EVALUATION OF THE EFFECTIVENESS OF A CHECK-IN CHECK-OUT BEHAVIORAL INTERVENTION PROGRAM IN A TITLE I ELEMENTARY SCHOOL

by

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ABSTRACT

There is a need for more research related to check-in check-out and how it effects a variety of student outcomes, both during intervention and for years after the intervention has been implemented. The purpose of this study was to examine the impact of check-in check-out, a Tier 2 behavior intervention, on multiple student outcomes. The participants of the study included 25 elementary students who were examined over multiple years. The student outcomes that were analyzed included participant scores on measures of academic achievement, measures of student behavior (e.g., frequency of absences, tardies, etc.) and measures of student discipline (e.g., frequency of office discipline referrals, suspension, and expulsion). The results revealed that check-in check-out improved student outcomes related to scores on academic achievement measures and school tardiness.

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CHAPTER ONE INTRODUCTION

Overview

Students that are frequently disruptive and off-task during class often require extra support during the school day to help prevent and decrease problematic behaviors. There are a variety of methods, or interventions, that educators can use to address problematic student behaviors. One such method is known as check-in check-out (CICO; Campbell, Rodriguez, Anderson, & Barnes, 2013). Check-in check-out is a behavior intervention that effectively decreases disruptive student behaviors, increases academic engagement, and improves student outcomes related to student discipline. Check-in check-out requires students to check-in every morning with a designated adult before the start of the school day to review behavioral expectations and to help students get their day off to the best start possible. At the end of the school day, students are required to check-out with their designated adult to review the progress they made toward their behavior goals.

Student Engagement and Academic Achievement

Student engagement, also referred to as school engagement, is multidimensional and involves one's level of commitment toward education, active participation in all school settings, and a positive attitude toward students, staff, and peers (Christenson et al., 2008). Measures of student engagement include measures of positive social behavior and measures of academic success. Some of the behaviors that are used to assess student engagement include class attendance, attitudes toward school, academic effort, and academic success. Academic engagement is one of the subtypes of student engagement (Christenson et al., 2008). Academic engagement involves the amount of instructional time students spend on tasks and activities that promote learning goals and objectives (Christenson et al., 2008; Johns, Crowley, & Guetzloe, 2008; Kauchak & Eggen, 1993; Slavin, 2003). Time-on-task is one of the most common indicators of academic engagement (Christenson et al., 2008).

Several research findings indicate that time-on-task, or engaged time, relates to academic achievement (Greenwood, Horton, & Utley, 2002; Johns et al., 2008; Slavin, 2003). Non-engaged time, or time-off-task, can be defined as engagement in activities that do not support instructional learning goals and objectives (Baker, Corbett, Koedinger, & Wagner, 2004). Students who exhibit noncompliant behaviors are more likely to be off-task, or disengaged, than compliant on-task peers (Finn, Pannozzo, & Voelkl, 1995).

Haskins, Walden, and Ramey (1983) found that both disruptive and off-task behaviors were demonstrated more frequently by elementary students that were low academic achievers than students who were high academic achievers. In this study, 70% of the students who engaged in off-task behaviors were 8 times more often than highachieving students. Physical aggression (i.e., hitting) and grabbing learning materials from others were the two most common disruptive behaviors exhibited by low-academic achievers.

Student Disengagement, Disruptive Behaviors, and Academic Achievement

Time-off-task adversely impacts student learning and hinders academic achievement (Godwin, Almeda, Petroccia, Baker, & Fisher, 2013). Students who are behaviorally disengaged are more likely to spend time off-task and are also more likely to exhibit disruptive behavior instead of learning (Haskins et al., 1983). Disengaged students are at-risk for poor academic outcomes and school failure (Finn et al., 1995; Haskins et al., 1983).

Many studies suggest that student lack of engagement, or disengagement, is negatively related to academic success and also predicts disruptive student behaviors (Finn, 1989; Finn et al., 1995; Newmann, Wehlage, & Lamborn, 1992). The most common disruptive behaviors students displayed at school include getting out of ones' seat without permission, disrespect, and talking during teacher instruction (McKissick, Hawkins, Lentz, Hailley, & McGuire, 2010). These behaviors result in less teacherdirected academic instruction, deficits in academic performance, and poor scores on standardized measures of academic achievement (Canter, Paige, Roth, Romero, & Carroll, 2004). Elementary school students who engage in disruptive behavior have been found to have lower scores on academic achievement measures than engaged peers (Finn et al., 1995; Greenwood et al., 2002; Haskins et al., 1983; Swift & Spivack, 1969).

Finn et al. (1995) discovered differences in academic achievement between fourth-grade students who engaged in disruptive behaviors and fourth graders who displayed inattentive-withdrawn behaviors. The results from the study indicated that disruptive students and inattentive-withdrawn students scored significantly lower than compliant peers on criterion-referenced and norm-referenced measures of academic achievement. Additionally, inattentive-withdrawn students were found to have significantly lower scores on academic achievement measures than disruptive peers.

Research by Greenwood et al. (2002) examined how levels of academic engagement and inappropriate behavior vary based on student academic ability.

Participants were placed into low-, middle-, and high- achievement groups based on test scores and grades. If the participant was in special education, they were grouped into the Individualized Education Program (IEP) group. The low-achievement group consisted of students who were most at-risk for school failure, had below average scores on tests, and poor grades. Participants in the middle achievement group had grades and test scores within the average range. Participants who had above average grades and test performance were included in the high-achievement group. Although results revealed that the amount of academic engagement was not significantly different between groups, significant differences were found regarding student behavior. Participants in the IEP group exhibited significantly higher levels of inappropriate behavior than students in the middle- and high- achieving groups. More specifically, participants in the IEP group were found to exhibit inappropriate behaviors, on average, 19.2 % of the time, while participants in the middle- and high- achievement groups were found to exhibit inappropriate behaviors 13.2 % and 13.7 % of the time, respectively. Overall, the results indicated that the frequency of disruptive behaviors were correlated with low levels of academic achievement and an increased need for special education services.

Responding to Disruptive Student Behavior

How educators respond to disruptive student behavior is critical, yet varies broadly across the country (Dinkes, Kemp, & Baum, 2009; National Association of School Psychologists; [NASP], 2002; Sugai & Horner, 2008; Tidwell, Flannery, & Lewis-Palmer, 2003). Some educators aim to prevent problematic behaviors from occurring in the first place. Others (Dinkes, Kemp, & Baum, 2009; NASP, 2002; Sugai & Horner, 2008; Tidwell, Flannery, & Lewis-Palmer, 2003) react to problem behaviors by utilizing punishment-based strategies (e.g., detention, suspension, expulsion) and policies (e.g., zero-tolerance policies).

For decades in education, there has been a debate between which school discipline strategies are the most effective at decreasing problematic student behaviors (NASP, 2002). According to the literature, best practices related to school discipline ensures the safety of all individuals by teaching students the behaviors that are expected, promoting expected behaviors, and giving fair, consistent, and predetermined consequences for specific inappropriate behaviors. Prevention based discipline strategies are beneficial for all students in general education and special education (NASP, 2002; Sugai & Horner, 2008). Prevention strategies include teaching students the behaviors expected and encouraging the desired behaviors through the use of rewards, also known as positive reinforcement. Current approaches to school discipline involve traditional, punishment-based methods and positive, prevention-based methods.

Traditional approaches. Traditional school discipline systems revolve around the use of punishment, get tough practices, and zero-tolerance policies to manage student behaviors (Martinez, 2009; NASP, 2002; Simonsen, Sugai, & Negron, 2008). Traditional school discipline practices typically focus on utilizing disciplinary procedures that decrease unwanted student behaviors (Skiba & Peterson, 2000). Teachers frequently respond to unwanted student behavior by using discipline strategies that involve punishment techniques (Sugai & Horner, 2002). These techniques result in aversive consequences and include things such as removing the student from the classroom, sending the student to the office (i.e., office discipline referrals), suspension, and expulsion. Aversive consequences are considered effective if the outcome results in a decrease of problematic student behaviors (Heitzman, 1983).

Get tough discipline practices are characterized by the strict adherence to school rules and harsh punishments for any rule infractions (Simonsen et al., 2008). When traditional discipline policies did not produce the desired results, schools took further action by "getting tougher." Getting tougher, or using more intense strategies, often meant adopting additional practices, such as zero-tolerance policies (Skiba & Peterson, 2000; Simonsen et al., 2008).

Zero-tolerance. Zero-tolerance policies often require schools to use harsh forms of punishment (e.g., suspension, expulsion) when students violate a variety of rules (Evenson, Justinger, Pelischek, & Schulz, 2009; Skiba & Peterson, 1999; Sugai & Horner, 2002). Zero-tolerance offenses range broadly from serious infractions (e.g., gang involvement) to less serious infractions (e.g., talking in class when teacher is giving instruction; Allman & Slate, 2011; Skiba & Peterson, 1999; Skiba & Peterson, 2000). Heaviside, Rowand, Williams, and Farris (1998) conducted a 4-year study on school violence to see if zero-tolerance policies reduced serious student misbehaviors. Serious student misbehaviors included insubordination, physical fights, the distribution, possession, or use of alcohol and/or illegal drugs, the use or distribution of firearms and/or any explosive devices. The results indicated no significant differences between the amount of minor offenses or the amount of major offenses after zero-tolerance policies were implemented in schools.

