Examining the Effectiveness of an Intervention Package That Combines Behavior Contract and Token Economy in Decreasing Out-Of-Seat Behaviors in Students with Emotional and Behavioral Disorders in Saudi Arabia

Manal Alsheef

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EXAMINING THE EFFECTIVENESS OF AN INTERVENTION PACKAGE THAT COMBINES BEHAVIOR CONTRACT AND TOKEN ECONOMY IN DECREASING OUT-OF-SEAT BEHAVIORS IN STUDENTS WITH EMOTIONAL AND BEHAVIORAL DISORDERS IN SAUDI ARABIA

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By

Manal Alsheef

August 2021
EXAMINING THE EFFECTIVENESS OF AN INTERVENTION PACKAGE THAT COMBINES BEHAVIOR CONTRACT AND TOKEN ECONOMY IN DECREASING OUT-OF-SEAT BEHAVIORS IN STUDENTS WITH EMOTIONAL AND BEHAVIORAL DISORDERS IN SAUDI ARABIA

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ABSTRACT

EXAMINING THE EFFECTIVENESS OF AN INTERVENTION PACKAGE THAT COMBINES BEHAVIOR CONTRACT AND TOKEN ECONOMY IN DECREASING OUT-OF-SEAT BEHAVIORS IN STUDENTS WITH EMOTIONAL

By
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August 2021

Dissertation supervised by Dr. Ann Huang

Students with emotional and behavioral disorders (EBD) often exhibit disruptive behaviors in classroom, including out-of-seat behaviors, which have been found to negatively affect their overall academic achievement and social interactions and relationships with parents, typically developing peers and teachers, and increase the likelihood of being suspended or dropping out of school. The purpose of this study was to examine the effectiveness of an intervention package that included behavior contract and token economy on out-of-seat behaviors in three elementary school students with EBD (aged 7 and 8) in Saudi Arabia, where the effects of this intervention package has not been studied previously. A multiple baseline across participants research design was used to collect data in this study. Results showed that the intervention package was effective in decreasing out-of-seat behaviors in all three participants. The study was limited by the small number of participants and involved only children of similar
socioeconomic status in a single geographic region of Saudi Arabia attending the same school.

More future studies should be conducted to examine the effects of such an intervention package on managing distractive classroom behavior involving a larger number of participants with more diverse backgrounds across various regions of Saudi Arabia in the public-school setting.

*Keywords*: emotional and behavioral disorders, token economy, behavior contract, Saudi Arabia, elementary school students
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Chapter One

Introduction

Education today is much more than just teaching students facts from a textbook; it has become a series of practices and interventions that teachers compile in class to form teaching methods (Duchaine, 2011). Incorporating strategies into instruction, especially when working with students with emotional and behavioral disorders (EBD), might improve teaching and learning in the classroom (Cullinan & Sabornie, 2004). Determining appropriate interventions should be a serious consideration when teaching students with EBD (Alhossein, 2016; George, 2010). Students with EBD often demonstrate a variety of inappropriate behaviors including disturbance, noncompliance, devastation, and aggression (Cullinan & Sabornie, 2004). Teachers of students with EBD reported that some students with EBD experience low grades, rejection from peers, and suspension from school because of their disruptive behaviors (McKenna et al., 2017; Wilkinson, 2003). They also face difficulties in communication and interaction with others (Evans et al., 2004; Kauffman & Landrum, 2009). Teachers always look for simple, useful, effective interventions to use with students exhibiting disruptive behaviors (Sugai & Horner, 2002). According to Sugai and Horner (2002), 20% of children reveal behavior problems in schools, which challenge teachers to use more intense and powerful interventions to manage teaching in the classroom. However, teachers have difficulties finding simple, effective and easy interventions to implement for students with EBD (Scott et al., 2001).

