	18% (2)	21% decreased	36% decreased	100%	100%	0.001	0.003

Note. A-1 = Baseline; B-1= CICO; B-2 = withdrawal; A-2 = withdrawal; B-2 = return to CICO; G = generalization; M = maintenance.

Effects on academic engagement and academic disengagement. Tables, 9 and 10, and Figure 4 display graphically and visually the percentage of academic engagement and academic disengagement exhibited across the four participants. All four participants benefited from the CICO intervention. Each participate met the criteria of increasing academic engagement by 40% or more in the first CICO intervention phase and 50% or more in the second CICO intervention phase. During the first baseline observations in the math class, the mean percentage levels of

academic engagement were 27% (SD = 3), 31% (SD = 3), 32% (SD = 4), and 35% (SD = 6) for A, AN, M, and N. During the first intervention phase, each participate increased the mean percentage of academic engagement to 58% (SD = 3), 59% (SD = 4), 55% (SD = 2), and 56% (SD = 3) for A, AN, M, and N. During the second baseline phase, the mean percentage of academic engagement decreased to 34% (SD = 3), 41% (SD = 2), 37% (SD = 2), and 37% (SD = 2) for A, AN, M, and N. After the CICO intervention was reintroduced, the mean percentage levels of academic engagement increased to 63% (SD = 6), 68% (SD = 3), 67% (SD = 4), and 68% (SD = 4) for A, AN, M, and N.

Results also indicated that the CICO intervention helped each participant reduce their academic disengagement. During the first baseline observations in the math class, the mean percentage levels of academic disengagement were 61% (SD = 3), 59% (SD = 1), 54% (SD = 3), and 55% (SD = 3) for A, AN, M, and N. During the first intervention phase, all the four participants decreased the mean percentage of academic disengagement to 37% (SD = 5), 28% (SD = 4), 31% (SD = 3), and 34% (SD = 7) for A, AN, M, and N. However, when CICO was withdrawal, the mean percentage levels of academic disengagement increased from the mean percentage of the first CICO phase to 53% (SD = 3), 50% (SD = 1), 49% (SD = 4), and 48% (SD = 1) for A, AN, M, and N. After reintroducing of the CICO intervention, the mean percentage levels of academic disengagement decreased to 20% (SD = 7), 13% (SD = 4), 13% (SD = 4), and 12% (SD = 2) for A, AN, M, and N. As shown in the following Figure 4 displays visually the effect of the CICO intervention on academic disengagement and academic engagement across the four participants.

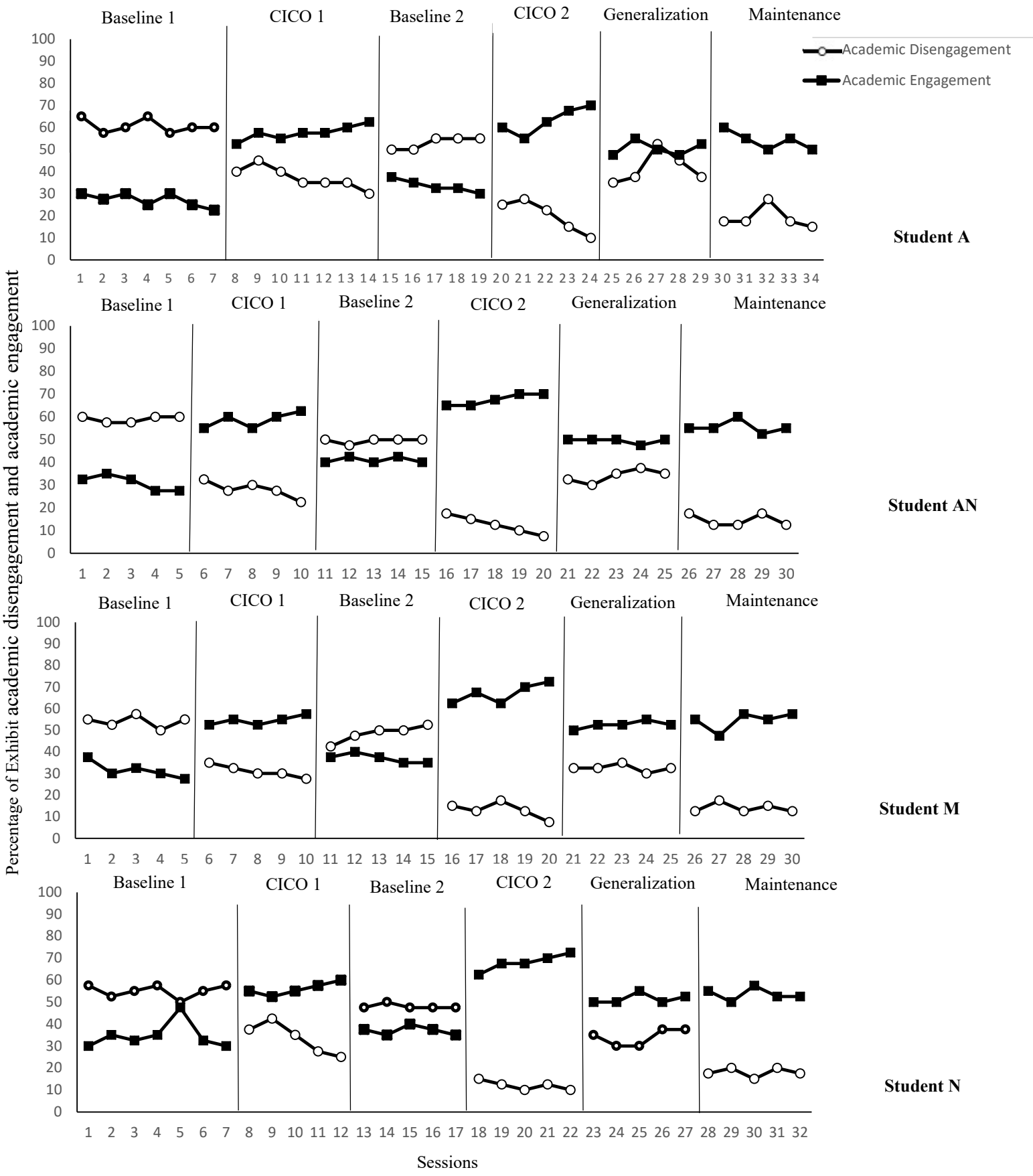

Figure 4. Effects of CICO on academic disengagement and academic engagement across four participants

Participant A. As seen in Figure 4 and Table 9, the mean percentage of academic engagement was 27% during the first baseline phase. However, after introducing the intervention, there was an immediate increase in academic engagement during the first CICO intervention phase. In this phase, the mean percentage of problem behaviors increased to 58%. Results also indicated that there were no overlapping data (PND = 100%) between these phases. The increase in academic engagement during the first CICO intervention phase was more than 40% from the mean percentage of the first baseline phase, which was more than 38%. During the second baseline phase, Participant A decreased the mean percentage of academic engagement to 34%. However, the mean percentage of academic engagement increased significantly to 63% when the CICO intervention was reintroduced. The increase in academic engagement was more than 50% from the mean percentage of the second baseline phase, which was 51%. Participant A increased academic engagement to 68% and 70% on the last two sessions of the second CICO intervention phases. In addition, results were significant by indicating no overlapping data (PND = 100%) between these phases. Participant A increased academic engagement during the generalization and maintenance phases compared to the mean percentage of academic engagement in each baseline phase. The mean percentage of academic engagement was 51% during the generalization phase with a slight increase to 54% during the maintenance phase.

As shown in both Figure 4 and Table 10, results indicated that Participant A exhibited a high percent (61%) of academic disengagement during the baseline phase. After introducing the CICO intervention, the mean percentage of academic disengagement decreased immediately to 37%. Results were significant by indicating no overlapping data (PND = 100%) between these phases. During the second baseline phase, the mean percentage of academic disengagement increased to 53%. However, after implementing the CICO intervention, the mean percentage of

academic disengagement decreased significantly to 20%. Results also indicated a significant effect when both the second baseline and CICO intervention phases were compared. Results indicated that there were no overlapping data (PND = 100%) between these phases. Results also indicated that the mean percentage of academic disengagement was 42% in the generalization phase and 19% in the maintenance phase. The percent of academic disengagement during the generalization phase indicated that Participant A did not substantially decrease his academic disengagement compared to the baseline phases. On the contrary, results indicated that Participate A decreased academic disengagement to 19%, which is less than the mean percentage in each CICO intervention phase.

Participant AN. As seen in Figure 4 and Table 9, participant AN's mean percentage of academic engagement was 31% during the initial baseline phase. After introducing the CICO intervention, the mean percentage of academic engagement increased to 59%. After comparing data points between these phases, results indicated a significant effect of using the CICO intervention. There were no overlapping data (PND = 100%) between these phases. In addition, Participant AN had increased the number of the occurrences of academic engagement by more than 40% during the first CICO intervention phase compared to the mean percentage of the first baseline phase, which was more than 43%. During the second baseline, the mean parentage decreased to 41%. However, after introducing the CICO intervention, the mean percentage of academic engagement immediately increased to 68% during the second CICO intervention phase. When comparing data points between these phases, results were significant and there were no overlapping data (PND = 100%) between these phases. Participant AN also increased academic engagement by more than 50% during the second CICO intervention phase when compared the mean percentage of the second baseline phase, which was more than 61%.

Participant AN increased academic engagement to 70% on both last two sessions of the second CICO intervention phases. Results also indicated that both the mean percentage in the generalization and maintenance phases were less than the mean percentage of each baseline phase. Participant AN's mean percentage of academic engagement was 50% during the generalization phase and 56% during the maintenance phase.

As seen in Figure 4 and Table 10, Participant AN's mean percentage of academic disengagement was 59% during the first baseline phase. There was an immediate reduction in academic disengagement after introducing the CICO intervention during the first CICO phase. Participant AN's mean Percentage of academic disengagement was 59% during the first CICO intervention phase. Evaluating data points between theses phases indicated that there were no overlapping data (PND = 100%). During the second baseline phase, Participant AN's mean percentage of academic disengagement increased to 50%. However, Participant AN decreased academic disengagement to 13% during the second CICO intervention phase. After measuring data points between theses phases, results also indicated that there were no overlapping data (PND= 100%) between these phases. Results indicated a significant decrease in academic disengagement during the intervention compared to baseline phases. Results indicated that the CICO intervention was effective in decreasing Participant AN's academic disengagement and helped him to generalize what he had learned from the intervention in the different class. During the generalization phase, Participant AN's mean percentage of academic disengagement was 34%. Participant AN also decreased the mean percentage of academic disengagement during the maintenance phase to 15%.

Participant M. As seen in Figure 4 and Table 7, during the initial baseline phase, the mean percentage of academic engagement was 32%. However, the mean percentage of academic

engagement increased to 55% during the first CICO intervention. Evaluating data points between these phases indicated that there were no overlapping data (PND = 100%). Participant M increased the amount of academic engagement more than 40% during the first CICO intervention phase when compared to the mean percentage in the first baseline phase, which was more than 45%. During the second baseline phase, the mean percentage of academic engagement decreased to 37%. However, after reinstituting the CICO intervention, the mean percentage of academic engagement increased to 67%. Results indicated that the CICO intervention was effective in increasing academic engagement with non-overlapping data (PND = 100%) between the second baseline and CICO intervention phases. Participant M increased the mean percentage of academic engagement by more than 50% during the second CICO intervention phase, compared to the mean percentage of the second baseline phase, which was more than 56%. Participant M increased academic engagement to 70% and 73% on the last two sessions of the second CICO intervention phases. Participant M's mean percentage of academic engagement was 36% during the generalization phase and 15% during the maintenance phase. These results indicated that Participant M showed significant improvements in increasing the mean percentage academic engagement in the generalization and maintenance phases, compared to the two baseline phases.

As seen in Figure 4 and Table 10, Participant M's mean percentage of academic disengagement during the first baseline was 54%. After introducing the CICO intervention, Participant M decreased the mean percentage of academic disengagement to 31%. After evaluating data between these phases, there was a significant decrease in academic engagement. As shown in Figure 4 and Table 10, there were no overlapping data (PND = 100%) between these phases. The exhibition of academic disengagement increased to 49% during the second baseline. However, after reintroducing the CICO intervention, the mean percentage of academic

disengagement increased significantly to 13%. Results indicated that there was no overlapping data (PND= 100%) between the second baseline and CICO intervention phases. Results also indicated that the mean percentage of academic disengagement was 33% during the generalization phase and 14% during the maintenance phase. These results showed that Participant M had demonstrated a significant reduction of academic disengagement in the generalization and maintenance phases compared to the two baseline phases.