Few studies indicate that zero-tolerance policies effectively reduced problematic student behavior (Allman & Slate, 2011; Evenson et al., 2009; Lipsey & Wilson, 1993;

Skiba & Peterson, 1999; Skiba & Peterson, 2000). In a review of the literature on school discipline in public education, Allman and Slate (2011) found little evidence that zero-tolerance policies were effective at reducing problematic student behavior. According to Allman and Slate, recent data from the National Center for Education Statistics in 2009 revealed that the frequency of student behaviors that result in disciplinary action has not decreased despite the implementation of zero-tolerance policies (Allman & Slate, 2011). Some studies suggest that zero-tolerance may have a negative impact on student outcomes (Allman & Slate, 2011; Bear, 1998). More specifically, the research suggests that zero-tolerance policies may increase the likelihood of future suspensions, academic failure, and student drop-out.

Traditional, reactive approaches to school discipline lack empirical support and may adversely impact student outcomes (Allman & Slate, 2011; Bear, 1998; Skiba & Peterson, 1999; Skiba & Peterson, 2000; Sugai & Horner, 2002). Side effects of traditional approaches include increases in aggressive behaviors, increases in suspension rates, and setbacks in academic achievement (Allman & Slate, 2011; Heitzman, 1983; Sugai & Horner, 2008).

Positive approaches. The 1997 amendments to the Individuals with Disabilities Education Act indicated a shift toward positive school discipline through the concept of positive behavioral interventions and supports (PBIS; Sugai et al., 2000). Research on school discipline supports the use of positive approaches that focus on prevention, increasing desired behaviors, and changing the student's environment to encourage positive interactions with others (NASP, 2002). Several effective positive behavioral strategies that schools may choose to implement as part of their positive school discipline practices include violence prevention programs, social skills instruction, early intervention, teacher support teams, adult mentors, and positive behavior interventions and supports (NASP, 2002). The most common, effective, and empirically validated approach to school discipline today is broadly referred to as positive behavioral interventions and supports (Bui, Quirk, Almazan, & Valenti, 2010).

Positive Behavior Interventions and Supports

Positive behavior interventions and supports is a positive approach to school discipline that prevents and reduces problematic student behaviors by changing the school environment in ways that encourage positive social interactions with others (Carr et al., 2002). Human behavior is viewed using a behavioral science perspective and is thought of as something learned, alterable, and influenced by the environment (Sugai et al., 2000). Interventions, or the methods used to prevent and/or decrease problem behaviors, are based on the needs of the desired behavior, the environment, social values, and a variety of student outcomes. The interventions implemented within this framework are research validated and problems are solved using data-based decision making. Social values are considered when selecting the type of intervention and the associated outcomes of the selected intervention. Behavior change is viewed from a systemic standpoint, meaning that for change to occur, the systems involved (i.e., school, home, community) must be restructured and prepared for the desired changes (Carr et al., 2002; Sugai et al., 2000). Positive behavior interventions and supports were originally applied at the individual level, but have successfully expanded to a school-wide systems approach, often referred to as school-wide positive behavior interventions and supports (SWPBIS).

School-wide Positive Behavior Interventions and Supports

The school-wide positive behavior interventions and supports framework can be viewed as a universal, prevention-based approach to school discipline (Warren et al., 2006). It incorporates the foundational components of positive behavior interventions and supports, but specifically targets the entire school as a whole. The fundamental components of school-wide positive behavior interventions and supports consist of prevention, a proactive instructional perspective, appropriate and research validated practices, a systemic outlook, and the use of data to guide decision making (Sugai & Horner, 2002).

Prevention

The first component of school-wide positive behavior intervention and supports is prevention (Sugai & Horner, 2002). Research from community health models on prevention suggests the use of a three-tiered framework that SWPBIS utilizes (Walker et al., 1996). This three-tiered continuum of support responds to all student behaviors proactively by teaching students the school-wide behavioral expectations. Teachers then model the desired behaviors and give students opportunities to practice these behaviors across all school environments (Simonsen, Sugai, & Negron, 2008). Providing all students with an understanding of what types of behaviors are expected at school and also teaching students the required skills need to perform the expected behaviors prevents school failure and social skill deficits. The interventions and supports become progressively more intense as students move up from Tier 1 to Tier 2 and from Tier 2 to Tier 3 (Horner, Sugai, & Anderson, 2010). The three tiers of support are commonly referred to as the primary, secondary, and tertiary levels of prevention (Horner et al., 2010; Simonsen et al., 2008; Walker, Cheney, Stage, & Blum, 2005).

Primary prevention. First, school-wide expectations are established and a range of consequences for problem behaviors are predetermined (Bui et al., 2010; Simonsen et al., 2008). During Tier 1, also known as the primary or universal level, the entire student population receives explicit instruction on school-wide behavioral expectations throughout all classrooms and school environments (Bui et al., 2010; Horner et al., 2010; Walker et al., 2005). Teachers and school staff frequently and positively reinforce students when they exhibit behaviors reflective of school expectations. Data are collected and analyzed by designated staff members to determine if behavioral outcomes are successfully being reached (Bui et al., 2010). The data collected may come in a variety of forms including the frequency of office discipline referrals, in-school suspensions, out-of-school suspensions, and other informative, observable measures such as days absent and days tardy (Simonsen et al., 2008).

Implementation fidelity is monitored throughout all three tiers by predetermined measures (e.g., self-monitoring checklists for students/teachers, administrative observation forms) to ensure that the interventions are executed accurately and as intended (Horner et al., 2010; Simonsen et al., 2008). In theory, if the primary intervention is based in research and implemented with adequate fidelity, approximately 80% of the student population will positively respond to Tier 1 interventions and will not need the additional supports of Tier 2 or Tier 3 (Horner & Sugai, 2002, Sugai et al., 2000). The data gathered during Tier 1 are used to determine which students need additional interventions and supports (Simonsen et al., 2008).

Secondary prevention. The secondary level of prevention, or Tier 2, is roughly composed of 10-15% of the student population and includes the students who failed to respond to the universal prevention methods (Horner et al., 2010; Sugai & Horner, 2002; Walker et al., 2005). Students in Tier 2 are considered at-risk for developing substantially worse outcomes academically, behaviorally, and emotionally than students in Tier 1 (Sugai & Horner, 2002; Walker et al., 2005). Students within the secondary level of support exhibit behaviors that are problematic, but do not pose a serious or dangerous threat to themselves or others (Simonsen et al., 2008). The goal of secondary prevention is to prevent the current behaviors from becoming more severe and to decrease the number of students who are exhibiting problematic behaviors (Sugai & Horner, 2002). These two goals are achieved by providing students with additional supports and interventions that are more intense versions of the practices used in Tier 1, but often provide students with increased amounts of positive reinforcement (Simonsen et al., 2008). Tier 2 interventions are conducted in small groups or in pairs. Data are collected frequently to monitor student progress toward behavioral objectives and are also used to indicate if an intervention needs to be modified to better fit the specific needs of the individual student. Some examples of common empirically validated behavioral supports for Tier 2 are check-in check-out, check and connect, first step to success, and social skills training (Bui et al., 2010; Horner et al., 2010).

Tertiary prevention. Tier 3, also referred to as the tertiary level of prevention, is the last tier and is roughly composed of 5% of the student population (Horner et al., 2010; Sugai & Horner, 2002; Walker et al., 2005). The students in Tier 3 exhibit the most challenging behaviors and have either not responded to the Tier 1 and Tier 2 interventions or are considered to be unlikely to respond to the first two tiers of support. Consequently, students in Tier 3 are considered to be of high risk for significant academic, behavioral, emotional, and social difficulties (Bui et al., 2010; Horner & Sugai, 2002; Walker et al., 2005).

Tertiary supports are highly individualized and are based on the specific needs of the individual student (Horner et al., 2010). Functional behavioral assessments (FBAs) are one of the defining elements of tertiary prevention (Bui et al., 2010). Qualified professionals conduct functional behavior assessments to identify environmental elements that may be maintaining the problem behaviors. Results of the functional behavior assessment help behavior intervention teams create behavior intervention plans (Horner et al., 2010). Behavior intervention plans (BIPs) provide students with the intense, individualized supports needed to ensure student success (Bui et al., 2010). Students receiving Tier 3 interventions have their progress monitored frequently to ensure that they are making sufficient gains toward behavioral outcomes and goals (Horner et al., 2010).

Evidence-base for School-wide Positive Behavior Interventions and Supports

School-wide positive behavior interventions and supports practices are currently implemented in over 13,000 schools across the United States (Horner et al., 2010; Sugai & Simonsen, 2012). Since the 1980s, researchers have completed experimental studies involving the effectiveness of school-wide positive behavior interventions and supports. The research base involves varying characteristics related to specific experimental procedures, methods of assessment, school demographics, outcome variables, and geographic location. These studies have concluded that SWPBS programs that target all

students can be implemented within culturally diverse student populations, reduce problem behaviors, increase the perception of school safety, and increase academic student outcomes (Horner et al., 2010; Sugai et al., 2012).

In an assessment of the evidence base, Chitiyo, May, and Chitiyo (2012) found school-wide positive behavior interventions and supports to effectively reduce levels of student aggression, the number of student office discipline referrals, suspensions, detentions, and unexcused instances of tardiness. The authors found positive improvements for multiple student outcomes. The student outcomes included increases on standardized measures of student achievement, increases on state reading standards, and higher overall student grade-point averages. There is a rich legacy of researchers publishing empirical evidence of school-wide positive behavior supports at all three levels: primary, secondary and tertiary.