Interventions are needed to address challenging behaviors and help students with EBD improve their academic performance (Dunn et al., 2017). During the past decade, researchers have emphasized the importance of using evidence-based practices (EBP) to teach students with disabilities (Chatterjee & Biswas, 2011; Thoma et al., 2011). One barrier to do so might be
teachers’ lack of knowledge on students with EBD and how to apply interventions. Due to this reason and others, there is a lack of EBP in Saudi Arabia (Alhossein, 2016). Behavior specialists have focused on challenging behaviors of students with EBD by correlating behaviors associated to low academic performance and achievement in school (Knowles et al., 2015). Several interventions were found to help those students, such as using direct motivation, “behaviorally based emotional coping programs targeting de-escalation” (Knowles et al., 2015, p. 137), building social skills, using indirect motivational strategies, or positive reinforcement (Knowles et al., 2015).

In the quest to improve behavioral performance of children with EBD, B. F. Skinner (1953) used positive reinforcement to increase desired behaviors and to decrease undesired behaviors; Skinner invented the term “operant” to refer to “active behavior that operates upon the environment to generate consequences” (p. 201). Skinner brought about the theory of operant conditioning. This implies developing association between several consequences and behaviors to attain the preferred outcomes (Zirpoli, 2005). Students must be stimulated in order to facilitate positive behavior, and this can be done through engaging the students in friendly activities either practically or through fun mental activities (Zirpoli, 2005).

Significance of the Study

According to Dunn et al. (2017), there are about 370,000 children with EBD who receive special education services in the United States. In Saudi Arabia, approximately 12% of school aged students have EBD (Alhossein, 2016; Forness et al., 2012). Because of this high percentage, more research is necessary in order to address the needs of students with EBD and help them decrease disruptive behaviors in classroom (Dunn et al., 2017). Students with EBD are considered the most challenging group to mainstream into general education classrooms.
BEHAVIOR CONTRACT AND TOKEN ECONOMY FOR STUDENTS WITH EBD

(Fletcher, 2010; Gottfried & Harven, 2015). This is because they are more likely to exhibit aggressive, immature, and self-injurious behaviors. Depression and anxiety are also prevalent in students with EBD (Evers, 2010; National Dissemination Center for Children with Disabilities, 2010). Their disruptive behaviors can affect learning of the whole class (Carr et al., 1991).

Instruction can be disrupted because teachers have to spend time managing these challenging behaviors in class (Alhossein, 2016). Therefore, students with EBD who have serious academic and behavioral problems are also at greater risk for being placed in restrictive settings (Gagnon & Leone, 2005; George et al., 2013; Knowles et al., 2015).

Teachers often exclude students from class activities due to disruptive behavior, which, even for short periods of time, can cause a loss of academic learning, possibly leading to academic and social failure (Gest & Gest, 2005; Kauffman, 2001). Further, Reid et al. (2004) found that academic performance of most students with EBD is much lower than typically developing peers in general education when tested using the Woodcock–Johnson III Test of Achievement (WJ-III), which includes math, reading, and written expression (Gage et al., 2017; Woodcock et al., 2001). Research by Knowles et al. (2015) also showed a strong relationship between the occurrence of challenging behaviors and poor academic achievement (Knowles et al., 2015; Lane et al., 2006; Morgan & Sideridis, 2013).

Johns (2000) found that disruptive behaviors from students with EBD also affected other students in class. Instructional focus for the entire classroom is difficult during behavioral outbursts due to lost focus for all students and their teacher. Intermittent interruptions can derail one’s ability to concentrate. To prevent these negative outcomes, teachers need knowledge and skills of effective behavioral management strategies (J. L. Cooper et al., 2009).
Importance of the Study

Students with EBD face more difficulties in school than other students in class. They face difficulties in social skills, such as forming relationships with peers and teachers (Evans et al., 2004; Kauffman & Landrum, 2009). These behaviors may affect them academically: according to Trout et al. (2003), students with EBD in elementary school are one to two grade levels behind when compared to their peers. Another study by Maajeeny (2018) found that 20% of the population aged 4 to 17 in Saudi Arabia may have EBD. The study revealed that they have difficulty maintaining a good relationship with peers and they also lack necessary social skills to interact with teachers and others.