Participant N. As seen in Figure 4and Table 9, the mean percentage of academic engagement during the initial baseline phase was 35%. After introducing the CICO intervention, academic engagement increased to 56% during the first CICO intervention phase. During this phase, the percent of increase in academic engagement was more than 40% compared to the mean percentage of the first baseline phase, which was more than 49%. After evaluating data points between the two phases, results indicated that there were no overlapping data (PND = 100%) between these phases. However, participant N decreased the exhibition of academic engagement to 37% during the second baseline phase. However, when the second CICO intervention was introduced, academic engagement increase significantly to 68%. Participant N increased the exhibition of academic engagement more than 50% during the second CICO intervention phase when compared to the mean percentage of the first baseline phase, which was more 56%. Participant N increased academic engagement to 70% and 73% on the last two sessions of the second CICO intervention phases. Results also indicated a significant increase in academic engagement when comparing data points between theses phases. Results indicated that there were no overlapping data (PND = 100%) between these phases. Results also indicated that Participant N increased the mean percentage of academic engagement to 52% during the

generalization phase and 54% during the maintenance phase when compared to the mean percentage in each baseline phases.

A seen in Figure 4 and Table 10, Participant N's mean percentage of academic disengagement was 55% during the first baseline. After implementing the CICO intervention, there was an immediate decrease in academic disengagement. The mean percentage of academic disengagement decreased to 34%. After comparing data between these phases, results indicated that there were no overlapping data (PND = 100%). However, after withdrawal of the intervention, the mean percentage of academic disengagement increased to 48% during the second baseline phase. After reintroducing the CICO intervention, the mean percentage of academic disengagement decreased significantly to 12% during the second CICO intervention phase. Results also indicated that there were no overlapping data (PND = 100%). Results indicated that the use of the CICO intervention yielded a significant decrease in academic engagement. During the generalization phase, the percentage of academic engagement was 34%. It was 18% during the maintenance phase. Both percentages indicted that Participant N had decreased the exhibition of academic disengagement more than the mean percentage in each baseline phase.

Average number of academic engagement and academic disengagement across four participants. Figure 5 shows the mean percentage of the occurrence of academic engagement and academic disengagement during all sessions per phase. The use of the CICO intervention helped to increase the number of occurrences of academic engagement and decreased academic disengagement across all four participants. In the following two paragraphs, the mean number of academic engagement and academic disengagement are provided for each participant.

Academic engagement. As seen in Figure 5, during the first baseline, the mean number of academic engagements was 12%, 13%, 15%, and 15% for Participant A, Participant AN, Participant M, and Participant N, respectively. During the first CICO intervention phase, these percentages increased to 36%, 35%, 31%, and 34% for Participant A, Participant AN, Participant M, and Participant N, respectively. However, after the withdrawal of the CICO intervention, the mean number of occurrences of academic engagement decreased to 14%, 17%, 16, and 16% during the second baseline phase, for Participant A, Participant AN, Participant M, and Participant N, respectively. When the CICO intervention was reintroduced during the second phase, the mean number of occurrences of academic engagement increased to 34%, 37%, 36%, and 38% for Participant A, Participant AN, Participant M, and Participant N, respectively. During the generalization phase, the mean number of the occurrences of academic engagement was 28%, 29%, 30%, and 31% for Participant A, Participant AN, Participant M, and Participant N, respectively. During the maintenance phase, the mean number of academic engagements was 27%, 27%, 29%, and 30% for Participant A, Participant AN, Participant M, and Participant N, respectively.

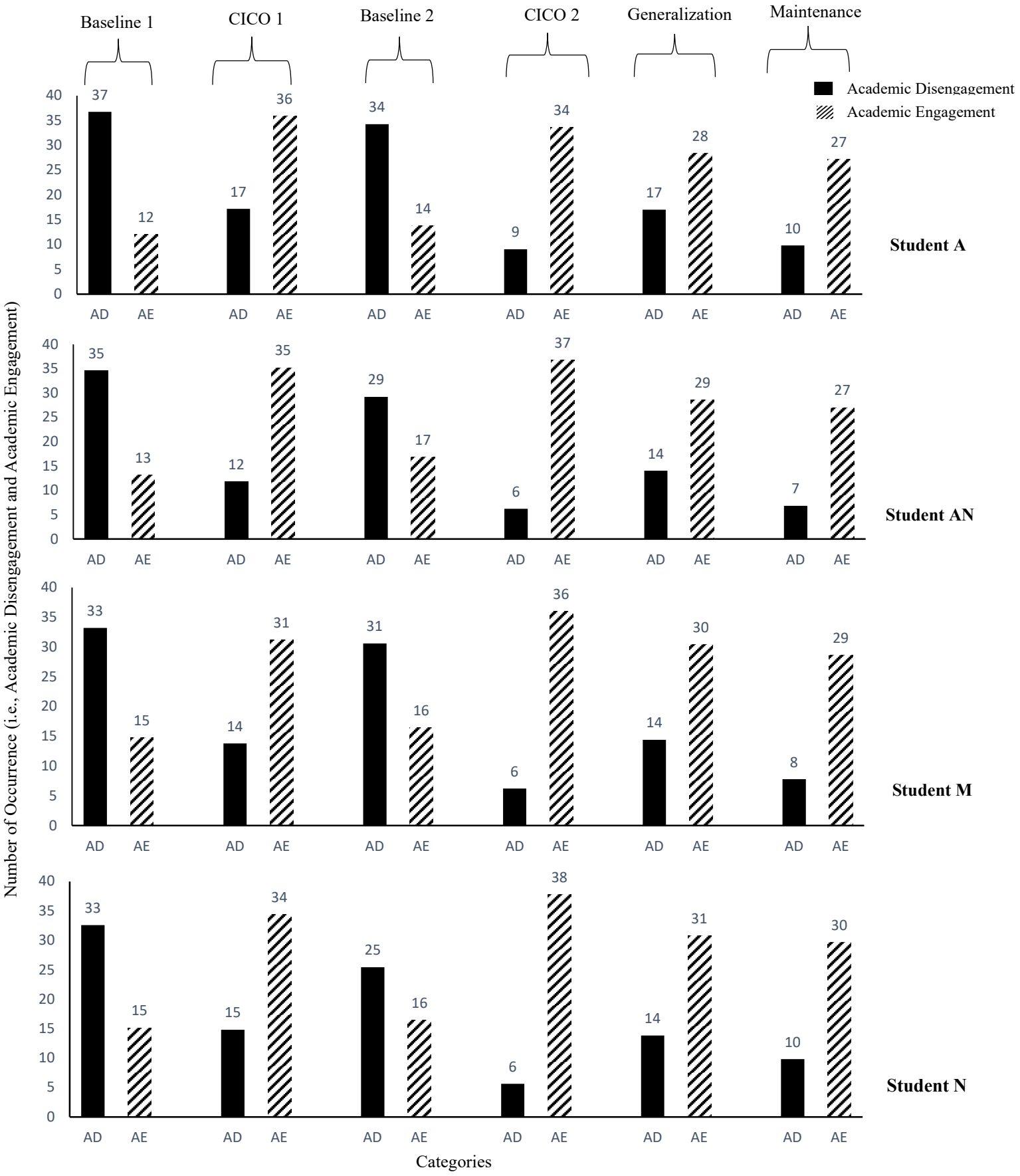

Figure 5. Average Frequency Number of Exhibit Academic Disengagement and Academic Engagement across four participants

Academic disengagement. As seen in Figure 5, during the first baseline, the mean number of occurrences of academic disengagement were 37%, 35%, 33%, and 33% for Participant A, Participant AN, Participant M, and Participant N, respectively. During the first CICO intervention phase, these percentages decreased to 17%, 12%, 14%, and 15% for Participant A, Participant AN, Participant M, and Participant N, respectively. However, after withdrawal of the CICO intervention, the mean number of occurrences of academic disengagement increased to 34%, 29%, 31%, and 25% during the second baseline phase for Participant A, Participant AN, Participant M, and Participant N, respectively. When the CICO intervention was reintroduced during the second CICO intervention phase, the mean number of occurrences of academic disengagement decreased to 9%, 6%, 6%, and 6% for Participant A, Participant AN, Participant M, and Participant N, respectively. During the generalization phase, the mean number of occurrences of academic disengagement were 17%, 14%, 14%, and 14% for Participant A, Participant AN, Participant M, and Participant N, respectively. During the maintenance phase, the mean number of occurrences of academic disengagement were 10%, 7%, 8%, and 10% for Participant A, Participant AN, Participant M, and Participant N, respectively.

Fidelity of Implementation

Fidelity of implementation was measured at least three times per week by using a15-item treatment fidelity checklist for each participant during the two CICO intervention phases. Moreover, fidelity of implementation was only measured four times during the first intervention phase for participant A. Table 11 displays the mean fidelity of implementation across 15 items during the CICO intervention phases, measured sessions per participant. Overall, fidelity was high during both intervention phases, with an average of 97%, across all participants. During the first treatment phases, for Participant A, fidelity averaged 95% (range = 93% - 100%). For

Participant AN, fidelity averaged 95% (range = 93% -100%). For Participant M, fidelity averaged 95% (range = 93% - 100%). For Participant N, fidelity averaged 98% (range = 93% - 100%). During the second treatment phases, for Participant A, fidelity averaged 100% (range = 100% - 100%). For Participant AN, fidelity averaged 98% (range = 93% - 100%). For Participant M, fidelity averaged 100% (range = 100% - 100%). For Participant N, fidelity averaged 100% (range = 100% - 100%).

Table 11.
Descriptive Treatment Adherence of CICO Intervention's Steps for the Fourth Participants

Participant	Mean percentage and range (R) of treatment adherence		Total Number of Treatment Days	Total Treatment Duration
	Treatment 1	Treatment 2		
A	95% (93% - 100%)	100% (100% - 100%)	12 days	3 weeks
AN	95 (93% - 100)	98% (93 – 100%)	10 days	2 weeks
M	95% (93 – 100%)	100% (100% - 100%)	10 days	2 weeks
N	98% (93% - 100%)	100% (100% - 100%)	10 days	2 weeks

Inter-Observer Agreement

Mean percentages of interobserver agreement (IOA) were collected for each participant across the six phases. IOA data were collected by two coders in each phase on at least 57% percentage of in each phase. Moreover, IOA met a minimum of 85% of IOA across the four dependent variables (i.e., problem behaviors, appropriate behaviors, academic engagement, academic disengagement) per session. Each participant was observed by two coders four times per phase. The mean percentage of IOA for observations of the four dependent variables across

all the six phases were 98 %, 97%, 97%, and 96% for participant A, participant AN, participant M, and participant N, respectively.

As seen in Table 12, during the first baseline observations, the mean percentage of IOA was 97% (range = 96%-98%), 98% (range = 96%-98%), 94% (range = 87%-99%), and 95% (range = 89%-99%) for Participant A, Participant AN, Participant M, and Participant N, respectively. During the first CICO intervention phase, the mean percentage of IOA was 95% (range = 93%-97%), 94% (range = 92%-95%), 98% (range = 94%-100%), and 95% (range = 91%-97%) for Participant A, Participant AN, Participant M, and Participant N, respectively. During the second baseline CICO intervention phase, the mean percentage of IOA was 98% (range = 95%-99%), 98% (range = 96%-99%), 98% (range = 96%-100%), and 98% (range = 95%-99%) for Participant A, Participant AN, Participant M, and Participant N, respectively. During the second CICO phase, mean percentage of IOA were 98% (range = 97% - 100%), 99% (range = 98% - 100%), 99% (range = 99% - 100%), and 97% (range = 94% - 100%). During generalization phase, mean percentage of IOA were 98% (range = 96%-100%), 97% (range = 96%-99%), 97%(range = 96%-98%), and 96% (range = 91%-100%) for Participant A, Participant AN, Participant M, and Participant N, respectively. During the maintenance phase, mean percentage of IOA were 99% (range = 99%-100%), 97% (range = 94%-99%), 96% (range = 94%-99%), and 96% (range = 95%-98%) for Participant A, Participant AN, Participant M, and Participant N, respectively.