Primary evidence-base. Bradshaw, Mitchell, and Leaf (2010) provide an example of a study that documented the longitudinal effectiveness of SWPBIS on student outcomes related to academic achievement, office discipline referrals, and suspensions. Bradshaw et al. (2010) found significant decreases in the number of office discipline referrals and suspensions. The authors also found that scores on standardized academic achievement measures improved, but not to a statistically significant degree. This study provided intensive training on school-wide positive behavior supports for all the school faculty and staff at each of the participating schools. The authors concluded that school-wide positive behavioral supports and interventions effectively reduced the school's overall total number of major office discipline referrals, minor office discipline referrals,

and suspensions. Surprisingly, no significant changes in school-level academic achievement scores were found.

Secondary evidence-base. Secondary levels of support involve the implementation of interventions that target students who are at-risk for academic failure. One of the most common evidence-based secondary interventions is check-in check-out (CICO; Horner et al., 2010). Check-in check-out is a Tier 2 behavioral intervention that prevents problematic student behavior. The goals of check-in check-out are to improve structure in the classroom environment, provide students with social links to adults, grant students access to academic support, and foster communication between home and school. When check-in check-out is implemented within the school-wide positive behavior support framework, significant reductions in problem behavior and increases in academic engagement have been found (Campbell, Rodriguez, Anderson, & Barnes, 2013; Hawken, MacLeod, & Rawlings, 2007; Miller, Dufrene, Sterling, Olmi, & Bachmayer, 2015; Todd, Campbell, Meyer, & Horner, 2008).

Hawken et al. (2007) examined how effective check-in check-out was at reducing the number of office discipline referrals over an eight-month time period. This study was conducted at an urban elementary school, where 66% of the student population qualified for free/reduced lunch and 38% of students were minorities. In order to participate in the study, students had to meet several requirements. Students had to demonstrate problem behaviors throughout the day; meaning that problem behaviors occurred during all subject areas and during both structured and unstructured times. Students who demonstrated problem behaviors during specific classes or at specific times throughout the day were not included. Students also had to receive at least two office discipline

referrals since starting the current school year and students had to be nominated by a staff member to receive extra behavior support. In addition to being enrolled in the check-in check-out intervention program for at least six weeks, students had to enter the intervention program two months after the start of school in order to establish a baseline number of office discipline referrals. The problem behaviors each participant exhibited varied and included talking out, making inappropriate comments, failing to complete work, and failing to keep hands, feet, and objects to self. This study used a multiple baseline design to determine how effective the intervention was at reducing office discipline referrals. There were two phases, baseline and intervention. During the baseline phase, typical behavioral practices and supports were in place. During the intervention phase, the check-in check-out intervention program was implemented. The 12 participants were placed into 4 groups of 3, with 3 participants in each group. Participant groups were created based on the month each participant started the intervention. The total number of office discipline referrals for each group were added together every month and then compared between baseline and intervention phases. The results showed that 3 of the 4 groups, or 9 of the 12 participants, were sent to the office less frequently, meaning that the number of office discipline referrals decreased from baseline to intervention phase. For Group 1, the average number of office discipline referrals during baseline was 7.5 and it was 3.67 during intervention. For Group 2, the average number of office discipline referrals was 3.25 during baseline and 1.75 during intervention. For Group 3, the average number of office discipline referrals was 4.3 during baseline and 2.67 during the intervention phase. For Group 4, the average number of office discipline referrals was 2 during baseline and it was 1.5 during intervention. In

this study, a reduction in office discipline referrals represented a reduction in problematic behaviors. For most of the participants (n = 10), no further interventions were needed. For the remaining participants (n = 2), one required tertiary level supports and the other qualified for placement within special education.

Using office discipline referrals as the only way to measure behavior change was one of the limitations found with this study. Decreases in office discipline referrals are not correlated with decreases in problem behavior. Direct observation of behavior change may have revealed different results. Comparing participants in groups of three, instead of comparing them individually, limited this study because it may inaccurately depict the effects of the intervention for individuals. The authors (Hawken et al., 2007) suggested that future research should consider how the function of each participant's problem behaviors influence intervention effectiveness. The authors also called for future research on how check-in check-out improves student outcomes related to academic achievement, including direct measures of academic achievement (e.g., CBMs). Finally, future research should be conducted to determine how important parent involvement is to the check-in check-out intervention program.

Todd et al. (2008) conducted a study to determine how effective check-in checkout was at reducing disruptive student behaviors in a rural elementary school located in the Northwest United States. The four participants were all male and in a different grades that ranged from kindergarten to third grade. The demographics of the participants varied in regard to educational placement (i.e., general education, special education services) and ethnicity (i.e., Native American, Caucasian, African-American). In order to be a participant, an administrator had to nominate the student based on the individual's frequency of office discipline referrals. Teachers had to verify that the problem behaviors the student was exhibiting were repeatedly disrupting class instruction and the education of others. Parent consent and student assent were also required. A functional behavior assessment was completed on all four participants before the intervention began and indicated that adult attention was likely the function, or the reason, of the problem behavior for all four participants. Direct observations of problem behavior occurred three times a week at minimum. Observations were 20 min and a partial interval recording system was used to collect data every 10 s. Problem behavior consisted of not being in the desired area, talking without raising your hand, noncompliance, talking during teacher instruction, disrupting the learning environment, and engaging physical and/or verbal behavior that is negative. Office discipline referrals were issued if the problem behavior put others in danger, disrupted the instruction of other students, or if it broke a specific school rule. A multiple baseline design was used to determine how check-in check-out influenced problem behavior for each participant. The results of the study indicated that check-in check-out was successful, in that, the authors demonstrated that check-in checkout was functionally related to decreasing problem behaviors that are maintained by adult attention. More specifically, check-in check-out reduced the frequency and severity of the problem behaviors for all participants in the study (N = 4). Participants were also found to exhibit fewer types of problem behaviors. This study also provides evidence for the use of check-in check-out with students whose behaviors are functionally maintained by attention, specifically adult attention. The limitations found for this study included the small number of participants (N = 4) and the brief 10 week length of the study. Future research should examine the effects of check-in check-out on problem behavior that is

driven by escape. Future research should also look at how self-monitoring and the use of rewards may influence intervention effectiveness.

Campbell et al. (2013) extended the research of Todd et al. (2008) by evaluating how effective check-in check-out was at increasing academic engagement, in addition to decreasing disruptive student behaviors. The study was conducted in the Northwest United States at an elementary school where approximately 72% of students qualified for free/reduced lunch (N = 310). The 3 participants in the study were all males in general education and they all exhibited problem behavior that was considered at-risk for becoming increasingly more severe. Participants were required to have three to five office discipline referrals. Parent consent, teacher consent, and student assent were also required in order to participate. Direct observations of disruptive behavior and academic engagement occurred four times a week at minimum. Observations were 15 min and a partial interval recording system was used to collect data every 5 s. Disruptive behavior included talking without raising your hand and talking during teacher instruction. Academic engagement included complying with teacher requests, looking at the teacher and/or the learning materials, and the completion of teacher assigned tasks and activities. An ABAB reversal design was used to demonstrate how check-in check-out was functionally related to disruptive behavior and academic engagement. The results of the study revealed that check-in check-out was functionally related to decreasing disruptive behavior for all three participants. The results also indicated that check-in check-out was functionally related to increasing academic engagement for two of the three participants. One limitation of the study was the high amount of variability observed between individual participants and between intervention phases for the same participant. Future

research should control the variables that may be causing some of the variability (e.g., time of observations). The limited amount of data gathered during the second phase of intervention was another limitation of the study. In the future, researchers should examine the effects of check-in check-out over an extended period of time.

Miller, Dufrene, Sterling, Olmi, and Bachmayer (2015) examined how effective check-in check-out was at reducing problem behavior, increasing academic engagement, and if student behavior can continue to improve as the intervention supports fade away. This study was conducted in the Southeast United States with three students from two different schools. One school was in a rural setting and consisted of 221 students in grades kindergarten through eight, where 99% of the student population qualified for free/reduced lunch and 96% of the students were minorities. The second school was in a city setting and consisted of 183 students in grades kindergarten through six, where 85% of the student population qualified for free/reduced lunch and 63% of the students were minorities. Three African-American male elementary students were selected for participation in the study. In order to participate in the study, students had to meet specific requirements. The students had to be nominated by an administrator due to a high number of office referrals and a teacher had to confirm the problem behaviors. It should be noted that if the problem behaviors caused anyone physical harm, the student could not participate. Consent from the students' parents, teachers, and mentors were also required. The teachers verified the types of problem behaviors the participants exhibited during teacher interviews. The behaviors verified by the participants' teachers included, getting up from one's seat, talking during instruction, being off-task, and negative social interactions with peers. The desired behavior, academic engagement, was defined as the

participants exhibiting the following behaviors: looking toward teacher, following directions to work with another student, silent reading, completing writing assignments, and participating in class activities, for at least 7 s per activity. Direct observations of problem behavior and academic engagement took place every day for 20 min. Observations occurred during the class period where problem behaviors are most likely to occur according to teacher report. A partial interval recording system was used to collect data on each participant's behavior every 10 s. The authors (Miller et al., 2015) used an ABAB withdrawal design to determine how effective check-in check-out was at decreasing problem behaviors and increasing academic engagement. This research design requires multiple phases. The phases included were baseline, intervention, withdrawal, return to intervention, mystery motivator, and self-monitoring. The mystery motivator phase was used to evaluate the effects of fading intervention supports on student behaviors and occurred after the return to intervention phase. During the mystery motivator phase, if participants met their daily point goal, they were given an envelope that contained a piece of paper with an "m" or an "x." Once the participant collected three papers with "m" they could collect their reward.