According to Maajeeny (2018), “child gender, child education type, the geographical region, the father’s education level, and the family’s socioeconomic status were found to be statistically significant predictors of children difficulties” (p. 49). Moreover, Nelson et al. (2004) found that the intensity of behavioral problems impacted difficulties experienced by students at school or in life. According to Wilhite and Bullock (2012), more than 50% of students with EBD failed in school and most of them dropped out.

C. R. Smith et al. (2011) pointed out that students with EBD experience many negative consequences because of their challenging behaviors. For example, according to previous studies, 43% to 56% of students with EBD dropped out of school before they graduated from high school (C. R. Smith et al., 2011), or finished without a regular high school diploma (U.S. Department of Education, 2015). Both students who are at risk of EBD and those with EBD are at high rates of abuse or arrest (McKenna et al., 2017). Behavioral challenges can also cause learning difficulties, both diagnosed and undiagnosed (Rock et al., 1997). Additionally, students identified with EBD can also face problems with communication and social skills (Patterson et
al., 2006). When students with EBD fail to meet basic education requirements, issues may arise such as dropout from school, depression, anxiety, divorce and unemployment later in life (Harrison et al., 2013). Challenging behaviors also make it difficult for individuals with EBD to find employment and stay in the work force for long (Dunlap et al., 2006).

As discussed previously, some serious consequences can occur to students with EBD. Additionally, students’ behavior in the classroom is also a significant predictor of their life situation in young adulthood. For example, Collins et al. (2018) observed that between 80% and 90% of students with EBD do not enroll in secondary education, compared to 23% of the typical population. In another related study on how inappropriate behaviors impact students, Ling et al. (2011) report inappropriate behaviors are also associated with other negative effects such as interfering with the learning process of every student in the classroom, especially when they become disruptive and dangerous. That is, inappropriate behaviors disrupt and lead both the student with EBD who exhibits challenging behaviors and the remainder of the class population off task (Collins et al., 2018; Lum et al., 2017).

In addition, inappropriate behaviors are linked to discouraging and frustrating both the beginning and the experienced/veteran teachers. A study conducted by Lum et al. (2017), for example, indicated that a high frequency of inappropriate behaviors or challenging behavior overwhelms not only beginning teachers, but also veteran teachers. The behaviors are associated with lessening and negatively impacting the instruction time since teachers are forced to spend a substantial amount of time disciplining or controlling the disruptive behaviors at hand. Other negative effects associated with inappropriate behaviors, some of which are long-term, include suspension or expulsion from the school, dropping out of school, and having low grades (Collins et al., 2018; Flannery et al., 2014; Lum et al., 2017).
These alarming outcomes and statistics show that failure to adequately manage inappropriate behaviors in students with EBD can result in serious consequence. As a result, there is a pressing need to identify the most effective behavioral interventions and customize the available ones to fit in a given context so that such behaviors can be remedied. Dunn et al. (2017) reported that students with EBD at the elementary level perform at least a year below grade level. Because of this, many researchers and educators recommend early identification and intervention for students with EBD (Trout et al., 2006). According to Trout et al. (2006), early identification would help teachers and behavior analysts deliver better special education services, improve students’ lives, and remedy certain negative consequences of challenging behaviors.

According to Maajeeny (2018), negative outcomes of inappropriate behaviors can be avoided if the social and emotional needs of students were addressed at early stages. These needs can be addressed using behavioral interventions to help students with EBD succeed in life. This will not only improve life outcomes of students with EBD and their parents, but also help teachers with classroom management and save more time for effective instruction. Using effective intervention will help the teacher focus on improving instruction instead of focusing on reducing disruptive and inappropriate behaviors in class (Maajeeny, 2018). Therefore, students with EBD need more attention from teachers, professionals, and researchers, as well as the Saudi Ministry of Education so that effective and easy-to-implement behavioral interventions are identified and introduced to Saudi Arabia for students with EBD in schools (Maajeeny, 2018).