Table 12.
Descriptive Statistic of Inter-Observer Agreement across the six phases of Intervention's CICO for the Fourth Participants

Participant	Mean percentage, number of IOA sessions (range) of Inter-observer agreement						Total number of IOA sessions	Total number of study sessions
	A-1	B-1	A-2	A-2	G	M		
A	97% (4) (96% - 98%)	95% (4) (93% - 97%)	98% (3) (95% - 99%)	98% (3) (97% - 100%)	98% (3) (96% - 100%)	99% (3) (99% - 100%)	20	34
AN	98% (4) (96% - 98%)	94% (3) (92% - 95%)	98% (3) (96% - 99%)	99% (3) (98% - 100%)	97% (3) (96% - 99%)	97% (3) (94% - 99%)	19	30
M	94% (4) (87% - 99%)	98% (3) (94% - 100%)	98% (3) (96% - 100%)	99% (3) (99% - 100%)	97% (3) (96% - 98%)	96% (3) (94% - 99%)	19	30
N	95% (4) (89% - 99%)	95% (3) (91% - 97%)	98% (3) (95% - 99%)	97% (3) (94% - 100%)	96% (3) (91% - 100%)	96% (3) (95% - 98%)	19	32

Note. A-1 = Baseline; B-1= CICO; B-2 = withdrawal; A-2 = withdrawal; B-2 = return to CICO; G = generalization; M = maintenance; IOA = Inter-Observer Agreement

Research Question Three

Teachers and students' perceptions regarding the implementation of the CICO intervention. The three teachers and four students completed a rating profile twice, once at the beginning of the study (i.e., before starting the implementation of the first CICO intervention phase) and at the end of the study. After comparing each student and teacher's responses to both social validity questionnaire forms (pre-and post-intervention forms), the results indicated that both teachers' and students' perceptions of the implementation of the CICO intervention were positive. The results of both teachers' and students' perceptions are discussed in the following sections.

Teachers. The results of the sum of all points circled in the first questionnaire form for the three teachers' ratings on a 15-point scale were 55, 37, and 61 out of 90 total points for math, reading, and English teachers, respectively. At the end of the study, the three teachers were given the second questionnaire form. For the three teachers, the sum of all points circled for each

statement increased positively to 61, 66, and 67 for math, reading, and English teachers, respectively. After comparing the teachers' scores before and after completing the study, the results indicated that all teachers found the CICO intervention acceptable. As seen in Table 13, this questionnaire form was followed by four open-ended questions to solicit additional feedback regarding the effectiveness of the CICO intervention. The math teacher reported that this strategy helped to ensure students' rights and privacy. The teacher indicated that this strategy required teachers to observe each student's behavior during teaching time and then evaluate this behavior, which may be difficult to do for many students at the same time. The teacher agreed with that the CICO intervention may an effective intervention to improve students' behavior, social skills, and learning problems (e.g., weak Reinforcement) during discussion with students in check-in and check-out meetings. The reading teacher reported different responses as to the validity of the CICO intervention given the role of missing parents/guardians of students. The teacher also agreed that the CICO intervention helped improve his students' behavior, social skills and learning problems. The teacher felt that students need to be motivated and encouraged continuously, which helped students improve their academic and behavioral performance. The English teacher reported that this intervention helped follow-up on students out of the class for the purpose of improving his academic and behavioral performance during two meetings (i.e., at the morning and at the end of the school day). However, he did not think this intervention could help students who participated in the study improve their learning problems. He indicated that he would prefer changing the implementation of the intervention and engage a psychologist in this intervention but failed to provide additional information.

Table 13.
The three Teachers' Responses to Open and Ended Questions

Questions	Math	Reading	English
1. A-) What do you feel is most beneficial about the CICO intervention?	Save rights and privacy	Completing the role of the missing guardian of students	Keep tack of student's behaviors out the class for the purpose of improve his overall of academic and behavioral performance.
1. B-) What is the least beneficial part?	Observation and registration	No answer	Students' academic performance did not improve
2. Do you think that you and your students' participation in CICO helped your students' behavior, social skills, and/or learning problems to improve? Why or why not? or if so, how?	Yes	Yes	No
3. What would you change about this intervention (e.g., components, design, implementation, etc.) to make it more student-friendly and educator-friendly?	No answer	No answer	Implementation
4. What other information would you like to contribute about this intervention?	No answer	Using Motivation and encouragement with students continuously	Engaging a psychologist

Students. Results of the total scores in the first questionnaire form for the four students' ratings, which were on 6-point Likert-type scales were 23, 27, 27, and 26 for Participant A, Participant AN, Participant M, and Participant N, respectively. At the end of the study, the four students were given the second questionnaire form. The total scores increased to 38, 37, 35, and 34 for Participant A, Participant AN, Participant M, and Participant N, respectively. A comparison of the students' scores from before and after completion of the study indicated that all four students found the CICO intervention acceptable. The students' questionnaire form was followed by six open-ended questions, intended to elicit additional feedback regarding their thoughts about the effectiveness of the CICO intervention. As seen in Table 14, all four

participants reported that they liked the CICO intervention; and whereas, they did not report any negative things about the CICO intervention. All four participants agreed that the CICO intervention helped them do better work at their school and reported feeling happy because they met their goal on the CICO intervention. Participant A reported that he liked the academic and behavioral benefits that he had gained from his mentor. The other three participants indicated that they liked the simple and clear explanations that their mentor offered during CICO intervention meetings. All four participants responded positively to the final question on using the CICO intervention. They thanked the teachers and mentors for using the CICO intervention with them.

Table 14.
The Four Students' responses to the Six Open and Ended Questions.

	Questions	Participant A	Participant AN	Participant M	Participant N
1.	How did you like using the CICO intervention?	Everything	Everything	I like to use my teacher to help me improve my behaviors	I like to check-in and check-out with my mentor who encourages me to improve my behavior
2.	What did you not like about the CICO intervention?	Nothing	I like Everything	Nothing	Nothing
3.	Do you think CICO helped you do better work?	Yes	Yes, it helps me to focus on my studies	Yes	Yes, it helped me to complete my homework and focus on my study
4.	How did you feel good when you met your goal on the CICO?	Feel happy	Feel comfortable and happy	Feel happy	Feel happy
5.	Tell me, what you liked about working with your mentor?	Academic and behavioral benefits that I learned from my mentor	Sample explanations during meeting with my mentor	Good deal with educators with good explanations	A clear explanation
6.	What else would you like to say about the CICO intervention?	Keeps doing the CICO intervention	Thank you so much for your help and support. I hope you will see me as one of the excellent students in the Kingdom of Saudi Arabia	Thanks	I accept to use the intervention

CHAPTER FIVE

DISCUSSION

Results of the reviewed experimental studies present evidence that the CICO intervention can be an effective intervention to decrease problem behavior and increase academic engagement among a diverse population of students and across variety of learning environments. However, the results of the literature review indicated that there is a paucity of research examining the effectiveness of the CICO intervention for adolescents in juvenile detention centers. These adolescents are more likely to exhibit problem classroom behavior and be academically disengaged (Kim & Linan-Thompson, 2013). Therefore, the present research aimed to examine the effectiveness of CICO intervention for students in juvenile detention centers. The purpose of this chapter is to discuss: (a) results of the use of the CICO intervention among the four participants interpreted in the previous chapter; (b) limitations of the results and recommendations for future studies; and (c) implications for future research and practice.

Summary of Results

Overall, results of the CICO intervention indicated that all four participants decreased their problem behavior and increased their academic engagement. Moreover, the CICO intervention also helped these participants increase their appropriate behavior and decrease academic disengagement. This intervention produced the same results as other studies (e.g., Boden et al., 2018) showing that the CICO intervention effectively improved students' inappropriate behavior and academic engagement problems. Results were significant, as they showed a strong functional relation between the CICO intervention and the four dependent variables (i.e., problem behaviors, appropriate behaviors, academic engagement, academic

disengagement). In the following sections, the results of each study's research question are discussed.

Problem behavior and appropriate behavior. The CICO intervention was related to decreased problem behavior and increased appropriate behavior across all four participants. Overall, results show that the CICO intervention yielded a significant improvement of all four participants' behavior. Helping students reduce problem behavior and increase appropriate behavior is not an easy undertaking and not all students will benefit from a given treatment. Participant A took two additional sessions during the first baseline phase because his behavior was unstable, and he also took two additional sessions during the first CICO intervention phase because he did not meet the criteria for reduction of problem behavior. He was the only participant who exhibited a high percentage of problem behavior during the first baseline and generalization phases. He had been placed in the juvenile detention centers twice, which suggests lower motivational levels about his behaviors and participation in the present study. Results indicated that he did not generalize what he had learned during the generalization phase. A comparison of the mean percentage of problem behavior between the second baseline phase and the generalization phase revealed that his problem behaviors was close to 50% during science class. By contrast, participants AN, M, and N reduced their problem behavior by more than Participant A, by generalizing and maintaining what they had learned from the CICO intervention. Given the substantial amount of problem behavior when the study began all four participants increased their appropriate behavior after receiving the CICO intervention. Their mean percentage of increased in appropriate behavior and decrease in problem behavior was significant for each participant. However, the mean percentage of the decrease in problem behavior was more significant than the mean percentage of increase in appropriate behaviors for

each participant. These improvements demonstrated that there was a functional relation between the reduction of problem behavior and an increase in appropriate behavior. However, the CICO intervention was shown to be more effective at reducing problem behavior, which was the primary dependent variable and received more focus than increasing appropriate behavior.

Academic engagement and academic disengagement. Results of the current study on the use of the CICO intervention indicated that all participants behaved well after participating in the CICO intervention. Before being introduced to the CICO intervention, all participants were engaged academically at a low level in their classroom instruction. However, after the introduction of the CICO intervention, the percentages of academic engagement (e.g., competing a give assignment, asking questions regarding a given topic) increased for all participants. For the primary dependent variable (academic engagement), participants A, AN, M, and N showed significant improvement during all the study's phases that include generalization and maintenance phases. Moreover, they decreased academic disengagement, which was considered to be a secondary dependent variable. Participants AN, M, and N reduced academic disengagement more than 85% in math class. However, Participant A reduced the academic disengagement 80%, and he was the participant whose mean percentage, during the generalization phase, was highest, compared to those of other participants. Although speculative, these are signs that the problems may be of teachers' failing to cultivate appropriate relationships with their students or to communicate with them effectively.

Participants' Perceptions of the Implementation of the CICO Intervention

Social validity is an important element that all researchers should use to assess the effectiveness of any treatment (Foster & Mash, 1999; Kennedy, 2002; Olive, & Liu, 2005). Social validity can allow teachers, students, and parents to examine the effectiveness of any

intervention. Most studies (e.g., Bunch-Crump & Lo, 2017; Boden et al., 2018; Mong et al., 2011) examined social validity by giving participants a social validity questionnaire at the end of the study. By contrast, in the present study social validity was examined twice in this study by the teachers and students, both before and after implementation of the CICO intervention in order to compare their response before and after the interventions. Overall, both teachers' and students' responses were positive, regarding the use of CICO intervention. However, students' responses were more positive than teachers' responses. Their responses are discussed in the following sections.

Teachers. All the three teachers (i.e., Math, Reading, English) indicated that the CICO intervention improved significantly all four participants' behavior. After comparing each teacher's responses to the questionnaire forms provided to them before and after the study, teachers' responses were found to be positive. Their responses revealed support for the use of the CICO intervention and indicated that the intervention successfully increased academic engagement and reduced problem behavior. However, responses to open-ended questions, which were given only at the end of the study, revealed two main points.

First, Math and Reading teachers' responses were generally positive for the open-ended questions. The math teacher indicated that the least beneficial parts of the CICO were the observation and registration. Indeed, it is difficult for teachers to observe their students' behavior during teaching time and evaluate their behavior at the end of the class period. Second, the English teacher was the only teacher who suggested that the CICO intervention may not improve students' academic performance or learning problems, although he did not indicate why he thought that. He suggested involving a psychologist to work with these students might help to be more effective in improving students' behaviors. Teachers' self-efficacy and beliefs are

important elements to help improve their students' behavior (Bandura, 1977). Teachers with low efficacy and negative beliefs about their students are likely to have negative attitudes to students with problem behavior, especially students who are in juvenile detention centers. In the following paragraph discusses results of the teachers' evaluation on a daily progress report (DRP).

In this study, three teachers (i.e., Math, Reading, English) were asked to evaluate each of the four students. These were the only teachers who received training on how to participate in the treatment and use the daily report progress. However, some teachers (e.g., physics, computer sciences) participated in evaluating these students' behavior on the DRP, they did not participate in the intervention. It was clear that some teachers (e.g., English, physics) were continuously giving these students poor evaluations. Teachers' attributes and efficacy are important elements in managing students' behavior. Andreou and Rapti (2010) found that teachers with low self-efficacy and minimal experience may have negative attributes that prevent them from working effectively with students who display problem behavior, tending to use threats and punishments to deal with such behavior. Students in this facility did not benefit from these interventions.

Students who exhibit problem behavior and academic disengagement, especially those in juvenile detention centers, must have a supportive educational environment to help them address their diverse needs. Teachers can build appropriate interpersonal relationships with their students in various ways including the use of verbal praise. When students receive praise from their teachers, they are expected to behave well and have an appropriate relationship with their teachers (Sutherland, Wehby, & Yoder, 2002). In this study, results indicated that the CICO intervention was an effective strategy for improving students' behavior. The three teachers (i.e., Math, Reading, English) indicated that the intervention was acceptable, using 15-point scales.