The results of the study indicated that check-in check-out was functionally related to decreasing problem behavior and increasing academic engagement. When check-in check-out was implemented the first time, decreases in problem behavior and increases in academic engagement were observed for all participants when compared to baseline levels. During the withdrawal phase, increases in problem behaviors and decreases in academic engagement were observed for all participants. When check-in check-out was implemented the second time, problem behaviors decreased and academic engagement increased for all participants. During the mystery motivator phase, two of the participants exhibited slight increases in academic engagement and decreases in problem behaviors. However, one participant exhibited decreases in academic engagement and increases in problem behavior during the mystery motivator phase. Therefore, the results are mixed in regard to using a mystery motivator to fade check-in check-out. One limitation of this study is the use of participants from elementary schools only. Future research should examine the effects of check-in check-out on middle school and high school student populations. Although observations of student behavior occurred daily, they only last for 20 min and were conducted during one specific part of the school day. Future research should observe student behaviors through various parts of the school day to determine how check-in check-out influences behavior throughout the entire day and across different educational settings. The mystery motivator phase was not experimentally tested because it was an addition to the study's ABAB design. Future research should experimentally evaluate various fading procedures, such as the mystery motivator.

Purpose of Current Study

Previous research on check-in check-out has demonstrated that it is an effective intervention for students who need additional behavioral support. Check-in check-out improves student outcomes related to academic engagement and it decreases problem student behaviors, as evidenced by reductions in office discipline referrals (Campbell et al., 2013). This study added to previous research by examining the long-term effectiveness of check-in check-out on individual student outcomes for elementary students. The hypotheses are provided below.

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Hypotheses

Hypothesis 1. The first hypothesis investigated the relationship between the implementation of check-in check-out and student performance on state-wide standardized measures of academic achievement. Check-in check-out implementation was measured by annual Seahawk club membership status for years 2011 through 2014. Academic achievement was measured by each participant's Maryland State Assessment (MSA) scores for math and reading. Participants' MSA scores were described as successful, failure, or split decision based on the number of points scores increased or decreased from year to year. A success rating was given if scores increased between years. A failure rating was given if scores decreased between years. A split decision rating was given if scores between one set of years increased, but scores between another set of years decreased. Frequencies of these categorical ratings were compared using Goodness of Fit statistics to determine if a relationship existed between Seahawk club membership and improved MSA scores between the years of 2011 through 2014 for each participant. It was hypothesized that participation in the check-in check-out behavior intervention program, also referred to as the Seahawk club, would lead to higher scores on state-wide standardized measures of academic achievement than previous participant scores, as measured by the Maryland State Assessment for reading and math.

Hypothesis 2. The second hypothesis was addressed through multiple *t* tests. The *t* tests contrasted the frequency of minor office discipline referrals, major office discipline referrals, in-school suspensions, out-of-school suspensions, absences and tardies from when they first entered the club with the frequencies of the same variables during the final year of club (i.e., 2014). It was hypothesized that participation in the check-in

check-out intervention program, as measured by the total number of days in the club, would correlate negatively with all the previously described student outcomes (e.g., lower number of office discipline referrals, lower number of suspensions, lower number of tardies, etc.).

Hypothesis 2 was also addressed by analyzing a *t* test of King Discipline scores. King Discipline scores were computed by taking four disciplinary actions used in school (i.e., number of minor office discipline referrals, major office discipline referrals, inschool suspensions, and out-of-school suspensions) and multiplying each by the designated consequence level (1, 2, 3, 4, respectively), as outlined in the state of Maryland's code of student discipline (Maryland State Department of Education, 2014). King Discipline scores from each participant's first year in the study were compared to King Discipline scores from the last year of the study. It was hypothesized that participation in the check-in check-out intervention program, as measured by the total number of days in the club, would correlate negatively with King Discipline scores.

Hypothesis 3. The third hypothesis investigated the relationship between the implementation of check-in check-out, as measured by each participant's average percentage of daily points and student outcomes, as measured by the number of office discipline referrals, suspensions, absences, and tardies each participant earned during the final year of the study. The average percentage of daily points can be conceptualized as the percent each participant met behavioral objectives, or exhibited appropriate, on-task behaviors. Thus, it was hypothesized that participation in the check-in check-out program, as measured by the average percentage of daily points, would correlate negatively with all of the student outcomes previously described for the final year of the

study (e.g., lower number of office discipline referrals, lower number of suspensions, lower number of tardies, etc.).

Hypothesis 4. The fourth hypothesis examined the relationship between the implementation of check-in check-out, as measured by each participant's average percentage of daily points and academic achievement, as measured by each participant's reading and math scores on the Maryland State Assessment (MSA). The average percentage of daily points can be conceptualized as the percent each participant met their behavioral objective. Thus, it was hypothesized that success in the check-in check-out program, as measured by the overall average percentage of daily points received during intervention, would correlate positively with academic achievement, as measured by participant MSA reading and math scores.

Hypothesis 5. The fifth hypothesis examined the relationship between the longterm effects of check-in check-out success, as measured by the average percentage of daily points, and academic achievement, as measured by reading and math MSA scores, for all participants that received the intervention over all possible school years. It was hypothesized that participation in check-in check-out would lead to improved academic achievement or MSA reading and math scores. Therefore, a positive correlation between check-in check-out participation and academic achievement was predicted.

CHAPTER TWO

METHODOLOGY

Research Approval

Permission was obtained from the Institutional Review Board (IRB) at Middle Tennessee State University prior to data collection and analysis. All identifying participant information (e.g., name, date of birth, address, parent/guardian name, etc.) was either intentionally withheld by the school or it was modified to ensure all participants remained anonymous and unidentifiable. All participant names were replaced with a number, so individual participants could be tracked. See Table 1 for individual participant numbers by club year. See Appendix A for IRB approval letter.

In addition to IRB approval, the data used in this study was prepared by the school's data specialist and then approved by the school district's executive director of instructional data prior to being released for the use of this study.

Participants

The participants were a group of 25 students from a Title I elementary school in the state of Maryland. At this school, 62% of students were African-American, 26% were Hispanic/Latino, and 7% were Caucasian (Maryland State Department of Education, 2014). In regard to gender, 56% of the school's student population was male and 44% was female. Participants varied in age and grade level throughout the current study. The participant group was 88% African-American (n = 22), 4% Hispanic/Latino (n = 1), and 4% Caucasian (n = 1). Out of all group members, 12% received special education Table 1

Club Members by Year

Year	п	Club Members by Assigned Number
2014-2013	11	2, 4, 5, 6, 7, 8, 9, 12, 13, 14, 15
2013-2012	9	2, 3, 7, 9, 14, 15, 18, 19, 21
2012-2011	10	9, 10, 11, 16, 17, 20, 22, 23, 24, 25
2011-2010	5	1, 16, 22, 23, 24

services (n = 3) and 4% received supports related to English for Speakers of Other Languages (ESOL) services (n = 1). In regard to socioeconomic status, 96% of group members were considered to be of low socioeconomic status (n = 24), as measured by free/reduced lunch eligibility status. See Table 2 for participant demographic characteristics. Club members entered and exited the Seahawk club throughout the study. Some students were in the club for one year and others up to three years. See Table 1 for club membership information by year. Overall, the participant group adequately represented the overall school's demographics in regard to ethnicity, eligibility for special education, eligibility for ESOL services, and socio-economic status.

Parental consent was required and obtained for all participants via parent permission letter. See Appendix B for the specific parent permission form used. The Seahawk Club Parent Permission Letter explained why their child was nominated for club membership, the purpose of the Seahawk club and a brief overview of daily club activities and procedures. Parents and guardians were also given a Seahawk Club Parent Information Sheet and were asked to complete it and return it if they gave consent for club membership. See Appendix C for the specific parent information form used.

In addition to parental consent, student consent was required and was obtained via the Seahawk Club Student Contract. See Appendix D for the specific student contract form used. The Seahawk Club Student Contract explained club participation requirements including club expectations, daily club procedures, daily club responsibilities, and weekly club activities. After being presented with the student contract, participants completed a reward menu if they decided to join the club. See Appendix E for the specific reward menu form used. Upon completion of the reward

Table 2

Characteristic		n	%
Gender			
	Male	22	88
	Female	3	12
Race			
	Caucasian	1	4
	African-American	22	88
	Hispanic	1	4
	Multiracial	1	4
Socio-economic status			
	Low	24	96
	Middle	1	4
	High	0	0
SPED			
	Yes	3	12
	No	22	88
ESOL			
	Yes	1	4
	No	24	96

Participant Demographic Characteristics

Note. SPED = Receiving special education services; ESOL = Receiving supports for English for Speakers of Other Languages; Multiracial = Two or more ethnicities.

menu, participants reviewed the Seahawk Club Membership Guide. See Appendix F for specific membership guide used. Club procedures were explained, modeled, and practiced with check-in check-out adults and club members. The Seahawk Club Daily Point Sheet was reviewed with participants by check-in check-out adults and participants were given time to practice using the daily point sheet. See Appendix G for the specific daily point sheets used. The Seahawk Club Weekly Goal Tracking form was explained to all participants. See Appendix H for specific weekly goal tracking form used. The Weekly Goal Tracking form collects data daily on each participant's individual progress toward their specific goals. The participants fill in the goals and state what they are specifically working for (i.e., reward). It should be noted that original participant daily point sheets, weekly goal sheets, reward menus, and consent forms were not available for use during the study due to participant privacy. The information from the hard copies of the forms described above were compiled into a blinded spreadsheet by the school district to ensure all participants remained anonymous and that their privacy was adequately protected.