Rationale for the Current Study

Fortunately, much research supports EBP that have been proven effective in improving behavioral and academic outcomes in students with EBD (Dunn et al., 2017). There is a growing and increasing range of existing interventions in the field of special education to address the
intensive needs of students with EBD (Dunn et al., 2017). They need individualized intervention to meet their unique needs, either in class or at home (Maggin et al., 2016). The benefits of utilizing behavioral interventions for students with EBD include, but are not limited to decreasing challenging behaviors, increasing positive social interactions with others, and providing students with opportunities to engage in learning and increase their academic achievement (Rodriguez & Anderson, 2014). Inappropriate behaviors displayed by students with EBD require effective behavior management approach (Wheeler, 2017).

Researchers in the field of special education have discovered a variety of evidence-based approaches for students with EBD, one of which is using reinforcement-based strategies (Hawkins & Axelrod, 2008). Researchers have determined that if a target behavior is reinforced at a high rate, it is more likely for this behavior to change (Dunn et al., 2017). Using positive reinforcement such as token economy and behavioral contract in children with EBD can decrease challenging behaviors, improve academic performance and social interactions, and reduce negative outcomes later in life (Maggin et al., 2016).

Token economy is a behavioral change system that uses tokens to assist people with certain disorders increasing desirable behaviors and shun unwanted behaviors (Kazdin, 2012). Token economy is considered a positive reinforcement technique; tokens can be in the form of tickets, plastic chips, or fake money. These items can be exchanged for desired items such as food, markers, or books (Gunter et al., 2002). Research by Nelson et al. (2004) has recommended token economy as the most successful and applicable system to “manage inappropriate behaviors through proactive prevention rather than reactive punishment” (pp. 3-4). Behavior contract, also called contingency contract (J. O. Cooper et al., 2007), is a behavioral change strategy that a teacher uses to reinforce positive actions of students (Bowman-Perrott et
Behavior contracts have been in use for more than 45 years to assist in managing disruptive behaviors (Bailey et al., 1970; Bowman-Perrott et al., 2015). The behavior contract is marked by laying ground rules to which an individual student is required to abide.

Combining behavior contract and token economy may be able to maximize positive intervention outcomes in both reducing inappropriate behaviors and increase academic performance in students with EBD. A critical review of available literature on management of inappropriate behaviors among students with EBD has shown that token economy and contract behavior strategies are among the most widely used behavioral interventions (Cutrell, 2011; Mruzek et al., 2007; Navarro et al., 2007). Behavior contracts and token economy are inexpensive and can be easily implemented to address challenging behaviors in students with EBD. Numerous studies have shown that these interventions are effective in reducing challenging behaviors in students with EBD in the United States, at various grade levels, involving different types of challenging behavior (Cavalier et al., 1997; Soares et al., 2016). The combination of behavior contracts and token economy can improve students’ academic performance, reduced social rejection and insults by peers, decreased inappropriate behaviors, and reduced the damage to school property and inactivity during class (Navarro et al., 2007).

This study is significant because it may help children with EBD in Saudi Arabia to improve their academic performance and social skills while minimizing negative outcomes, giving them the same chances to success in education and in life as their peers have. Using behavior contracts and token economy might improve not only positive outcomes of students with EBD and their parents but also help teachers with classroom management.
This study is important as it fills a significant gap in the literature. To date, no study has been conducted to examine the effectiveness of such intervention package with students with EBD in Saudi Arabia. This study aims to introduce cost-effective EBP such as these from the United States to Saudi Arabia.

**Theoretical Basis**

Skinner hypothesized that the most efficient way to modify behavior was by changing the environment (Olson, 2015; B. F. Skinner, 1953). He emphasized the use of reinforcements to influence desired behavior. Behavioral change is an outcome of a person’s reaction to events that take place in his or her environment (Olson, 2015). Ideally, where a certain favorable response is rewarded, a person is motivated to exhibit the same response in the future (Olson, 2015). Skinner proposed the use of various rewards such as food items, recognition, and extra time as possible reinforcements that can influence certain behaviors (Olson, 2015; C. H. Skinner et al., 2004). B. F. Skinner (1963) and Pritchard (2014) stated that desirable behaviors would occur in greater frequency than less desirable ones when teachers integrate positive reinforcement.