This was true for all teachers except the English teacher who did not think, according to his responses to open-ended responses that the intervention helped his students improve their academic performance.

Students. Generally, all four students indicated that the CICO intervention was effective in improving their behavior, they communicated this via their responses on 6-point Likert-type scales and to open-ended questions. The total scores of each student showed more improvement than each teacher's total score on the Likert-type scales. Moreover, the students reported liking the CICO intervention and claimed that helped address their problem behavior and academic disengagement by helping them do better work in school. Some studies' (e.g., Ross & Sabey, 2015; Turtura et al., 2014) have only examined a social validity with participants' parents and teachers, instead of examining the perceptions of students, who were the ones that actually participated the intervention. In this study, teachers and students were given a social validity questionnaire. A comparison of their perceptions reveals that the students' responses were more positive than those of the teachers regarding the use of CICO intervention; only the English teacher did not think that the intervention helped students' behavior and academic performance. However, all four students indicated that CICO was an effective intervention to help improve their academic and behavioral performance.

Limitations and Recommendations for Future Studies

Several limitations of the present study deserve consideration and further research. First, the CICO intervention was examined in the context of only four adolescent students; this is considered a small participant sample size. This small number of participants is one reason that may prevent researchers from generalizing the results. Further, these students only represented middle and high school students who are placed in juvenile detention center. This particular age

group of incarcerated students are at higher risk of having problem behavior and academic disengagement than participants in other studies; this required them to receive appropriate treatments to address their needs (Anderson, Kutash, & Duchnowski, 2001; Fisher, & Ennis, 2012). Moreover, there are few studies using the CICO intervention with such a population (Swoszowski, Patterson, & Crosby, 2011), which means the four participants' results cannot be generalized to other populations. To generalize results, future researchers should replicate the study with the same population (Kratochwill et al., 2013).

Second, each phase of the study included at least five sessions and data were collected in the maintenance phase after two weeks of the generalization phase; this may require future researchers to increase the number of sessions to at least 10 sessions for each phase and to wait at least two months to examine how participants' behavior changes after implementation of the intervention. Third, this study did not investigate the relationship between the CICO mentor and each student. The relationship between the teachers and each student also is unknown; and these relations may have influenced the results. Fourth, social validity questionnaires were given to students and teachers two times, including open-ended questions at the end of the study, and they answered them privately. This may have influenced their responses. Perhaps interviewing participants would expand their responses in more depth. On the other hand, an interview may limit their responses in an effort to please the researcher. Fifth, a direct observation may influence students' behavior and cause students to behave differently unlike their normally circumstances**.** Future researchers may need to observe students through security cameras or video recordings that may not cause students to behave differently. Another limitation is that CICO was implemented in isolation from a tiered system of support. If a multi-tiered framework was implemented, all students could have access to clear expectations and rules, some students

would have access to CICO based on the continuation of problematic behavior, and lastly, a few students have to need targeted intervention, such as using a functional behavioral assessment. This may have helped Participant A with a function-based approach to CICO.

Implications for Future Research and Practice

For researchers. Many studies (e.g., Mong et al., 2011; Turtura et al., 2014) have used the CICO with different types of students with and without disabilities (e.g., emotional and behavioral disorders, autism), but no studies have used the CICO intervention with incarcerated students (Swoszowski, Patterson, & Crosby, 2011). This study is one of the first to use the CICO intervention with incarcerated youth. Future researchers may need to replicate this study among these types of students, who are placed in juvenile justice centers (Kratochwill et al., 2013). The replication of studies using the CICO intervention will help increase these results' generalizability, and thereby qualify the CICO intervention for consideration as an evidence-based-practice.

In this study, the researcher did not examine the relationships (positive or negative) between participants and their teachers. and the CICO mentor. For example, some participants may have negative relations with their teachers or positive relationships that could be considered as a primary reason to impact on participants' behaviors. Moreover, some teachers may be motivated and agreed to implement the intervention versus others who did so because they were told they must implement the intervention. Future researchers also should investigate these relationships between a CICO mentor, teachers, and students before implementing the CICO intervention. This examination of these interactions could impact students' outcomes**.** With the technical revolution, there are a few studies (e.g., Bunch-Crump & Lo, 2017) that employ technology tools, like iPads and touch mobile devices, to implement the CICO intervention.

Students with and without disabilities like to use technology in learning and/or treatment (Hasselbring & Glaser, 2000); in particular, students with problem behavior can receive educational and behavioral benefits from using technology as an instructional tool to implement a given intervention, such as the CICO intervention (Cumming et al., 2008).

Replication of single-subject design is important contributions because it can lead to classification of studies' results as an evidence-based practice (Gersten et al., 2005; Odom et al., 2005). Future researchers should use single-subject design to examine the CICO intervention with at least seven students who are at the same educational level. The What Works Clearinghouse (2017) requires researchers to include at least five sessions in each phase. Future researchers should increase the number of sessions to more than five sessions, perhaps up to 10 sessions in each phase. More sessions might increase maintenance and internal validity. Moreover, the increased number of sessions could help future researchers to analyze data with different types of statistics (e.g., Tau-U, nonoverlap of all pairs), rather than PND that was used in this study to examine the effect size and overlap between data (Parker, Vannest, & Davis, 2011).

Finally, CICO intervention has been shown to be effective to improve students' academic progress (Mong et al., 2011). In this study, the CICO intervention also was shown to be an effective intervention to improve two primary dependent variables (i.e., problem behavior, academic engagement), with two additional secondary dependent variables (i.e., appropriate behavior, academic disengagement). Future researchers may need to investigate how the CICO intervention could help improve students' classroom academic performance (e.g., science, computer science). Future researchers also may need to provide teachers some behavioral strategies that could be used with their students. Moreover, researchers may need to examine

each teacher's efficacy before and after implementing an intervention to investigate any changes in teachers' self-efficacy. Many studies have demonstrated that self-efficacy is important to examine if participants (e.g., teachers, students) has a tool to manage their behaviors (Andreou & Rapti, 2010; Bandura, 1977).

For educators. The CICO intervention was an effective intervention that could help many types of students with and without disabilities (emotional and behavioral disorders, intellectual disabilities, learning disabilities) address their problems that may relate to social skills, academic tasks, and off-task behaviors (Bunch-Crump & Lo, 2017; Collins et al., 2016; Mong et al., 2011). This study demonstrated that the CICO intervention was an effective intervention with incarcerated students' problem behavior and academic disengagement. Teachers could use the intervention with their students to address all aforementioned problems, including incomplete work, disruptive behaviors, internalizing behavior problems, prosocial behavior. Teachers may use students' peers as interventionists to implement the CICO intervention. Teachers also can use CICO as a way to build good relationships between students and teachers. They could implement the CICO intervention with any problem they wish to address and involve other educators and school personnel and work as one team, such as using PBIS that is a comment approach used in many different juvenile and educational institutions. It also is considered as first-tier in a multi-tiered framework and CICO interventions can be used as the second tier. Schools can implement the CICO intervention in two tiers: (a) the five-step CICO and (b) the six-step CICUCO as an intensive intervention for students who did not benefit from the first tier.

However, it is important is to engage and gain initial buy-in from all staff, youth, and stakeholders within educational and juvenile institutions because they are essential and effective

factors to whether for the success or failure of any program. A facility-wide approach to positive behavior intervention and support (FSW-PBIS) is the most important approach that can help engage all educators and staff in institutions that can lead to success in application of any used intervention and program withing any educational and juvenile institutions. It is an approach that can be implemented within any facility environment. It also requires teaching, modeling, and boosting appropriate adolescence behavior 24 hours for seven days each week with achieving a rate equal and above 90% staff buy-in for effective implementation of this approach (Boden, Ennis, Allen, Williams, & Dana, 2020; Jolivette & Nelson, 2010). Many ideas for staff and educator buy-in after establishing a PBIS leadership team, such as providing initial and ongoing training, reinforcing them for their engaging in FW-PBIS, and allowing them to use their skills. It is high recommended to all juvenile and educational institutions to implemented FW-PBIS, especially the juvenile detention center that the study when the CICO was implemented.

CHAPTER SIX

CONCLUSION

In summary, many students with problem behavior are in school and placed in alternative educational settings (Billingsley, 2004; Boe & Sunderland, 2008). These students are at risk of failing and/or having low academic performance. The literature review indicated that the CICO intervention was effective in decreasing problem behaviors and increasing academic engagement among students with and without disabilities (McDaniel & Bruhn, 2016; Todd et al., 2008). Moreover, no studies were found that use the CICO intervention with incarcerated adolescent students (Swoszowski, Patterson, & Crosby, 2011).

This study addressed this gap in the previous reviewed studies. In this study, the CICO intervention was implemented with incarcerated students. Like other studies (e.g., Bunch-Crump & Lo, 2017; Lane et al., 2012), this study focused on two primary dependent variables (i.e., problem behavior, academic engagement). However, this study also focused on two additional dependent variables (i.e., appropriate behavior, academic disengagement) that no study had previously investigated, in terms of the way the CICO intervention impacted them.

Overall, this study demonstrated that the CICO intervention was effective in improving all four students' behavior. This intervention yielded the same results as in previous studies. That is, such studies (e.g., Boden et al., 2018; Campbell and Anderson, 2011) showed that the CICO intervention effectively improved students' problem behavior and academic engagement problems. The results of the CICO intervention demonstrated a functional relation between the CICO intervention and decreased problem behavior and academic disengagement. The results of this study also indicated a functional relation between the CICO intervention and increased appropriate behavior and academic engagement and these dependent variables were not

measured in the reviewed studies. However, the CICO intervention was strongly related to the reduction of problem behavior and academic disengagement.

In conclusion, results of the present study suggest that the CICO intervention may be an effective intervention to improve all four dependent variables. Future research may need to investigate the effectiveness of the CICO intervention and improving students' academic performance and self-efficacy. The CICO intervention could be used as a second-tier intervention to improve students' behavioral and academic skills in schools and/or alternative education sittings. Moreover, it is a flexible intervention that allows teachers, peers, parents, and other educators to participate in its implementation. Adolescent students in the juvenile detention center are like many other students in conventional schools who need support to address their problem behavior and academic performance. Therefore, this study has demonstrated that the CICO intervention can be regarded as an effective intervention with many types of students in schools (e.g., Kim & Linan-Thompson, 2013; Hunter et al., 2014) and/or in juvenile detention centers.

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Appendix A

Teacher Rating Scale

Your Name: Student Date of Birth: Today's date:
Student Name: Student Grade:

Using the following scale, identify how frequently the student has displayed each of the following behaviors during the previous month. Circle only one number for each behavior.

0 = Never, 1 = Sometimes, 2 = Often, 3 = Almost Always

Social Behaviors				
Arguing	0	1	2	3
Cooperation with peers	0	1	2	3
Temper outbursts	0	1	2	3
Disruptive behavior	0	1	2	3
Polite and socially appropriate responses toward others	0	1	2	3
Impulsiveness	0	1	2	3
Academic Behaviors				
Interest in academic topics	0	1	2	3
Preparedness for instruction	0	1	2	3
Production of acceptable work	0	1	2	3
Difficulty working independently	0	1	2	3
Distractedness	0	1	2	3
Academic engagement	0	1	2	3
Emotional Behaviors				
Sadness	0	1	2	3
Fearfulness	0	1	2	3
Adaptable to change	0	1	2	3
Positive attitude	0	1	2	3
Worry	0	1	2	3
Difficulty rebounding from setbacks	0	1	2	3
Withdrawal	0	1	2	3

Appendix B

INFORMED CONSENT DOCUMENT (principal of the center)

OLD DOMINION UNIVERSITY

PROJECT TITLE: Check-in/Check-out to Increase Academic Engagement and Classroom Behavior among Adolescent Students in Juvenile Detention Centers.

INTRODUCTION: The purposes of this form are to give you information that may affect your decision whether to say agree or NO to participation in this research, and to record the consent of those who say YES. The Check-in/Check-out intervention will be conducted in your classrooms at participants' school/center. The purpose of this study is to evaluate the effectiveness of the Check-in/Check-out intervention in terms of improving academic and behavioral skills and in helping students to manage their behaviors.

PRINIPAL INVESTIGATOR

Dr. Robert Gable, Professor & Eminent Scholar of special education, Child Study Center room 214, Norfolk, VA 23529. Phone: 757-683-3157, Email: rgable@odu.edu

RESEARCHERS: Rakan Mnawer Alshammari, M.S. Ed. who is doctoral student at Old Dominion University, Darden College of Education Communication Disorders and Special Education; ralsh001@odu.edu

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Dr. Peggy Hester, professor of special education, Child Study Center room 101, Norfolk, VA 23529. Phone: 757-683-4876, Email: phester@odu.edu.