Participation in the Seahawk Club was voluntary and required an invitation for membership, as well as, parent/guardian consent. One was invited to become a member of the club based on teacher nominations and frequent office discipline referrals. The sponsors of the club, or nonstudent members, included all faculty and staff members of the school. Club members were assigned a check-in check-out adult, whom the student checks-in and checks-out with every school day.

The check-in check-out adults were chosen by the Seahawk club coordinator based on scheduling, availability, and willingness to volunteer. The Seahawk club
coordinator leads club meetings, helps problem solve with members, and provides all members with training before starting the club. Seahawk club meetings are held once every 6 weeks for staff and once every 6 weeks for students and staff. At staff only meetings, the club coordinator and all check-in check-out adults meet after school for about an hour to review student member progress and any other club related issues. At student and staff club meetings, club procedures and protocol are reviewed, and students that have met their goals, are acknowledged for their success in the club. The coordinator also helps with daily check-in and check-out procedures and is responsible for collecting all club data.

All general education teachers are involved with the club if a student in their class is a club member. If a teacher has a club member in their class, the teacher is responsible for rating the students' behavior using the daily point sheet form provided by the student. However, teachers are not responsible for remembering to fill out point sheets. It is the student's responsibility to obtain points from each teacher throughout the day, specifically at the end of each class/subject. Student behavior is compared to each participant's specific behavioral expectations, or desired behaviors.

Ratings, or points, are assigned by all teachers the student member has throughout each school day. Teachers rate student club member behavior daily based on observations of the student during the specific time that teacher is responsible for the student.

In addition to check-in check-out adults, general education teachers, and student members, parents are also involved with the club. Parent involvement is required because parents are responsible for reviewing and signing their child's daily point sheet. This daily point sheet gives parents information about their child's behavior throughout specific times during the school day. Daily point sheet also describes how well the student met behavioral goals and expectations for the specific day.

Materials

The materials needed to conduct this study included a complete description of the check-in check-out behavior intervention program (Crone, Hawken, & Horner, 2010), Seahawk club forms (see Appendices), and the archived student outcome data for all club participants over the four years of the study. The student outcome data included demographic information that included each participant's gender, grade, ethnicity, special educational status, English for Speakers of Other Languages (ESOL) status, and socio-economic status. Special education status indicated if the participant received special education services. ESOL status indicated if the student received ESOL services. Socio-economic status was measured by each participant's free and reduced lunch eligibility. If students were eligible for free and reduced lunch, they were described as being in the low socio-economic status group.

The student outcome data that was used to measure Seahawk club effectiveness included the total number of days each participant spent in the Seahawk club and the average percentage of daily points each student earned while in the club. Student outcome data used to measure academic achievement were also required and included each participant's scores on state-wide measures of academic achievement. More specifically, it included each student's Maryland State Assessment (MSA) scores for reading and math. The academic achievement scores came from the following school years: 2010-2011, 2011-2012, 2012-2013, and 2013-2014.

Outcome data used to measure student behavior related to school disciplinary actions and school attendance included King Discipline scores, the frequency of minor office discipline referrals, major office discipline referrals, in-school suspensions, out-ofschool suspensions, tardies, and absences for each of the four years included in the study. King Discipline scores were computed by taking four disciplinary actions used in school (i.e., number of minor office discipline referrals, major office discipline referrals, inschool suspensions, and out-of-school suspensions) and multiplying each by the designated consequence level (1, 2, 3, 4, respectively), as outlined in the state of Maryland's code of student discipline (Maryland State Department of Education, 2014). King Discipline scores and the frequencies of office discipline referrals, suspensions, absences, and tardies came from the following school years: 2010-2011, 2011-2012, 2012-2013, and 2013-2014.

Check-in check-out can be described as a research-based, Tier 2 behavioral intervention that requires each student participant to routinely check-in with their designated check-in check-out adult prior to the start of each school day and at the conclusion of each school day (Campbell et al., 2013; Crone et al., 2010). In the morning, the participants get their daily point sheets from their check-in check-out adult and review the behaviors expected with their check-in check-out adult. All teachers the student has throughout the school day assign the student points based on the student's expected behaviors. When participants check-out at the end of the day, the check-in

check-out adult and the student determine if the goals were achieved based on the number of points the student earned. The check-in check-out adults remind the students to take the daily point sheets home, have their parents/guardians sign them, and bring them back the next school day (see Appendix F for specific information about program procedures).

Outcome Measures

Outcome measures were utilized to examine Seahawk club effectiveness, as well as, the impact of the Seahawk club on a variety of participant outcomes. The outcome measures associated with club effectiveness included the average percentage of daily points and the total number of days in the club. The outcomes measures associated with academic achievement included annual participant scores on the Maryland State Assessment for reading and math. The outcome measures associated with participant behavior included King Discipline scores by year and the annual frequencies for minor office discipline referrals, major office discipline referrals, in-school suspensions, out-ofschool suspensions, tardies, and absences.

Measures of academic achievement. The Maryland State Assessment (MSA) was the evaluation instrument used to measure student academic achievement for the study. The MSA is a criterion-referenced assessment that uses the state of Maryland content standards to measure student ability in reading and mathematics (Baltimore City Public Schools, 2014). The state of Maryland requires all students in Grades 3 through 8 to take the assessment once every year. Students with disabilities and students with limited English proficiency are required to take the assessment, but may receive accommodations. The assessment takes place over the course of two days and students are tested for approximately 2 ½ hr a day.

The MSA is composed of four different test items: selected responses (SRs), brief constructed responses (BCRs), extended constructed responses (ECRs), and student produced responses (SPRs). SRs are the same format as multiple choice questions. For SR items, students earn 1 point for a correct answer and 0 points for an incorrect answer. BCRs and ECRs are the written response items for both reading and math. Both are scored by evaluators using a 0- to 3-point scale, where the minimum number of points the student can earn is 0 and the maximum is 3. SPR items are only for math and require the student to calculate a numeric answer. For SPR items, students earn 1 point for a correct answer and 0 points for an incorrect answer (Maryland State Department of Education, 2008).

The type of scores derived from the MSA are scaled scores. Each student receives a scaled score for reading and a scaled score for math. These scores range from 240 to 650 (Baltimore City Public Schools, 2014). Cut scores are then used to group the students into one of three levels of performance: (a) Basic; (b) Proficient; and (c) Advanced. The cut off scores for proficiency and advanced levels vary based on the individual's grade level and the specific subject area measured. See Table 3 for MSA score proficiency level groupings. A score that is within the basic range indicates that the student is not meeting grade level standards and more instruction is required for the student to meet grade level expectations. A score that falls within the proficient range indicates that the student is on grade level and is progressing at an expected rate. A score that falls within the advanced range indicates that the student is above grade level and is progressing at an exemplary

Table 3

Grade	Area	Basic	Proficient	Advanced
3				
	Reading	240-387	388-455	456-650
	Math	240-378	379-440	441-650
4				
	Reading	240-370	371-436	437-650
	Math	240-373	374-432	433-650
5				
	Reading	240-383	384-424	425-650
	Math	240-391	392-452	453-650

MSA Cut Scores by Proficiency Level

rate (Maryland State Department of Education, 2014). For the present study, MSA reading and MSA math scores were available for the following school years: 2010-2011, 2011-2012, 2012-2013, and 2013-2014. However, the scores available for each club member varied based on the individual's age. MSA score availability varied by participant age because the MSA is only administered to elementary students in the third, fourth, and fifth grades (Maryland State Department of Education, 2008). No MSA scores were available for club members who were in second grade or lower.

MSA reading and math scores were examined year to year and given ratings of success, failure, or split based on the number of points scores increased or decreased each year. A success rating was given if scores increased between years. A failure rating was given if scores decreased between years. A split decision rating was given if scores between one set of years increased, but scores between another set of years decreased.

Measures of club effectiveness. The effectiveness of check-in check-out was measured by using the average percentage of daily points and the total number of days each student was a member of the club. The average percentage of daily points was the total number of points the student earned while in the club, divided by the total number of days the student was in the club. The total number of club membership days was based on the number of daily point sheets the check-in check-out coordinator had for each student. Thus, two scores were reported for each participant regarding Seahawk club effectiveness: the average percentage of daily points and the total number of days each student was a club member. **Measures of behavior.** Outcome measures used to examine participant behaviors included King Discipline scores and the frequency of minor office discipline referrals, major office discipline referrals, in-school suspensions, out-of-school suspensions, tardies, and absences for each of the four years included in the study. For the four school years of the study, King Discipline scores were calculated annually for all participants. It is important to note that King Discipline. King Discipline scores were computed by taking four disciplinary actions used in school (i.e., number of minor office discipline referrals, major office discipline referrals, in-school suspensions, and out-of-school suspensions) and multiplying each by the designated consequence level, as outlined in the state of Maryland's code of student discipline (Maryland State Department of Education, 2014).