The second theory, social learning theory proposed by Albert Bandura, states that a person learns behavior by observing others performing the desired behaviors. This observation occurs subconsciously and can then be recalled later. This social learning theory (Bandura, 1985) posits a relationship between people’s cognitive ability, their behavior, and their surroundings. For people to effectively model behavior, they need to be attentive, capable of retaining observed behavior, able to reproduce such behavior, and motivated to do so (Sallis et al., 2015). Educators should use rewards to reinforce good behaviors in classrooms (Gunter et al., 2002). Additionally, social learning theory was based on Skinner’s idea that people are motivated to behave in a certain way if their behavior attracts favorable consequences. Token economy relies on the
issuance of tokens when a person engages in desired behavior, and the tokens can be redeemed for a reward at a certain time later. Hence, it is appropriate to be used to assist children with EBD in decreasing disruptive behaviors (Olson, 2015).

The most relevant aspect of social learning theory for this study is motivated capability. This is because a person can recall an incentive, which gives him/her motivation to act in a certain way (Sallis et al., 2015). Incentives are positive reinforcements, and they validate the use of token economy to enhance desired behavior. EBD are disorders that relate to both cognition and behavior; therefore, this theory is relevant because it provides a connection between the cognitive and behavioral theories described above (Sallis et al., 2015).

**Literature Relevant to Token Economy and Behavior Contract**

Although there are numerous studies examining the effectiveness of token economy and behavior contract separately in the existing literature, only a few have combined the two interventions into one package to measure their effects on students with EBD. Researchers believed that the two interventions assist each other in the package (Bowman-Perrott et al., 2015). Whenever a student behaves in line with the behavior contract, he/she will be awarded a token to be redeemed later.

J. O. Cooper et al. (2007) laid a basis for combining both token economy and behavior contract. Approaches used in classroom management combine both reward systems and rule-based approaches. In the case of token economy, certain rules need to be set to ensure the reward system is effective. In this case, one approach feeds off the other (Simonsen et al., 2008). J. O. Cooper et al. argued that the effectiveness of token economy depends highly on the significance of backup reinforcement on the targeted child. J. O. Cooper et al. explored justification of combining behavior contract and token economy on inappropriate behaviors of students with
EBD, and suggested that token economy is encompassed in the behavior contract. This is because they define behavior contract as a contingency contract that sets out the relationship between a certain behavior and the resultant reinforcement (Simonsen et al., 2008).

Both behavior contract and token economy have been proven effective in improving behaviors of schoolchildren with EBD (J. O. Cooper et al., 2007; Navarro et al., 2007; Simonsen et al., 2008). However, they both have limitations when being used as an intervention alone. For instance, behavior contracts determined by Bowman-Perrott et al. (2015) reduced undesired behaviors but did not correspondingly increase desired behaviors. Also, token economy has been shown to be effective by some, though Maggin et al. (2011) have stated that there was not yet enough evidence to determine token economy as the best practice. The combination of these two strategies could further improve outcomes because they reinforce one another (Simonsen et al., 2008). J. O. Cooper et al. (2007) also suggested that token economy is encompassed in behavior contract so each strategy can support and improve the other.

Similarly, Navarro et al. (2007) reported positive outcomes when they combined both behavioral interventions together in their research in three students aged 8 and 14, who exhibited a wide array of disruptive behaviors including making all kinds of noises, crying during instruction, property destruction, aggression toward peers, and verbal outbursts, all of which negatively affect classroom learning. After implementing the intervention package for 4 months with a follow up, the researchers have found that teachers reported a significant reduction in the occurrence of the following disruptive behaviors: insults, damage of school materials, and inactivity during class.

Navarro et al. (2007)’s intervention, mentioned previously, consists of behavior contracts and token economy. The teacher reported a positive change of behavior in the students. Results
also showed a significant reduction in the occurrences of insulting others, damaging class materials, and inactivity during class. Navarro et al. (2007) and Simonsen et al. (2008) showed that students with EBD are at high risk for not being socially accepted because of their behaviors. However, the combination of strategies was shown to decrease adult crimes, improve academic performance, and reduce the stated social rejection from others (Navarro et al., 2007; Simonsen et al., 2008).