Dr. Kristy Park, associate professor in the Division of Special Education and disability Research at George Mason University Fairfax Campus Finley Building 100B, 4400 University Dr. MS 1A4,Fairfax, VA 22030. Phone: (703) 993-5251, Email: Kparkc@gmu.edu

DESCRIPTION OF RESEARCH STUDY: Several studies have been conducted on the use of the Check-in/Check-out intervention for improving students' behavioral and academic skills. Few of these studies, however, have explained that the intervention's effectiveness in terms of helping adolescent students to address their behavioral and academic problems. The purpose of this study is to examine the effectiveness of the Check-in, Check-out intervention decreasing problem behaviors (e.g., making noise) and increasing academic engagement (e.g., completing homework) of adolescent students in juvenile justice centers. If you decide to participate, then your students will join a study involving research that uses a single subject design to examine the effectiveness of the Check-in, Check-out intervention in terms of improving academic and behavioral skills. Your students will also be taught how to manage their behaviors. If you agree to participate, then your students' participation will be about 11 weeks; sessions will be conducted at your school or center. Approximately seven students will participate in this study. Your students' will need to work with their teachers and Check-in, Check-out mentor in everyday during the Check-in, Check-out intervention.

RISKS AND BENEFITS:

RISKS: There are no foreseeable risks involved in participating in this research. However, there is a slight risk of the release of confidential information. To address this potential risk the report will use a fictitious name instead of students' real name and will not contain any other identifiable information. Also, there will be not videotapes. Data will be collected in your office and under your supervision by observing the students on security cameras that include audio and video in all phases.

BENEFITS: There are no benefits to you for participating in this research.

COSTS AND PAYMENTS: The researchers are unable to provide any payment for participating in this study.

NEW INFORMATION: If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY: None of the information gathered or contained in the report will be used for any purpose other than to fulfill the requirements of the agreement sheet. To ensure confidentiality, the report will replace your student's real name with a fictitious name and will not contain any identifying information. The researcher will be working under the supervision of the classroom teacher and social observation house directors or managers for the confidentiality of information. I am a student please understand that my results and conclusions must be viewed with caution and that they should not be used in any capacity to make decisions about your student's educational program.

WITHDRAWAL PRIVILEGE: It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study - at any time. Participation is voluntary, and you and your students may withdraw from the study at any time and for any reason. If you or your students decide not to participate or if you or your students withdraw from the study, there is no penalty or loss of benefits to which you or your students are otherwise entitled.

COMPENSATION FOR ILLNESS AND INJURY: If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm, injury, or illness arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any research project, you may contact the Old Dominion University Office of Research at 757-683-3460 who will be glad to review the matter with you.

VOLUNTARY CONSENT: By signing this form, you are saying several things: You are saying that you have read this form or have had it read to you; that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, Rakan Alshammari should be able to answer

them via email (ralsh001@odu.edu) or phone (651-353-7139). Also, you can contact Dr. Robert Gable via email rgable@odu.edu or phone 757-683-3157

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should contact the institutional review board chair is Dr. Tancy Vandecar-Burdin, 757-683-3802, tvandeca@odu.edu.

And importantly, by signing below, you are telling the researcher YES, that you agree to participate in this study. The researcher should give you a copy of this form for your records.

Principal's Signature	Date
Witness' Printed Name & Signature (if Applicable)	Date

INVESTIGATOR'S STATEMENT: I certify that I have explained to this subject the nature and purpose of this research, including benefits, risks, costs, and any experimental procedures. I have described the rights and protections afforded to human subjects and have done nothing to pressure, coerce, or falsely entice this subject into participating. I am aware of my obligations under state and federal laws and promise compliance. I have answered the subject's questions and have encouraged him/her to ask additional questions at any time during the course of this study. I have witnessed the above signature(s) on this consent form.

Investigator's Printed Name & Signature	Date

Appendix C
Student Assent

My name is Rakan Alshammari. I work with parents and children, but I am also a doctoral student at Old Dominion University. I am trying to learn more about the effectiveness of the Check-in/Check-out intervention for improving academic and behavioral skills. If you agree, you will be asked to learn to use the Check-in/Check-out intervention when you are in your classroom and center. This study will take about 11 weeks to complete. You will need to work with; Check-in, Check-out mentor and teachers during the Check-in, Check-out intervention. You also will be given a social validity questionnaire two times. One will be at the beginning of the study, and the other at the end of the study.

There are not potential physical risks for participating in this study because the study will not use any physical punishment. The study will use only the datasheet to help track your behaviors. You will work only with teachers with whom you are familiar. However, there is a slight risk of the release of confidential information. To address this potential risk the report will use a fictitious name instead of your real name and will not contain any other identifiable information. Also, there will be not any videotapes. Data will be collected in all phases via observing you on security cameras that include audio and video in the principal's office and under supervision of the principal of the center.

If you agree, you will help us to understand the effectiveness of the Check-in/Check-out intervention, which may help you to improve your behavioral and academic performance in school. It may also help you to manage and control your behaviors. You should know that, if you agree to help, your teachers and classmates won't know that you have participated in the study. You should also know that regardless of whether say "yes" or "no," your choice will not affect your grades. Please talk this over with the center director and your parents before you decide whether to participate in my study. I will also ask the center director and your parents to give their permission for you to be in this study, but even if they say "yes," you can still say "no" and decide not to be in the study.

If you don't want to participate in my study, you don't have to. Remember, participating in the study is up to you and no one will be upset if you don't want to participate. If you decide to stop after the study begins, that is okay, too. Also, remember that no one else, not even your parents, will know whether you've worked with the Check-in/Check-out intervention. You can ask any questions that you have about the study. If you come up with a question later, you can ask your parents or teacher to call me at 651-353-7139. You also can contact the institutional review board chair is Dr. Tancy Vandecar-Burdin, 757-683-3802, tvandeca@odu.edu if you have any question or concern.

Would you like to learn how to use the Check-in/Check-out intervention?
Yes:
No:
Student's Name:
Center Director/Parent's signature:

Appendix D

INFORMED CONSENT DOCUMENT (parents)
OLD DOMINION UNIVERSITY

PROJECT TITLE: Check-in/Check-out to Increase Academic Engagement and Classroom Behavior among Adolescent Students in Juvenile Detention Centers.

INTRODUCTION: The purposes of this form are to give you information that may affect your decision whether to say YES or NO to participation in this research, and to record the consent of those who say YES. The Check-in/Check-out intervention will be conducted in your son's classrooms at his school/center. The purpose of this study is to evaluate the effectiveness of the Check-in/Check-out intervention in terms of improving academic and behavioral skills and helping students to manage their behaviors.

PRINIPAL INVESTIGATOR

Dr. Robert Gable, Professor & Eminent Scholar of special education, Child Study Center room 214, Norfolk, VA 23529. Phone: 757-683-3157, Email: rgable@odu.edu

RESEARCHERS: Rakan Mnawer Alshammari, M.S. Ed. who is doctoral student at Old Dominion University, Darden College of Education Communication Disorders and Special Education; ralsh001@odu.edu

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Dr. Peggy Hester, professor of special education, Child Study Center room 101, Norfolk, VA 23529. Phone: 757-683-4876, Email: phester@odu.edu.

Dr. Kristy Park, associate professor in the Division of Special Education and disability Research at George Mason University Fairfax Campus Finley Building 100B, 4400 University Dr. MS 1A4,Fairfax, VA 22030. Phone: (703) 993-5251, Email: Kparkc@gmu.edu

DESCRIPTION OF RESEARCH STUDY: Several studies have been conducted on the use of the Check-in/Check-out intervention for improving students' behavioral and academic skills. Few of these studies, however, have explained that intervention's effectiveness in terms of helping adolescent students to address their behavioral and academic problems. The purpose of this study is to examine the effectiveness of the Check-in, Check-out intervention in decreasing problem behaviors (e.g., making noise) and increasing academic engagement (e.g., completing homework) of adolescent students in juvenile justice centers. If you decide to participate, then your son will join a study involving research that uses a single subject design to examine the effectiveness of the Check-in, Check-out intervention in terms of improving academic and behavioral skills. Your child will also be taught how to manage their behaviors. If you say YES, then your child's participation will be about 11 weeks; sessions will be conducted at your son's school or center. Approximately seven students will participate in this study. Your child will need to work with their teachers and Check-in, Check-out mentor every day during the Check-in, Check-out intervention and be observed through security cameras that include audio and video. He also will be given social validity questionnaire two times. One will be at the beginning of the study, and the other is at the end of the study.

RISKS AND BENEFITS:

RISKS: There are no foreseeable risks involved in participating in this research because the study will not use any physical punishment. The study will use only the datasheet to help students track their behaviors. Your child will not work with anyone who is not familiar to them. Your child will work with their teachers who are already working with them. However, there is a slight risk of the release of confidential information. To address this potential risk the report will use a fictitious name instead of your child's real name and will not contain any other identifiable information. Also, no video will be stored or archived. Data will be collected via observing the students on security cameras in all phases in the principal office and under supervision of the principal of the center.

BENEFITS: There are no benefits to you for participating in this research.

COSTS AND PAYMENTS

The researchers are unable to provide any payment for participating in this study.

NEW INFORMATION

If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY: None of the information gathered or contained in the report will be used for any purpose other than to fulfill the requirements of the agreement sheet. To ensure confidentiality, the report will replace your student's real name with a fictitious name and will not contain any identifying information. The researcher will be working under the supervision of the classroom teacher and social observation house directors or managers for the confidentiality of information. I am a student please understand that my results and conclusions must be viewed with caution and that they should not be used in any capacity to make decisions about your student's educational program.

WITHDRAWAL PRIVILEGE: It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study -- at any time. Participation is voluntary, and your son may withdraw from the study at any time and for any reason. If you or your son decide not to participate, or if you withdraw your son from the study, there is no penalty or loss of benefits to which you or your son are otherwise entitled.

COMPENSATION FOR ILLNESS AND INJURY: If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm, injury, or illness arising from this study, neither Old Dominion University nor the researchers are able to give your son any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that your son suffers an injury as a result of participation in any research project, you may contact the institutional review board chair is Dr. Tancy Vandecar-Burdin, 757-683-3802, tvandeca@odu.edu who will be glad to review the matter with you.

VOLUNTARY CONSENT: By signing this form, you are saying several things. You are saying that you have read this form or have had it read to you; and that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, Rakan Alshammari should be able to answer them via email (ralsh001@odu.edu) or phone (651-353-7139). Also, you can contact Dr. Robert Gable via email rgable@odu.edu or phone 757-683-3157

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should contact the Old Dominion University Office of Research, at 757-683-3460.And importantly, by signing below, you are telling the researcher YES, that you agree to participate in this study. The researcher should give you a copy of this form for your records.

Subject's Parent / Legally Authorized Representative's Printed Name & Signature	Date
Witness' Printed Name & Signature (if Applicable)	Date

INVESTIGATOR'S STATEMENT: I certify that I have explained to this subject the nature and purpose of this research, including benefits, risks, costs, and any experimental procedures. I have described the rights and protections afforded to human subjects and have done nothing to pressure, coerce, or falsely entice this subject into participating. I am aware of my obligations under state and federal laws and promise compliance. I have answered the subject's questions and have encouraged him/her to ask additional questions at any time during the course of this study. I have witnessed the above signature(s) on this consent form.

Investigator's Printed Name & Signature	Date

Appendix E
INFORMED CONSENT DOCUMENT (teachers)
OLD DOMINION UNIVERSITY

PROJECT TITLE: Check-in/Check-out to Increase Academic Engagement and Classroom Behavior among Adolescent Students in Juvenile Detention Centers.

INTRODUCTION: The purposes of this form are to give you information that may affect your decision whether to say YES or NO to participation in this research, and to record the consent of those who say YES. The Check-in/Check-out intervention will be conducted in your classrooms at participants' school/center. The purpose of this study is to evaluate the effectiveness of the Check-in/Check-out intervention in terms of improving academic and behavioral skills and helping students to manage their behaviors.

PRINIPAL INVESTIGATOR

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Dr. Peggy Hester, professor of special education, Child Study Center room 101, Norfolk, VA 23529. Phone: 757-683-4876, Email: phester@odu.edu.