Minor office discipline referrals had a consequence level of 1 and served as a possible consequence for frequent tardiness, verbal statements that are disrespectful, cursing, disrupting class intentionally by engaging in minor behaviors (e.g., calling out, throwing items, horseplay), making threats, academic dishonesty, and using electronic devices without permission (Maryland State Department of Education, 2014). A consequence level of 2 was assigned to major office discipline referrals and served as a possible consequence for persistent tardiness, frequent insubordination, frequent disrespect, disrupting class intentionally by engaging in major behaviors (e.g., throwing harmful objects, disrupting a fire drill), academic dishonesty, taking items from another person without permission, and physical aggression (e.g., pushing, shoving), and making threats. A student may also receive a major office discipline referral if a student has

received three or more minor office discipline referrals. In-school suspension had a consequence level of 3 and served as a possible consequence for persistently disrupting class, theft, intentional destruction of property, engaging in extortion, making threats toward others, trespassing. Out-of-school suspensions had a discipline severity level of 4 and served as a possible consequence for sexual harassment, persistent threats toward others, engaging extortion, bomb threats, fights, arson, possessing/using/distributing alcohol, drugs, or any other illegal substances, and possession of fire arms and other weapons. After all four of the disciplinary action frequencies were multiplied by their designated consequence levels, they were added together to create the King discipline score for the given year. King Discipline scores provided a discipline profile for each participant by school year. An ideal King Discipline score is as close to zero as possible. It should be noted that participants 16 through 25 (n = 10) did not have a King Discipline score for the 2013-2014 school year because the students were in the sixth grade and moved to middle school.

Design

The present study used archival data collected from the following school years: 2010-2011, 2011-2012, 2012-2013, and 2013-2014. The independent variables consisted of gender, grade level, ethnicity, special education services, ESOL services, and socioeconomic status. The dependent variables consisted of the annual frequency of tardiness, absences, minor office discipline referrals, major office discipline referrals, in-school suspensions, out-of-school suspensions, achievement scores on the Maryland State Assessment for reading, achievement scores on the Maryland State Assessment for mathematics, the number of days in the Seahawk club, the average percentage of daily points, and King Discipline scores.

Procedure

Students were invited to join the club based on teacher nominations. Teachers referred students that they felt would benefit from extra behavioral supports. Parental permission and consent was required for participation in the club. Students voluntarily joined the club if they had been referred by a teacher, if their parent/guardian gave consent, and if they wanted to be a part of the club.

A day for a student in the Seahawk club begins in the morning before the start of school. The student checks-in with their designated check-in check-out adult upon arriving to school. The student turns in the previous school days daily point sheet that was signed by their parent or guardian. The check-in check-out adult checks for a signature on the previous days point sheet and then gives the student a new daily point sheet for the current school day. The daily point sheet contains the student's behavioral expectations and the student's daily behavior goal(s). Together, the student and check-in check-out adult review the behavioral expectations. Then, goals for the day are set and are written on the daily point sheet. After check-in, the student attends class as they typically would. However, the student has to get their daily point sheet filled out by each teacher they have throughout the day. Teachers award the student points, using a Likert-type scale, for how well the student met their behavioral expectations. Students know that they should get teachers to fill out point sheets at the end of the class period, not at the end of the school day. At the very end of the day, the student checks-out with their check-

in check-out adult. They review how the day went and decide together if the daily goal(s) were achieved. Lastly, the student takes their daily point sheet home to get signed by their parent/guardian.

In the Seahawk club, a commitment to active participation is necessary for all teachers, student members, and parents involved in the club. All teachers can serve as check-in/check-out adults. All teachers that have a Seahawk Club member in their class were required to rate the students' behavior daily, based on the described behavioral expectations for that individual student. The students were responsible for finding their check-in/check-out coordinators prior to the start of each school day and at the conclusion of each school day. The students were responsible for getting teachers to sign and rate their behaviors using the daily point sheets. The students were also responsible for getting their parent/guardians to sign their daily point sheets and for bringing them back to school the next day. Parental participation was necessary and required. First, parents gave permission for their child to join the club. Then, parents were required to complete and return the parent information sheet (see Appendix C for specific form used) Next, students read and signed a student contract form (see Appendix D for student contract information). Then, students completed a reward menu (see Appendix E for reward menu information) and returned both forms to their check-in check-out adult. All students and parents were given a club membership guide and a daily point sheet that was reviewed with the check-in check-out adult (see Appendix F for club membership guide). Parents were expected to review point sheets after every school day with their child. Next, parents signed their child's daily point sheets to verify that they reviewed their

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child's behavior for that day (see Appendix G for daily point sheet). The daily point sheets helped foster communication between home and school.

The weekly goal tracking sheet was completed daily by students, but was only sent home to parents once per week on Friday (see Appendix H for weekly goal tracking sheet). The weekly goal tracking sheet provided parents with information about their child's progress toward their behavior goals.

At the end of the school year, each club member's performance is reviewed by the check-in check-out adults, teachers, and parents. Students that have met behavioral expectations by the end of the year are exited from the club. Students remain in the club the following school year if they did not meet their behavioral expectations. Although the overall goal is for students to exit the club, it is not a bad thing for students to remain in the club because it may be the best, or the only known way, to help the student behave appropriately.

CHAPTER THREE

RESULTS

Descriptive Data

The data consisted of participant demographic information and included gender, grade, age, socio-economic status, special education eligibility, and English for Speakers of Other Languages (ESOL) eligibility. Socio-economic status was measured by free and reduced lunch eligibility. Participants who qualified for free and/or reduced lunch were considered to be of low socio-economic status. The data also included Seahawk club membership status by year, the overall average percentage of daily points, King Discipline scores by year and Maryland State Assessment scores (MSA), for both reading and math. The data also included the frequency of minor office discipline referrals by year, the frequency of major office discipline referrals by year, the frequency of in-school suspensions by year, the frequency of out-of-school suspensions by year, the frequency of tardies by year, and the frequency of absences by year.

Hypotheses

Hypothesis 1. The first hypothesis predicted there would be a relationship between the implementation of check-in check-out and academic achievement. Check-in check-out implementation was measured by annual Seahawk club membership status for years 2011 through 2014. Academic achievement was measured by each participant's Maryland State Assessment (MSA) scores for math and reading. Each participant's MSA scores were described as successful, failure, or split decision based on the number of

points scores increased or decreased from year to year. A success rating was given if scores increased between years. A failure rating was given if scores decreased between years. A split decision rating was given if scores between one set of years increased, but scores between another set of years decreased. Frequencies of these categorical ratings were compared using Goodness of Fit statistics to determine if a relationship existed between Seahawk club membership and improved MSA scores between the years of 2011 through 2014 for each participant. There was a significant relationship between Math MSA scores and Seahawk club membership status X^2 (n = 19, df = 2) = 10.63, p < 1000.05. See Table 4 for Goodness of Fit statistics using success, failure, split ratings for Math MSA scores. There was not a significant relationship between Reading MSA scores and Seahawk club membership status X^2 (n = 18, df = 2) = 3.03 p = .22. See Table 5 for Goodness of Fit statistics using success, failure, split ratings for Reading MSA scores. Since Math MSA scores and Seahawk club membership were found to have a significant positive relationship while Reading MSA scores and Seahawk club membership did not, I concluded that Hypothesis 1 was partially supported.

Hypothesis 2. The second hypothesis was addressed through multiple *t* tests. The *t* tests contrasted the frequency of minor office discipline referrals, major office discipline referrals, in-school suspensions, out-of-school suspensions, absences and tardies from when they first entered the club with the frequencies of the same variables during the

Table 4

Goodness of Fit Using Success, Failure, Split Ratings for Math MSA Scores

Rating	Observed Frequency	Expected Frequency	Expected Proportion
Success	13	6.27	0.33
Failure	3	6.27	0.33
Split	3	6.27	0.33

Table 5

Goodness of Fit Using Success, Failure, Split Ratings for Reading MSA Scores

Rating	Observed Frequency	Expected Frequency	Expected Proportion
Success	9	5.94	0.33
Failure	6	5.94	0.33
Split	3	5.94	0.33

final year of club (i.e., 2014). There was one correlation found to be statistically significant. A significant negative correlation was found between the number of days each participant spent in the Seahawk club and the number of tardies each participant received during 2013-2014, r = -.33, p < .05, N = 25. This indicated that as the number of days each participant spent in the Seahawk club increased, the number of tardies decreased. See Table 6 for the descriptive statistics.

Hypothesis 2 was also addressed by analyzing a *t* test of King Discipline scores. King Discipline scores from each participant's first year in the study were compared to King Discipline scores from the last year of the study, n = 19, M = 17.63, SD = 31.65, SEM = 7.26. Only 19 participant scores were used for this *t* test. More specifically, King discipline scores were analyzed from the year the participant entered the club until the end of the study. These results test were statistically significant and indicated that King discipline scores improved for most participants, t (18) = -2.43, p = .03. Thus, negative numbers in this instance represent improved student behavior. Since some of the results were found to be significant, I concluded that Hypothesis 2 was partially supported.

Hypothesis 3. The third hypothesis was assessed by determining if a relationship existed between each participant's average percentage of daily points and outcome measures for the final year of the study, 2013-2014: King Discipline scores, frequency of minor office discipline referrals (minor ODRs), frequency of major office discipline referrals (major ODRs), frequency of in-school suspension (ISS), frequency of out-ofschool suspension (OSS), frequency of absences, and frequency of tardies. King

Table 6

11	aj	r	р
25	24	-0.07	0.337
25	24	-0.035	0.337
25	24	-0.33	0.337
25	24	0.06	0.337
25	24	0.04	0.337
25	24	0.30	0.337
25	24	-0.19	0.337
	25 25 25 25 25 25 25 25	25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Descriptive Statistics for Outcome Variables During Final Year of Club

Discipline scores for 2014 and the frequency of minor ODRs, major ODRs, ISS, OSS, absences, and tardies were analyzed using Pearson Product Moment correlations and compared with each participant's average percentage of daily points to determine if any statistically significant correlations existed. According to the results, no significant correlations were found. See Table 7 for all Pearson Product Moment correlations between the average parentage of daily points and participant outcome variables. As no significant correlations were found, I concluded that Hypothesis 3 was not supported.