**Problem Statement**

Education for children with special needs is improving in Saudi Arabia. However, “children with emotional and behavioral disorders are neither consistently identified nor adequately served in Saudi Arabia, although they are recognized as a distinct category of children who require special education services” (Maajeeny, 2017, p. 2). Teachers, parents, and school children are all negatively impacted by the inappropriate behavior of children with EBD. This issue is linked to several more challenging issues including academic underachievement of children with EBD, quality of education for non-EBD children in the class, quality children-parent relationships, school dropout rates, and teacher satisfaction (Collins et al., 2018). It is not yet known how significant cultural differences between school children in the U.S. contrasted with Saudi Arabia’s will impact research outcomes.

Additionally, there is little research available on token economy or behavior contract in Saudi Arabia. These issues need attention of researchers if they are to improve in Saudi Arabia due to the considerable gap in the literature and the lack of EBP. There is a significant need to identify the most effective behavioral interventions and to customize them to fit in each context so that such behaviors are mitigated, if not completely eradicated.
The high prevalence of disruptive behaviors among students with EBD in the Kingdom of Saudi Arabia (KSA) underscored the need for approaching this problem from a different angle. As a result, the researcher decided to research this issue with an aim of identifying the most effective behavioral interventions for students with EBD, as token economy and behavior contract emerged as widely used and effective strategies for behavior management (Bruhn et al., 2015; Kazdin, 2017). The researcher aims to the effects of combining both strategies on out-of-seat behavior in Saudi students.

Purpose of Study

The purpose of this study was to assess the effectiveness of an intervention package of behavior contract and token economy in decreasing out-of-seat behaviors in students with EBD in Saudi Arabia. The researcher used a multiple baseline across participants design involving three elementary students with EBD in Saudi Arabia. The researcher used the intervention package to examine its effects on their out-of-seat behavior.

A review of literature was conducted to justify that they were feasible behavioral interventions for students with EBD within the Saudi Arabian context, as behavior contract and token economy are relatively easy to implement (Maajeeny, 2018). Also, this intervention package has been proven effective in decreasing disruptive behaviors in the classroom with students with EBD in the United States (J. O. Cooper et al., 2007; Lane et al., 2002; Navarro et al., 2007; Simonsen et al., 2008; Sutherland et al., 2000).

Research Question

The researcher seeks to answer the following research question:

RQ: Is the intervention package that combines behavior contract and token economy effective in decreasing out-of-seat behaviors in students with EBD in Saudi Arabia?
**Hypothesis:** The intervention package will be effective in decreasing out-of-seat behaviors in Saudi students with EBD.
Chapter Two

Literature Review

Overview

This chapter comprises two parts. The first includes a review of the literature on EBD. This chapter begins with the definitions of EBD and possible causes, then recent studies related to the prevalence of EBD and negative consequences of the condition were reviewed, followed by an overview of general education, special education, and relevant laws and regulations in Saudi Arabia.

The second part of this chapter includes a review of the literature on the use of behavior contract and token economy with students with EBD to decrease disruptive behaviors in this population. Existing literature on using behavior contract and token economic as interventions were also reviewed. This review was conducted to evaluate the effectiveness of the particular intervention package with students with EBD and to determine its proper application in Saudi Arabia. This chapter identifies the gaps that necessitated the present study.

Understanding Emotional and Behavioral Disorders

Emotional and behavioral disorders (EBD) can negatively impact a child over a long period of time (Sutherland et al., 2000). Teachers who work with students with EBD should be more familiar and knowledgeable about these disorders and their different types (Lane et al., 2002). Research shows that 43% to 56% of students with EBD dropped out of school before they graduated (Dunn et al., 2017; C. R. Smith et al., 2011). Therefore, research on EBD requires effective interventions to address the challenging behaviors and help students with EBD improve their academic skills (Dunn et al., 2017). During the last decade, researchers have discovered that the more severe the students’ EBD symptoms, the more it hinders their education. They stress
the importance of using evidence-based practices (EBP) to teach students with disabilities, including students with EBD (Dunn et al., 2017; C. R. Smith et al., 2011). According to Hallahan et al. (2008), the IQs of students with EBD tend to be at the lower end of the average compared to most of their peers in class. They also tend to have lower academic achievement in general.