Dr. Kristy Park, associate professor in the Division of Special Education and disability Research at George Mason University Fairfax Campus Finley Building 100B, 4400 University Dr. MS 1A4, Fairfax, VA 22030. Phone: (703) 993-5251, Email: Kparkc@gmu.edu

DESCRIPTION OF RESEARCH STUDY: Several studies have been conducted on the use of the Check-in/Check-out intervention for improving students' behavioral and academic skills. Few of these studies have explained that intervention's effectiveness in terms of helping adolescent students to address their behavioral and academic problems. Therefore, the purpose of this study is to examine the effectiveness of the Check-in, Check-out intervention in decreasing problem behaviors (e.g., making noise) and increasing academic engagement (e.g., completing homework) of adolescent students in juvenile justice centers. Your involvement in the study is to work with a Check-in, Check-out mentor and students who will receive Check-in, Check-out intervention. You will be responsible to evaluate each student's behavioral performance at the end of your class by using a daily progress report. You and the students will be observed through security cameras that include audio and video. You also will be given a social validity qeustionnaire two times to provide your perception about the Check-in, Check-out intervetion. One will be at the beginning of the study, and the other at the end of the study.

If you decide to participate, then you will join a study involving research that uses a single subject design to examine the effectiveness of the Check-in, Check-out intervention in terms of improving academic and behavioral skills. Your student(s) will also be taught how to manage their behaviors. If you say YES, then your participation will be about 11 weeks; sessions will be conducted at your school or center. Approximately seven students will participate in this study. You also will need to work with your students and a Check-in, Check-out mentor every day during the Check-in, Check-out intervention.

RISKS AND BENEFITS:

RISKS: There is a slight risk of the release of teacher's confidential information. To mitigate this risk, no identification number and/or name will be used. Only fictitious names will be used and all participants in the study will work under the supervision of the principal of the center. The CICO mentor will only need each student's behavioral and academic engagement performance that will be reported in the DPR with a fictitious name for you and students that is provided by the principal of the center. the report will use a

fictitious name instead of each your real name and will not contain any other identifiable information. There also will not be videotapes. Data will be collected via observing the students on security cameras in all phases in the principal office and under supervision of the principal of the center to ensure that all participants' information keeps confidentiality. All data sheets will be stored in a locked filing cabinet in the principal office then will be given physically to the researcher.

BENEFITS: There are no benefits to you for participating in this research.
COSTS AND PAYMENTS: The researchers are unable to provide any payment for participating in this study.
NEW INFORMATION: If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.
CONFIDENTIALITY: None of the information gathered or contained in the report will be used for any purpose other than to fulfill the requirements of the agreement sheet. To ensure confidentiality, the report will replace your student's real name with a fictitious name and will not contain any identifying information. The researcher will be working under the supervision of the social observation house directors or managers for the importance and confidentiality of the information. I am a student so please understand that my results and conclusions must be viewed with caution and that they should not be used in any capacity to make decisions about your student's educational program.
WITHDRAWAL PRIVILEGE: It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study -- at any time. Participation is voluntary, and you and your students may withdraw from the study at any time and for any reason. If you or your students decide not to participate or if you or your students withdraw from the study, there is no penalty or loss of benefits to which you or your students are otherwise entitled.
COMPENSATION FOR ILLNESS AND INJURY: If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm, injury, or illness arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any research project, you may contact the Old Dominion University Office of Research at 757-683-3460 who will be glad to review the matter with you.
VOLUNTARY CONSENT: By signing this form, you are saying several things. You are saying that you have read this form or have had it read to you: that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, Rakan Alshammari should be able to answer them via email (ralsh001@odu.edu) or phone (651-353-7139). Also, you can contact Dr. Robert Gable via email rgable@odu.edu or phone 757-683-3157
If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should contact the institutional review board chair is Dr. Tancy Vandecar-Burdin, 757-683-3802, tvandeca@odu.edu.
And importantly, by signing below, you are telling the researcher YES, that you agree to participate in this study. The researcher should give you a copy of this form for your records.

Teacher's Signature	Date
Witness' Printed Name & Signature (if Applicable)	Date

INVESTIGATOR'S STATEMENT: I certify that I have explained to this subject the nature and purpose of this research, including benefits, risks, costs, and any experimental procedures. I have described the rights and protections afforded to human subjects and have done nothing to pressure, coerce, or falsely entice this subject into participating. I am aware of my obligations under state and federal laws and promise compliance. I have answered the subject's questions and have encouraged him to ask additional questions at any time during the course of this study. I have witnessed the above signature(s) on this consent form.

Investigator's Printed Name & Signature	Date

Appendix F
INFORMED CONSENT DOCUMENT (CICO mentor)
OLD DOMINION UNIVERSITY

PROJECT TITLE: Check-in/Check-out to Increase Academic Engagement and Classroom Behavior among Adolescent Students in Juvenile Detention Centers.

INTRODUCTION: The purposes of this form are to give you information that may affect your decision whether to say YES or NO to participation in this research, and to record the consent of those who say YES. The Check-in/Check-out intervention will be conducted in classrooms at participants' school/center. The purpose of this study is to evaluate the effectiveness of the Check-in/Check-out intervention in terms of improving academic and behavioral skills and helping students to manage their behaviors.

PRINIPAL INVESTIGATOR

Dr. Robert Gable, Professor & Eminent Scholar of special education, Child Study Center room 214, Norfolk, VA 23529. Phone: 757-683-3157, Email: rgable@odu.edu

RESEARCHERS: Rakan Mnawer Alshammari, M.S. Ed. who is doctoral student at Old Dominion University, Darden College of Education Communication Disorders and Special Education; ralsh001@odu.edu

Dr. Jonna Bobzien, associate professor of special education, Child Study Center room 122, Norfolk, VA 23529. Phone: 757-683-3307, Email: jbobzien@odu.edu

Dr. Peggy Hester, professor of special education, Child Study Center room 101, Norfolk, VA 23529. Phone: 757-683-4876, Email: phester@odu.edu.

Dr. Kristy Park, associate professor in the Division of Special Education and disability Research at George Mason University Fairfax Campus Finley Building 100B, 4400 University Dr. MS 1A4, Fairfax, VA 22030. Phone: (703) 993-5251, Email: Kparkc@gmu.edu

DESCRIPTION OF RESEARCH STUDY: Several studies have been conducted on the use of the Check-in/Check-out intervention for improving students' behavioral and academic skills. Few of these studies have explained that intervention's effectiveness in terms of helping adolescent students to address behavioral and academic problems. Therefore, the purpose of this study is to examine the effectiveness of the Check-in, Check-out intervention in decreasing problem behaviors (e.g., making noise) and increasing academic engagement (e.g., completing homework) of adolescent students in juvenile justice centers. You will be given a social validity questionnaire tow times to provide your perception about the Check-in, Check-out intervention. One will be at the beginning of the study, and the other is at the end of the study. You will need to work with students and their teachers every day during the Check-in, Check-out intervention. You will be responsible for meeting with students individually twice a day during the implementing of the intervention. If you decide to participate, then you will join a study involving research that uses a single subject design to examine the effectiveness of the Check-in, Check-out intervention in terms of improving academic and behavioral skills. Your students will also be taught how to manage their behaviors. If you say YES, then your participation will be about 11 weeks; sessions will be conducted at your school or center. Approximately seven students will participate in this study.

RISKS AND BENEFITS:

RISKS: There are no foreseeable risks involved in participating in this research.

BENEFITS: There are no benefits to you for participating in this research.

COSTS AND PAYMENTS: The researchers are unable to provide any payment for participating in this study.

NEW INFORMATION: If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY: None of the information gathered or contained in the report will be used for any purpose other than to fulfill the requirements of the agreement sheet. To ensure confidentiality, the report will replace your student's real name with a fictitious name and will not contain any identifying information. The researcher will be working under the supervision of the social observation house directors or managers for the confidentiality of information. I am a student so please understand that my

results and conclusions must be viewed with caution and that they should not be used in any capacity to make decisions about your student's educational program.

WITHDRAWAL PRIVILEGE: It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study -- at any time. Participation is voluntary, and you and your students may withdraw from the study at any time and for any reason. If you or your students decide not to participate or if you or your students withdraw from the study, there is no penalty or loss of benefits to which you or your students are otherwise entitled.

COMPENSATION FOR ILLNESS AND INJURY: If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm, injury, or illness arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any research project, you may contact the Old Dominion University Office of Research at 757-683-3460 who will be glad to review the matter with you.

VOLUNTARY CONSENT: By signing this form, you are saying several things: You are saying that you have read this form or have had it read to you; that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, Rakan Alshammari should be able to answer them via email (ralsh001@odu.edu) or phone (651-353-7139). Also, you can contact Dr. Robert Gable via email rgable@odu.edu or phone 757-683-3157. If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should contact the institutional review board chair is Dr. Tancy Vandecar-Burdin, 757-683-3802, tvandeca@odu.edu.

And importantly, by signing below, you are telling the researcher YES, that you agree to participate in this study. The researcher should give you a copy of this form for your records.

CICO mentor's Signature	Date
Witness' Printed Name & Signature (if Applicable)	Date

INVESTIGATOR'S STATEMENT: I certify that I have explained to this subject the nature and purpose of this research, including benefits, risks, costs, and any experimental procedures. I have described the rights and protections afforded to human subjects and have done nothing to pressure, coerce, or falsely entice this subject into participating. I am aware of my obligations under state and federal laws and promise compliance. I have answered the subject's questions and have encouraged him/her to ask additional questions at any time during the course of this study. I have witnessed the above signature(s) on this consent form.

Investigator's Printed Name & Signature	Date

Appendix G

INFORMED CONSENT DOCUMENT (observers of the Check-in, Check-out)
OLD DOMINION UNIVERSITY

PROJECT TITLE: Check-in/Check-out to Increase Academic Engagement and Classroom Behavior among Adolescent Students in Juvenile Detention Centers.

INTRODUCTION: The purposes of this form are to give you information that may affect your decision whether to say agree or NO to participation in this research, and to record the consent of those who say YES. The Check-in/Check-out intervention will be conducted in classrooms at participants' school/center. The purpose of this study is to evaluate the effectiveness of the Check-in/Check-out intervention in terms of improving academic and behavioral skills and helping students to manage their behaviors.

RESEARCHER: Rakan Mnawer Alshammari, M.S. Ed. who is a doctoral student, Darden College of Education Communication Disorders and Special Education at Old Dominion University; ralsh001@odu.edu

PRINCIPAL INVESTIGATOR

Dr. Robert Gable, Professor & Eminent Scholar of Special Education, Child Study Center Room 214, Norfolk, VA 23529. Phone: 757-683-3157, Email: rgable@odu.edu

DESCRIPTION OF RESEARCH STUDY: Several studies have been conducted on the use of the Check-in/Check-out intervention for improving students' behavioral and academic skills. Few of these studies, however, have explained that intervention's effectiveness in terms of helping adolescent students to address their behavioral and academic problems. The purpose of this study is to examine the effectiveness of the Check-in, Check-out intervention in decreasing problem behaviors (e.g., making noise) and increasing academic engagement (e.g., completing homework) of adolescent students in juvenile justice centers. If you decide to participate, then you will join a study involving research that uses a single subject design to examine the effectiveness of the Check-in, Check-out intervention in terms of improving academic and behavioral skills. If you say YES, then your participation will be about 11 weeks; sessions will be conducted at your school or center. Approximately seven students will participate in this study. You will observe students' behaviors via security cameras that include audio and video every day during the study of the Check-in, Check-out intervention and work under the supervision of the social observation house directors.

RISKS AND BENEFITS:

RISKS: There are no foreseeable risks involved in participating in this research.

BENEFITS: There are no benefits to you for participating in this research.

COSTS AND PAYMENTS: The researchers are unable to provide any payment for participating in this study.

NEW INFORMATION: If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY: None of the information gathered or contained in the report will be used for any purpose other than to fulfill the requirements of the agreement sheet. To ensure confidentiality, the report will replace your student's real name with a fictitious name and will not contain any identifying information. You and the researcher will be working under the supervision of the social observation house directors or managers for the confidentiality of information.

WITHDRAWAL PRIVILEGE: It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study -- at any time. Participation is voluntary, and you may withdraw from the study at any time and for any reason. If you decide not to participate or if you withdraw from the study, there is no penalty or loss of benefits to which you are otherwise entitled.

COMPENSATION FOR ILLNESS AND INJURY: If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm, injury, or illness arising from this

study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any research project, you may contact the Old Dominion University Office of Research at 757-683-3460 who will be glad to review the matter with you.

VOLUNTARY CONSENT: By signing this form, you are saying several things: You are saying that you have read this form or have had it read to you; and that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, Rakan Alshammari should be able to answer them via email (ralsh001@odu.edu) or phone (651-353-7139). Also, you can contact Dr. Robert Gable via email rgable@odu.edu or phone 757-683-3157. If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should contact the Old Dominion University Office of Research, at 757-683-3460.

And importantly, by signing below, you are telling the researcher YES, that you agree to participate in this study. The researcher should give you a copy of this form for your records.