Hypothesis 4. I addressed the fourth hypothesis by determining if a relationship existed between the average percentage of daily points and academic achievement for participants in the club during the final year of the study (n = 11). I measured academic achievement by MSA reading and math scores for 2013-2014 during the final year of the study. MSA reading and math scores for 2013-2014 were analyzed using Pearson Product Moment correlations and correlated with the average percentage of daily points to determine if a relationship existed. For participants in the club during the final year of the study (n = 11), a significant positive correlation was found between MSA reading scores and each participant's average percentage of daily points, r = .62, p = < .05. This indicated that as each participant's average percentage of daily points increased, MSA reading scores also increased. For participants in the club during the final year of the study (n = 11), a significant positive correlation was found between MSA math scores and each participant's average percentage of daily points, r = .67, p < .05. This indicated that as each participant's average percentage of daily points increased, MSA math scores also increased. Since significant correlations were found, I concluded that Hypothesis 4 was supported.

Table 7

Pearson Product Moment Correlations Comparing % of Daily Points with

Variables	n	df	r	р
Discipline Score	25	24	-0.21	0.337
Absences	25	24	0.18	0.337
Tardies	25	24	-0.06	0.337
Minor ODR	25	24	0.09	0.337
Major ODR	25	24	-0.04	0.337
ISS	25	24	0.20	0.337
OSS	25	24	-0.32	0.337

Participant Outcome Data

Hypothesis 5. I tested the fifth hypothesis to determine if a relationship existed between the average percentage of daily points and academic achievement scores for all participants at any time throughout the study (n = 19). It should be noted that only 19 of the 25 total participants in the study were examined because 6 of the participants did not have MSA reading or math scores due to their young age. More specifically, the Maryland State Assessment is given to students every year starting in third grade. I measured academic achievement by using MSA reading and math scores for 2013-2014, the last year of the study. MSA reading and math scores for 2013-2014 were analyzed using Pearson Product Moment correlations and compared with the participants average percentage of daily points to determine if a relationship existed. No significant correlation was found between MSA math scores and the average percentage of daily points, r = .16, (p = n.s). No significant correlation was found between MSA reading scores and the average percentage of daily points, r = .30, (p = n.s). As no significant correlations were found, I concluded that Hypothesis 5 was not supported.

CHAPTER FOUR

DISCUSSION

The reason for the present study was to investigate whether there would be a relationship between the implementation of check-in check-out, academic achievement, and improved behavior in an existing school behavior intervention program. Overall, the results partially confirmed my hypotheses.

Hypotheses

Hypothesis 1. I predicted that there would be a positive relationship between the implementation of check-in check-out and academic achievement, as measured by participant Maryland State Assessment (MSA) scores for math and reading. I found a significant positive relationship between check-in check-out, or Seahawk club membership, and MSA math scores. Of the 19 participants, 13 received a success rating for MSA math, indicating that MSA math scores increased over the 2010-2011, 2011-2012, 2012-2013, and 2013-2014 school years. Failure ratings were given to 3 of the participants and indicated that MSA math scores decreased, or became worse, over time. The remaining 3 participants received split ratings, indicating no significant change in MSA math scores over the years of the study.

I did not find a similar significant relationship between MSA Reading scores and Seahawk club membership. Of the 18 participants, 9 received a success rating, 6 received a failure rating, and 3 received a split rating for MSA reading scores. The results partially support the hypothesis and this study. Similar to Hawken et al. (2007) the present data call for more research regarding the use of check-in check-out to improve academic student outcomes. I have not found any research regarding check-in check-out and academic achievement student outcomes. Future research should address the nature of reading instruction for elementary age students and see how reading instruction may influence reading achievement scores.

Hypothesis 2. The second hypothesis was addressed through multiple *t* tests. The *t* tests contrasted the frequency of minor ODRs, major ODRs, ISS, OSS, absences and tardies from when they first entered the club with the frequencies of the same variables during the final year of club (i.e., 2014). It was hypothesized that the total number of days each participant spent in the check-in check-out behavior intervention program would be negatively correlated with a variety of student outcomes including: King Discipline scores, minor office discipline referrals, major office discipline referrals, in-school suspensions, out-of-school suspensions, absences, and tardies. This hypothesis examined what the number of days spent in check-in check-out correlated with over time.

I found a significant negative correlation between the number of days spent in check-in check-out and the number of tardies each participant earned during the 2013-2014 school year. This may indicate that over the 3-year duration of the study, check-in check-out correlated with decreasing the frequency of tardies for club members. One potential reason for these findings is likely due to the daily check-in check-out procedures. The check-in check-out intervention requires all students to check-in with a designated check-in check-out adult every morning before the start of school. Since check-in procedures are completed before school starts, students are less likely to be late, or tardy, for school if they are in the club. Students in the Seahawk club were expected to be on time for daily check-ins and check-outs. Overall, the club procedures emphasized punctuality.

I also found statistically significant results regarding the multiple *t* tests analyzed for King Discipline scores. The results indicated that King Discipline scores improved for participants over time. Similar to the suggestions of Campbell et al. (2013), the results of the present study emphasize the need for future research to collect data over longer periods of time (e.g., over the entire school year, multiple school years).

Hypothesis 3. I hypothesized that participation in check-in check-out, as measured by the average percentage of daily points received during intervention, would be negatively correlated with a variety of student outcomes including, King Discipline scores, minor office discipline referrals, major office discipline referrals, in-school suspensions, out-of-school suspensions, absences, and tardies. According to the results, no significant correlations were found. The results do not support previous research in that a significant decrease in office discipline referrals were not found (Hawken et al., 2007). Hawken et al. (2007) found that check-in check-out was related to fewer office discipline referrals for most of the students that received the intervention. Of the 12 participants in the study, 9 had decreases in office discipline referrals. The participants were placed into four groups of three and the average number of office discipline referral for each group was calculated during the pre-intervention phase and the intervention phases. One potential reason as to why the current study did not find similar results to Hawken et al. (2007) could be due to how the data were analyzed. The current study looked at office discipline referrals for each participant, not in groups of participants like the other study (Hawken et al., 2007). In addition, the current study broke down office discipline referrals into two separate categories, minor office discipline referrals and major discipline referrals. Breaking down the office discipline referrals into two separate categories may have led to nonsignificant findings because of the limited number of data points.

Hypothesis 4. I hypothesized that academic achievement, as measured by MSA math and reading scores, would be positively correlated with check-in check-out participation, as measured by the average percentage of daily points received during intervention. The results indicated that a direct positive correlation was found between success in the program and academic achievement. More specifically, as the average percentage of daily points increased, MSA reading and math scores also increased. The results were similar to Hawken et al. (2007), in that increases related to academic outcomes were found to be related to check-in check-out. One reason as to why check-in check-out may improve student outcomes is because if students are not exhibiting problem behaviors, they are more likely to be engaged in activities that promote learning. The results support the existing literature base on check-in check-out and academic engagement because the results extended the literature base by providing evidence that check-in check-out also improves student outcomes related to academic achievement (Hawken et al., 2007).

Hypothesis 5. I hypothesized that academic achievement, as measured by MSA math and reading scores, would be positively correlated with the long term effects of

check-in check-out success, as measured by the average percentage of daily points over the course of the entire study. The results indicated no significant correlations. A possible explanation as to why no significant correlations were found could be related to the study's limited sample size (n = 19). The present study also used a different measurement metric, MSA scores, and it could be one potential reason as to why I arrived at different conclusions from Hawken et al. (2007) who looked at academic engagement, not academic achievement.

Conclusions

Virtually all check-in check-out researchers used direct observation single-subject designs to evaluate effectiveness. The present study used a different approach, group analysis, to determine if the check-in check-out behavior intervention program was effective at improving student outcomes. By using different methods to measure similar constructs, I was able to find partial support for the check-in check-out program's effectiveness. I am pleased with the positive successes that I discovered. Of course I would have preferred to find uniformly favorable results. The school staff appeared to be strongly supportive of the check-in check-out intervention program. Their support was evident informally when I talked with them about the Seahawk club's implementation. The school staff members seemed proud that the club has been implemented for more than four years and continues to be used two years after the study ended.

Weaknesses

A specific weakness of the present study was the narrow demographic characteristics of the participant group. A majority of the participants were of low socio-

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economic status African American males. All of the participants lived in the state of Maryland. Thus, it is not possible to generalize beyond the study group. Another weakness was the data collected. Because of concerns about confidentiality, I did not have access to individual point sheets. Thus, I was not able to identify which student engaged in particular problem behaviors. Finally, my data analyses could be criticized because I conducted multiple analyses and did not correct for making that many tests.