Observer's Signature	Date
Witness' Printed Name & Signature (if Applicable)	Date

INVESTIGATOR'S STATEMENT: I certify that I have explained to this subject the nature and purpose of this research, including benefits, risks, costs, and any experimental procedures. I have described the rights and protections afforded to human subjects and have done nothing to pressure, coerce, or falsely entice this subject into participating. I am aware of my obligations under state and federal laws and promise compliance. I have answered the subject's questions and have encouraged him to ask additional questions at any time during the course of this study. I have witnessed the above signature(s) on this consent form.

Investigator's Printed Name & Signature	Date

Appendix H

Permission to complete an educational observation for the intervention

I, Rakan Alshammari, am a PhD student at Old Dominion University. This study is being conducted to assess how student use the Check-in/Check-out intervention for improving students' academic and behavioral skills. Students will be observed and receive the Check-in/Check-out intervention in their classrooms. The observation and intervention will take approximately 11 weeks to complete the study. Two teachers and/or educators at your center will observe and record the students' performance and will teach them how to use the Check-in/Check-out intervention.

RISKS: There are no foreseeable risks for participating in this research.

BENEFITS: There are no benefits to you or your child for participating.

CONFIDENTIALITY: None of the information gathered or contained in the report will be used for any purpose other than to fulfill the requirements of the class. To ensure confidentiality, the report will use a fictitious name instead of your child's real name and will not contain any other identifiable information. The researcher and observers will be working under the supervision of the center director/ classroom teacher. I am a student so please understand that my results and conclusions must be viewed with caution and should not be used in any capacity to make decisions regarding your students' educational program. Participation is voluntary, and you and your students may withdraw from the study at any time and for any reason. If you or your students decide not to participate or if you or your child withdraw from the study, there is no penalty or loss of benefits to which you or your child are otherwise entitled. There is no cost to you or your child or any other party. If you have any questions, I can be reached via email (ralsh001@odu.edu) or phone (651-353-7139). Also, you can contact Dr. Robert Gable via email rgable@odu.edu or phone 757-683-3157

CONSENT If you agree to allow your students to participate in this study, please write your name and your child's name below with marking next to the statement below.

___ I give my consent for my child to participate in the Check-in/Check-out study.
Center's director/ parent's name and Signature:
Student's name:
Date:

Appendix I

Monitoring Fidelity of Implementation the check-in, check-out intervention and A daily Progress Report (DPR)

Student Name: Mentor/ Teacher Name:

Direction: Circle "Y" (yes), and the step is completed, and circle "N" (no) means the step was not completed.

Check-in, Check-out Components	DPR 1 Date: / /	DPR 2 Date: / /	DPR 3 Date: / /	DPR 4 Date: / /	DPR 5 Date: / /	DPR 6 Date: / /	DPR 7 Date: / /	DPR 8 Date: / /	DPR 9 Date: / /	DPR 10 Date: / /	Percentage of Component Integrity
Check-in, Check-out Procedures											
Step 1: Morning Check-In	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Step 2: Regular Teacher Feedback using daily progress report	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Step 3: Data Collection and Entry	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Step 4: Check-out	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Step 5: Supervisor signature	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Percentage of Daily Integrity											
Check-in, Check-out Content											
Morning Check-In											
1- Mentor provided positive greeting	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
2- Mentor provided a daily progress report	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
3- Mentor discussed academic and behavioral daily goals	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Regular Teacher Feedback											
1- Teacher marked a daily progress report	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
2- Teacher provided verbal feedback to student	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Afternoon Check-out											
1- Collected DPR from student	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
2- Reviewed and calculated percentage of the days progress	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
3- Asked student to identify expectations	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
4- Concluded day with a positive statement	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
5- Reminded student to get parent/ Supervisor signature	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Percentage of Daily Integrity											
To calculate the percentage for the daily and component treatment integrity for individual observer: Divide the total obtained number of "Y" by 15 and then multiply by 100. Percentage:											

Appendix J

Social Validity for Teachers – Pre- Intervention

Name: _____ Date: _____

School name: _____

Thank you for providing your views about the Check-in, Check-out intervention. The purpose of this survey is to obtain information that will aid in determining the effectiveness and usefulness of the Check-in, Check-out intervention which is intended to be used by all educators and staff. Please read the following statements regarding the Check-in, Check-out, and choose the response which best describes your agreement or disagreement with each statement.

	Strongly disagree	*Disagree*	*Somewhat disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
1. This would be an acceptable intervention for the students' needs.	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate for their students with problem behaviors.	1	2	3	4	5	6
3. This intervention should prove effective in supporting the student's behavioral and academic needs.	1	2	3	4	5	6
4. I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5. The student's behavior problems are severe enough to warrant use of this intervention.	1	2	3	4	5	6
6. Most teachers would find this intervention suitable for the needs of their students with problem behaviors.	1	2	3	4	5	6
7. I would be willing to use this intervention in the classroom setting.	1	2	3	4	5	6
8. This intervention would not result in negative side effects for the students with problem behaviors.	1	2	3	4	5	6
9. This intervention would be appropriate for a variety of students with and without behavioral and emotional disorders.	1	2	3	4	5	6
10. This intervention is consistent with those I have used in classroom settings.	1	2	3	4	5	6
11. The intervention is a fair way to handle the students' behavioral and academic needs.	1	2	3	4	5	6
12. This intervention is reasonable for the needs of the students.	1	2	3	4	5	6
13. I like the procedures used in this intervention.	1	2	3	4	5	6
14. This intervention would be a good way to handle this students' needs.	1	2	3	4	5	6
15. Overall, this intervention would be beneficial for the students.	1	2	3	4	5	6

Total (sum of all points circled; higher scores indicate higher acceptability; range = 15-90):

Appendix K

Social Validity for Students - Pre-Intervention

Student Name: Data: / /

Thank you for providing your views about the Check-in, Check-out intervention. The purpose of this survey is to obtain information that will aid in determining the effectiveness and usefulness of the Check-in, Check-out intervention which is intended to be used by all educators and staff. Please think about your current academic and behavior performances, read the following statements regarding the Check-in, Check-out, and please circle the number which best describes your agreement or disagreement with each statement.

	I strongly agree 	*Agree*	*Somewhat agree*	*Somewhat disagree*	*Disagree*	*I strongly do not agree* 
1- The Check-in, Check-out intervention may help improve my academic and behavior performances.	1	2	3	4	5	6
2- I think my teacher will be too harsh when evaluating my academic engagement and behaviors in the classroom.	1	2	3	4	5	6
3- Being in this intervention may cause problems with my friends.	1	2	3	4	5	6
4- There are better ways to teach me.	1	2	3	4	5	6
5- This intervention might help other students improve their academic and behavior performances	1	2	3	4	5	6
6- I think I will like being in this intervention.	1	2	3	4	5	6
7- I think being in this intervention will help me do better in school.	1	2	3	4	5	6

Appendix L

Social Validity for Teachers – Post-Intervention

Name: Date: School:

Thank you for providing your views about the Check-in, Check-out being implemented at your school. The purpose of this survey is to obtain information that will aid in determining the effectiveness and usefulness of the Check-in, Check-out intervention which is intended to be used by all educators and staff. Please, read the following statements regarding the Check-in, Check-out, and choose the response which best describes your agreement or disagreement with each statement.

	Strongly disagree	*Disagree*	*Somewhat disagree*	*Somewhat agree*	*Agree*	*Strongly agree*
. This was an acceptable intervention for the student's needs.	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate for their students with similar needs.	1	2	3	4	5	6
3. This intervention proved effective in supporting the students' behavioral and academic needs.	1	2	3	4	5	6
4. I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5. The students' needs were severe enough to warrant use of this intervention.	1	2	3	4	5	6
6. Most teachers would find this intervention suitable for the needs of these children.	1	2	3	4	5	6
7. I would be willing to use this intervention in the classroom setting.	1	2	3	4	5	6
8. This intervention did not result in negative side effects for the students.	1	2	3	4	5	6
9. This intervention would be appropriate for a variety of students.	1	2	3	4	5	6
10. This intervention was consistent with those I have used in classroom settings.	1	2	3	4	5	6
11. The intervention was a fair way to handle the students' behavioral and academic needs.	1	2	3	4	5	6
12. This intervention was reasonable for the needs of the students.	1	2	3	4	5	6
13. I liked the procedures used in this intervention.	1	2	3	4	5	6
14. This intervention was a good way to handle these students' needs.	1	2	3	4	5	6
15. Overall, this intervention was beneficial for the students.	1	2	3	4	5	6

Total (sum of all points circled; higher scores indicate higher acceptability; range = 15-90):

Comments:

Open-Ended Questions:

1. A) What do you feel is most beneficial about the Check-in, Check-out intervention?

B) What is the least beneficial part?

2. Do you think that you and your students' participation in Check-in, Check-out helped your students' behavior, social skills, and/or learning problems to improve? Why or why not? or if so, how?

3. What would you change about this intervention (e.g., components, design, implementation, etc.) to make it more student-friendly and educator-friendly?

4. What other information would you like to contribute about this intervention?

Appendix M

Social Validity for Students - Post-Intervention

Student Name: Data: / /

Thank you for providing your views about the Check-in, Check-out intervention. The purpose of this survey is to obtain information that will aid in determining the effectiveness and usefulness of the Check-in, Check-out intervention which is intended to be used by all educators and staff. Please think about the current academic and behavior performances, read the following statements regarding the Check-in, Check-out, and please circle the number which best describes your agreement or disagreement with each statement.

	I strongly agree 	*Agree*	*Somewhat agree*	*Somewhat disagree*	*Disagree*	*I strongly do not agree* 
1- The CICO intervention was effective and helped improve my academic and behavior performances.	1	2	3	4	5	6
2- I think my teacher was too harsh when he evaluated my academic engagement and behaviors in the classroom.	1	2	3	4	5	6
3- Being in this intervention caused problems with my friends.	1	2	3	4	5	6
4- There were better ways to teach me.	1	2	3	4	5	6
5- This intervention could help other students improve their academic and behavior performances	1	2	3	4	5	6
6- I liked the intervention we used.	1	2	3	4	5	6
7- Being in this intervention helped me do better in school.	1	2	3	4	5	6

Student participants were asked the following questions by the researcher:

1- How did you like using the Check-in, Check-out intervention?

2- What did you not like about the Check-in, Check-out intervention?

3- Do you think Check-in, Check-out helped you do better work?

4- How did you feel when you met your goal on the Check-in, Check-out?

5- Tell me what you liked about working with your mentor?

6- What else would you like to say about the Check-in, Check-out intervention?

Appendix N
Daily Progress Report for Teachers

A Check-in, Check-out Mentor (morning meeting)

Check in

School/Center Name: Student Name: Today's Goal: Class: Check In:
Date Student Signature:

A teacher Section

Total class period: 35 minutes

	1st class (Math)	2nd class (Reading)	3rd class (English)	4th class	5th class	6th class	7th class
Behavior Problems **Verbal as:** talks out **Physical as:** moves around classroom	2 1 0	2 1 0	2 1 0	2 1 0	2 1 0	2 1 0	2 1 0
Academic Engagement Behaviors as: class work completion, raises hand appropriately)	2 1 0	2 1 0	2 1 0	2 1 0	2 1 0	2 1 0	2 1 0

Comment: ……
……..
……..

A CICO Mentor Section (afternoon meeting)

Daily Point Total _____ / 2 = _____x 100 _____ (Daily Point Percentage for behavior problems)
Daily Point Total _____ / 2 = _____x 100 _____ (Daily Point Percentage for academic engagement behaviors)
Two goals for student: (1) to decrease the exhibition of behavior problems and (2) to increase the exhibition of academic engagement behaviors for 100% in each class

Daily point Percentage for each class

Math: behavior problems _____%, Academic engagement behaviors _____% **Reading:** behavior problems _____%, academic engagement behaviors _____%
English: behavior problems _____%, Academic engagement behaviors _____%

Check out

Meet the goal for behavior problems: Yes: ----- No: ------
Meet the goal for academic engagement behaviors: Yes: ----- No: ------

Key Points:
0 = Exhibiting three or more times of behavior problems (e.g., talks out) and does not exhibit any academic engagement behaviors, such as classwork completion.
1 = Exhibiting one to two times of behavior problems (e.g., talks out) and exhibits one to two behaviors of academic engagement behaviors, such as classwork completion.
2 = Do not exhibit any behaviors of behavior problems (e.g., talks out) and exhibits three or more behaviors of academic engagement behaviors, such as classwork completion.

Definitions of Academic and Behavioral Expectations

Notice: Any academic engagement behaviors and inappropriate behaviors must be seen and heard

Problem Behaviors: Verbal action (i.e., talks out and/ or talks to peers without teacher's permission, makes a noise, uses of profanity and verbal insults toward a teacher/ or peers; physical actions, such as leaving designated area, moves around classroom, makes noise like singing, intentional coughing, stomps feet on floor, makes animal noises, gets out of seat during independent work time.
Academic Engagement Behaviors: It is defined as follows teacher requests within 10 seconds, homework completion, sits appropriately in assigned desk chair, orienting eyes toward teacher or has relevant materials for academic task, class work completion, raises hand before speaking.

Appendix O
Daily Progress Report (DRP) For Observers

School/Center Name: _____
Student Name: _____ Today's Goal: _____ Observer Name: _____ Check In: __ Date: _____ Observer Signature: _____

Class Name: _____ **Total period:**
10 minutes

Start Time: Notice: Any academic engagement behaviors and inappropriate behaviors must be seen and heard **End Time:**
Between each interval period of observation, the observer will stop 20 seconds for recoding

	1st Period (30s)	2nd Period (30s)	3rd Period (30s)	4th Period (30s)	5th Period (30s)	6th Period (30s)	7th Period (30s)	8th Period (30s)	9th Period (30s)	10th Period (30s)	11th Period (30s)	12th Period (30s)	13th Period (30s)	14th Period (30s)	15th Period (30s)	16th Period (30s)	17th Period (30s)	18th Period (30s)	19th Period (30s)	20th Period (30s)	Total mark only
Problem Behaviors (PB)																					
	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2		
Academic Disengagement (AD)																					
	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2		
Appropriate behaviors (AB)																					
	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2		
Academic Engagement (AE)																					
	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2		

Comments:.....
.....
.....
.....
.....

To calculate the percentage of each Dependent Variables

Problem Behaviors: 40 – A Daily Obtained Point Total of obtained rating number _____ / 40 = _____x 100 _____%____ (Daily Point Percentage for Problem Behaviors)
Academic Disengagement: 40 – A Daily Obtained Point Total of Obtained Rating Number _____ / 40 = _____x 100 _____%____ (Daily Point Percentage for Academic Disengagement)
Appropriate Behavior: Daily Point Total Obtained Rating Number _____ / 40 = _____x 100 _____ (Daily Point Percentage for appropriate behavior)
Academic Engagement: Daily Point Total Obtained Rating Number _____ / 40 = _____x 100 ___%____ (Daily Point Percentage for Academic engagement)

To calculate inter-observer agreement (IOA)

Total marks of whole dependent variables: _____
Total mark of main observer: ___ / total number of second observer: ____ x 100 = ___ %

Key Points: 0 = Exhibiting three or more times of PB (e.g., talking out) and AD; does not exhibit any AE (e.g., classwork completion) and appropriate behaviors.
1 = Exhibiting one to two times of PB (e.g., talking out) and AD; exhibits one to two behaviors of AE (e.g., classwork completion) and appropriate behaviors.
2 = Do not exhibit any behaviors of PB (e.g., talking out) and AD; exhibits three or more behaviors of AE (e.g., classwork completion) and appropriate behaviors.

Appendix P

What did you learn from your intervention today?

I learned many things from my intervention today. First, I have learned that I have to be respectful in school. I have to respond to my teachers' questions using appropriate words. Second, I have learned that I have to follow my school rules to be safe in school. I have learned that I must avoid fighting with others. Third, I have learned that I have to be a good learner. I should follow my teachers' instruction and focus on them when they are teaching.

CURRICULUM VITAE

PERSONNAL INFORMATION

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EDUCATIONAL DEGREE AND BACKGROUND

August 2016-Presnt	Old Dominion University, Norfolk, VA	Ph.D. in special education with an emphasis in Emotional and Behavioral Disorders.
May 11, 2019	Old Dominion University, Norfolk, VA	Academic Certificate for Autism
Spring 2018	Old Dominion University, Norfolk, VA	Leadership Certification Program
August 2014 -December 2015	Shippensburg University, Shippensburg, PA	Master of Special Education, concentration in Emotional and Behavioral Disorders
May 2005 - May 2010	Qassim University, Qassim, Saudi Arabia	Bachelor of Special Education, Hearing Impairment-Special Education

LANGUAGES

Arabic	Native language
English	Excellent
Saudi Sign Language (KSA)	Good

Computer Skills

Microsoft office

SPSS software

HONOR

Year 2019: Certificate of appreciation for effort and outstanding contribution as cultural affairs representation of the Saudi Student Association at Old Dominion University	Saudi Arabian Cultural Mission To the USA
Year 2019: Certificate of appreciation for effort and devotion and dedication for Saudi Student Association at Old Dominion University	Old Doming University, Norfolk, VA
May 2019: Certificate of appreciation for outstanding contribution and valuable support for DMV Graduation Ceremony	
April 25, 2019: Certificate of appreciation for services and dedication as a participant at international Festival Day	Norfolk State University, Norfolk, VA
March 5, 2019: Certificate of recognition for outstanding and support and valuable contribution to the Global Café Saudi Arabia	Old Doming University, Norfolk, VA
October 29, 2019: Certificate of recognition for outstanding and support and valuable contribution to the Saudi National Day	Old Doming University, Norfolk, VA
2009 - 2010: Second Class Honor	Qassim University, Qassim, Saudi Arabia

RESEARCH PROJECTS

Michalek, A. M., Raver, S. A., Richels, C., Murphy, K. A., & Alshammari, R. (2019). Using focused recasting and auditory bombardment to teach child-specific morphosyntactical skills to preschoolers who are deaf or hard of hearing. *Deafness & Education International,* 1-21. doi: 10.1080/14643154.2019.1627737

Alfadeed, K. & Alshammari, R. (2018) the availability of consulting services provided by the department of special education at northern border university to parents and teachers. *International Journal of Educational and Psychological Sciences, 450*(6094), 1-22.

Alshammair, R. Gable, R. Hester, P. Bobzien, J. *Check-In/Check-Out for Improving Behavioral and Academic Outcomes for Students with Behavior Problems: A Systematic Review*, Manuscript submitted for publication

PROFESSIONAL EXPERIENCE

2017 – Present	Lecture, Northern Borders University	Saudi Arabia, Rafha
Year 2020	Club President of the Saudi Student Association for Saudi Arabian Cultural Mission	SACM & Old Dominion University, Norfolk, VA
Year 2019	Cultural Affairs Representative of the Saudi Student Association for Saudi Arabian Cultural Mission	SACM & Old Dominion University, Norfolk, VA
2010- 2016	Teaching Assistant, Northern Borders University	Saudi Arabia, Rafha

TEACHING INTERNSHIPS

Summary 2018	Southeastern Cooperative Educational Programs (SECEP), at ODU	Down Syndrome 5k at Mt. Trashmore, VA Beach
October 2015- December 2015	Yellow Breeches Educational Center (YBEC), Carlisle, PA	YBEC is private academic school licensed by the Commonwealth of Pennsylvania that use a multidisciplinary approach to educating secondary aged students with emotional problems.
August 2015 – October 2015	Thomas W. Holtzman Elementary School, Harrisburg, PA	It has regular students and student with disabilities (e.g., emotional and behavioral disorders, learning disabilities, autism)
2009-2010	Teacher, Hope Institute for the Deaf	Saudi Arabi, Buraydah

PROFFSSIONAL EXPERIENCES

Fall 2020: Teaching assistant & a full instructor, ODU	SPED 613: Human Growth and Development. 3 Credits. For two courses
Spring 2019: Teaching assistant, ODU	SPED 469: Communication/Language Development/Intervention for Students with Significant Disabilities. 3 Credits.
Fall 2018: Teaching assistant, ODU	SPED 627: Instructional Strategies for Students with Autism Spectrum Disorders. 3 Credits.
Since Fall 2010: Teaching assistant, NBU	• Taught specialized courses in Introduction to Special Education, Emotional and Behavioral Disorders, and Introduction to Learning Disabilities to 78 students • Teach Education students on general special education courses • Establish positive relationships; assisted staff in the management of student behavior by applying proactive strategies • Ensure safety responsibilities for students in all environments and provided direct instructional support to individual and groups of students • Collect data in accordance with student's IEP goals and objectives • Follow written and oral instructions; communicated effectively giving clear and concise directions • Assist in organizing classroom materials and helped develop related activity and learning centers, including visual aids • Assist students in adapting assignments either for the classroom and homework • Advise students on recommendations for academic schedules, develop outline of potential course schedules for 14 students
Spring 2010: Teacher, Hope Institute for the Deaf	• Taught specialized courses in Writing and Reading to 9 students • Participated in a magazine article outlining the history of deaf culture and how manage deaf education of students

COURSES TAUGHT AT NORTHERN BORDERS UNIVERSITY

ESPE 306	Academic skills for students with special needs (1)
ESPE 307	Academic skills for students with special needs (2)
ESPE 216	Social and Behavioral Problems of Students Learning Disabilities
1604211	School activities for students with disabilities
ESPE 208	Behavioral problems common to students with special needs
ECUR351	Teaching methods for students with disabilities
ECUR 461	Field education / internship

ESPE 201	Introduction to Special education
EEDU 331	Educational issues and problems
ESPE 303	Educational programs for students with special need

MEMBERSHIP IN PROFESSIONAL SOCIETIES

2017-Present	Council for Exceptional Children (CEC)
2017-Present	Student Council for Exceptional Children (SCEC); Old Dominion University

PERSONAL DEVELOPMENTAL TRAINING SKILLS

March 23, 2018	Career Pathways workshop: Teaching Elements of the Job Search
March 8, 2018	Research and Scientific Publication
March 2, 2018	Career Pathways workshop: Making it Through the Home Stretch
	LLS: Cultural Humility and Leadership
February 14, 2018	Managing Conflict using TKI Assessment (12:00 PM – 1:30 PM) at Old Dominion University, Norfolk, VA
Wednesday, Jan 31, 2018	LLS: MBTI – Your Personality Preference and Leadership (12:00PM – 1:30 PM) at Old Dominion University, Norfolk, VA
January 26, 2018	Sign Language for the Deaf course (3 Hrs.), Saudi Students Organization at Gallaudet University
October 18, 2017	CEC Webinar: Behavioral Strategies for Promoting Engagement and Success
April 7th, 2015	Attended Pathways to Success Professional Conference, Shippensburg University, PA
April 2012-June 2013	Intensive English Institute (IEI), Ball State University, Muncie, IN
February 2012-April 2012	English course at ELS Language Center, Dallas, TX
August 2011- February 2012	English course at ELS Language Center St. Paul, MN
2011-2012	Communication disorder (6 months.), Onaizah Association for Humanitarian Services, Saudi Arbia, Onaizah
April 2011-October 2011	English Language Course (6 months.), Al Shmouh Institute, Saudi Arabia, Rafha

March 2010 – April 2010	Sign Language for the Deaf Course (28 Hrs.), College of Education at Qassim University, Saudi Arabia, Qassim
March 2010	Sign Language for the Deaf Course (12 Hrs.), General Directorate of Education at Qassim Region, Saudi Arabia, Qassim
May 2009-June 2009)	English Language Course (30 Hrs.), Saudi British Centre, Saudi Arabia, Qassim
April 2009-May 2009	English Language Course (60 Hrs.), Saudi British Centre, Saudi Arabia, Qassim
2002-2003	Computer Course, Al Ahly Institute, Saudi Arabia, Arar

REGULAR PRESENTATION & WORKSHOP

April 21, 2018	Writing Intervention: Self- Regulation Strategy Development and the POW + TREE Strategy	The VCLD Spring Symposium 2018

POSTER PRESENTATION

November 23, 2019	American Speech Language Hearing Association Annual Convention
March 29, 2018	Graduate Research Achievement Day
November 9-10, 2017	The Annual PACEC conference

VOLUNTEER WORK

February 2018 to March 2018	Southeastern Cooperative Educational Programs (SECEP), ODU
October 22, 2017	Down Syndrome 5k at Mt. Trashmore, VA Beach
2016-2017	ODU to Host Fourth Annual Little Feet Meet for Children with Disabilities (the Special Olympics Virginian)
2014-2015	Participation with Saudi Culture Club, Shippensburg University
2010-2011	Week of the Deaf, Northern Borders University, Saudi Arabia, Qassim
2009-2010	Week of the Deaf, Qassim University, Saudi Arabia, Qassim
2009-2010	World Autism Awareness Day, Qassim University, Saudi Arabia, Qassim

CONFERENCES ATTENDANCE

April 27, 2019	The Virginia Council for Learning Disabilities Symposium
April 19, 2019	2019 Southeastern School Behavioral Health Conference held in Myrtle Beach, SC
September 24-25, 2015	The Council for Exceptional Children (CCBD) International Conference, Atlanta, GA
November 20-21,2015	The Council for Exceptional Children (PACEC) Conference, Harrisburg, PA