Future Research

It would be helpful if future researchers had access to actual check-in check-out data. Also future research should examine the effectiveness of check-in check-out with a more diverse participant group. The evidence base lacks research on check-in check-out with middle and high school age students. Additionally, future research should examine the effectiveness of check-in check-out at the district level. This could be done by comparing check-in check-out programs implemented at other schools in the same school district. In regard to examining check-in check-out and academic achievement, future research should use national measures of academic achievement data, like the Partnership for Assessment of Readiness for College and Careers (PARCC), so academic performance of participants can be compared between different states.

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APPENDICES
APPENDIX A

Institutional Review Board Approval

10/16/2014

Investigator(s): Alexandra King, James Rust

Department: Psychology

Protocol Title: Evaluation of the Effectiveness of a "Check-in Check-out" Behavioral Intervention Program in a Title 1 Elementary School

Protocol Number: #14-344

Dear Investigator(s),

Your study has been designated to be exempt. The exemption is pursuant to 45 CFR 46.101(b)(4) Collection or Study of Existing Data.

We will contact you annually on the status of your project. If it is completed, we will close it out of our system. You do not need to complete a progress report and you will not need to complete a final report. It is important to note that your study is approved for the life of the project and does not have an expiration date.

The following changes must be reported to the Office of Compliance before they are initiated:

- Adding new subject population
- Adding a new investigator
- Adding new procedures (e.g., new survey; new questions to your survey)
- A change in funding source
- Any change that makes the study no longer eligible for exemption.

The following changes do not need to be reported to the Office of Compliance:

- Editorial or administrative revisions to the consent or other study documents
- Increasing or decreasing the number of subjects from your proposed population

If you encounter any serious unanticipated problems to participants, or if you have any questions as you conduct your research, please do not hesitate to contact us.

Sincerely,

Lauren K. Qualls, Graduate Assistant Office of Compliance 615-494-8918

APPENDIX B

The Seahawk Club Parent Permission Letter

The Seahawk Club



Dear Parents,

An important mission at our elementary school is to limit any barriers that may hinder the success of our students. In addition, we have various behavior programs to assist students throughout the school year. After careful consideration, it was determined that your child would benefit from one of these programs, *The Seahawk Club*.

The Seahawk Club was created to provide students with a routine where they would check-in and check-out each day with an adult. In *The Seahawk Club*, students are given a daily point sheets to monitor their behavior throughout the school day. *The Seahawk Club* goal is to provide additional support designed to reduce the number of referrals, thus, increasing your child's time in the classroom.

Please sign below if you give permission for your child to take part in this club. If you have any additional questions, please give us a call at any time. Thank you for your support and we look forward to working together to ensure your child's success!

Principal

Assistant Principal

School Psychologist

School Counselor

I give permission for my child, _____, to participate

in *The Seahawk Club* activities for the current school year.

Parent Signature Date	Parent Signature:		Date:	
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APPENDIX C

The Seahawk Club Parent Information Sheet

Seahawk Club Parent Information Sheet

Child Name: _____ Parent: _____

	What is your child's personal strength?	What are your concern(s)?
A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER	Do you have any suggestions while	Are there any medical concerns/needs?
ANY ANY ANY ANY ANY ANY ANY	working with your child?	
SAN CARL CARL CARL CARL CARL		
V. and and and		
	Communication	Notes

Phone Number(s):

Email:

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APPENDIX D

The Seahawk Club Student Contract

The Seahawk Club Student Contract



I agree and commit to being a member of The Seahawks Club during the current school year. As a member, I will follow the expectations of the club, including:

- I will follow the **4 B's:** Be Respectful, Be Responsible, Be Ready, and Be Safe.
- Each **morning** I will **check-in with my check-in adult** and get my daily point sheet and folder.
- I am responsible for asking my teacher to fill in the points on my **point sheet** after each subject—not at the end of the day!
- During dismissal, I will ask teacher permission to meet with my check-out adult with my point sheet folder and all of my belongings for dismissal to check-out. I will the secretary or another adult to please help me copy my point sheet. I will give the copy to my check-out adult to keep and put the original point sheet in my backpack to take home.
- I will ask an adult at home to **sign my point sheet** every night and **bring it back** to school the next morning, where I will **turn it in during check-in**.
- I will always try my best! I know that I am talented, smart, and capable of success, and I will climb to reach my goals and dreams every day. I know that I am capable of success, no exceptions!

My personal goal:		
Student Signature:		Date:
School Counselor	School Psychologist	My Teacher

APPENDIX E

The Seahawk Club Reward Menu

REWARDS I would like to work for!

Name: _____

Circle) the number if you would like to work for it.

- 1. A special letter home from the principal
- 2. A phone call home from the principal
- 3. My favorite candy: _____
- 4. 15 minutes of free time to work on whatever you'd like in the classroom
- 5. Wear crazy socks to school for the day
- 6. Free homework pass
- 7. My favorite snack (chips, pretzels, Doritos):
- 8. Lunch with an adult and a friend of my choice. Some adults I would like to eat lunch with are: ______

9. My favorite drink (soda, Gatorade): _____

10. 15 minutes of free time in the gym with a friend

- 11. 15 minutes of free time on the counselor's iPad
- 12. 15 minutes of listening to my choice of music with a friend
- 13. Read to younger kids for 15 minutes
- 14. Be a helper in another classroom. Some classrooms I would most like to help in are: _____
- 15. Play a board game with a friend in the counselor's office for 15 minutes
- 16. \$15 Seahawk Dollars
- 17. Be a special helper in the office for 15 minutes
- 18. Be a special helper in the media center for 15 minutes
- 19. Get to say the Kids at Hope pledge on the announcements and be recognized by the principal on the announcements
- 20. Other ideas: _____

APPENDIX F

The Seahawk Club Membership Guide

Seahawk Club Membership Guide: For Student Members, CICO Adults, and Teachers

Check-In

Students will go to their check-in adult in the morning:

- During daily check-in, the following will take place:
 - Welcome the student, have a "pump-up" positive conversation to get them ready for their day, etc.
 - Hand them their binders and remind them to ask their teacher to complete them at the end of the day
 - Collect signed daily point sheet and put in school counselor's mailbox

Check-Out

Students will go to their check-out adult in the afternoon:

- During daily check-out, the following will take place:
 - Add up **Daily Points** and circle if goal was met or not. If goal was met, students earn a sticker toward their reward and put a sticker on their Goal Tracking Sheet in the pocket of their binder.
 - After they meet their goal for 10 days, they earn their reward (e.g., computer time, basketball time, etc.). Check-out adult should let school counselor know when reward has been earned, so it can be arranged.
 - Circle whether or not the point sheet is complete with no missing points
 - Point sheets will be sent home daily.
 - A conversation occurs about why points were lost and what could be done differently next time. Give praise for times of day when 2's were earned.
 - o Complete the Daily Point Sheet, which will summarize for parents:
 - The number of points the student earned that day
 - If the student met their daily goal

Each binder will contain:

- Daily Point Sheets
- Weekly Goal Tracking Sheet (stickers go on this sheet)
- Reward Menu (students choose reward from this list)

Reminders for CICO adults:

- Leave binders in your mailbox after check-out so another adult can cover if you're out of the building that day.
- Let school counselor know when reward has been earned, so it can be arranged.
- Print point sheets for the week and put in binders on Monday (probably easiest to print several weeks at a time and keep in folder in your room to pull from each Monday).
 - Take out last week's point sheets on Friday afternoon/Monday morning and give to designated secretary to be entered into SWIS.

Teacher FAQs

- It is important that the point sheets are completely **filled out each day**, throughout the day, and it is the student's responsibility to ask the teacher to complete the sheet. This may look different depending on the student's age (e.g., 2nd grader vs. 5th grader level of responsibility).
- It is best to fill out points after each time period rather than at the end of the day.
- If a student is "set-off" by losing points, remind them that it could cause them to lose additional points and that they can still reach their daily goal when they lose points. Each time period is a fresh start.
 - Also, try referring to the box on the top right of the points sheet: "2 points = 0 or 1 reminder needed; 1 point = 2 reminders needed; 0 points = 3 or more reminders needed"
 - Let them know that you had to remind them X times which = X points. You could also try counting aloud like 1-2-3 Magic! ("That's 1. I asked you to____. If it happens again, you'll begin losing points.").
 - If it is continuously a problem, let their CICO adult know so they can further address it with the student.

APPENDIX G

The Seahawk Club Daily Point Sheet

NAME:_____

DATE:_____

	THE SEAHAWK CLUB										
Times/	Goal 1:			Goal 2:		Goal 3:		B:	Comments		
Subject											
Cultural Arts	0	1	2	0	1	2	0	1	2		
Writing	0	1	2	0	1	2	0	1	2		
Lunch & Recess	0	1	2	0	1	2	0	1	2		
Math	0	1	2	0	1	2	0	1	2		
Science Social Studies	0	1	2	0	1	2	0	1	2		
Language Arts	0	1	2	0	1	2	0	1	2		

RATING SCALE:

2= Great, exhibits desired behavior most of time

1= Almost there, exhibits desired behavior some of time

0= Try again, rarely exhibits or does not exhibit desired behavior

Today I earned _____/36 points. I need 29 points to reach my daily 80% goal.

Goal Met? Yes No

Parent Signature: ______

Parent Comments: ______

APPENDIX H

The Seahawk Club Weekly Goal Tracking Form

Date:_____

Name:_____

_____'s Seahawk Club Goal Tracking Form

1	2	3	4	5	6	7	8	9	10	I'm Working For:	Date I Reached My Goal
									I DID ITIII		
									٢		
									I DID ITIII		
									٢		
									I DID ITIII		
									٢		
									I DID ITIII		
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