**Indivduals with Disabilities Education Act Definition of EBD**

The Individuals with Disabilities Education Act (IDEA, 2004) defines EBD as revealing one or more of the following characteristics over time:

a.) learning ability is negatively impacted and not related to any intellectual, sensory, or health issues:

b.) inability to sustain or maintain relationships with peers and teachers.

c.) inappropriate behaviors, persistent feelings of unhappiness, or depression under normal circumstances.

d.) physical signs or fears related to or linked with personal or school problems.

e.) emotional disturbance, including schizophrenia.

**Different Types of EBD**

According to Kauffman and Hallahan (2011), there are many types of EBD, such as eating disorder, psychotic disorder, conduct disorder, bipolar, anxiety, and compulsive behaviors, etc. Figure 1 summarizes different types of EBD along with the characteristics of each type. The first category is attention and hyperactivity disorder. Students with this disorder might have difficulty sustaining attention or showing a systematic flow of activity. In most cases, students who exhibit these characteristics are diagnosed with attention-deficit/hyperactivity disorder (ADHD; Kauffman & Hallahan, 2011). The second category is conduct disorders, which are characterized by the inability of a child to function well both at home and in school. Students
with these types of EBD might engage in physical aggression and acting out (Kauffman & Hallahan, 2011). The third category of EBD is anxiety disorders, which are internalized, showing signs of severe stress, tension, and anxiety (Kauffman & Hallahan, 2011). Children with anxiety disorders can also exhibit panic attacks, withdrawal, and certain phobias (Zionts et al., 2002). The fourth category is depression (Zionts et al., 2002). Finally, other EBD types include schizophrenia and other serious disorders (Kauffman & Hallahan, 2011). Challenging behaviors related to this disorder are sudden outbursts of anger, being easily provoked, and defying the teacher’s classroom rules, screaming suddenly, or speaking in class without permission, generally as reactions to negative stimuli (Kauffman & Hallahan, 2011). These compulsive behaviors manifest differently in different students.

**Figure 1**

*Types and Characteristics of Emotional and Behavioral Disorders (EBD)*

![Diagram of Different Types of EBD](image)
CAUSES OF EBD

D. D. Smith and Tyler (2009) reported that EBD is caused by various factors such as biological predisposition, which ranges from genetics to conditions such as a brain injury. Most individuals with brain-related injuries have emotional or behavioral problems, although not many children with EBD truly have brain trauma or injury (Heward, 2003). Secondly, EBD can be caused by environmental factors, such as exposure to negative relationships or violence (D. D. Smith & Tyler, 2009).

School and home environments tend to be triggers for the development of EBD; symptoms may be seen at the time a child starts his/her education (Kauffman & Hallahan, 2011). Environmental factors include “(1) an adverse early rearing environment, (2) an aggressive pattern of behavior displayed when entering school, and (3) social rejection by peers” (Heward, 2003, p. 294). McEvoy and Welker (2000) stated that home, parents, siblings, society, and school comprise five settings in which inappropriate behaviors occur. They also indicated that the most important factor is the relationship between the parents and their children, starting from birth. They continued that children with EBD often struggle with strict parents who manage undesired behaviors with punishment. Other parents tend not to spend time with their children, who consequently get neglected (McEvoy & Welker, 2000). Teachers, peers, and lack of support in the classroom could be other possible environmental causes for EBD. EBD also can be caused by social factors, such as drug and alcohol use or sexual abuse, which are more prevalent in children with EBD (Biglan, 1995). Heward (2003) stated practices at school that may contribute to EBD may include “ineffective instruction, unclear rules and expectations for appropriate behavior, inconsistent and punitive discipline practices, infrequent teacher praise and approval for academic and social behavior, and failure to individualize instruction to accommodate
Students with EBD can exhibit either externalized or internalized behaviors (D. D. Smith, 2014). Externalized behavior is physical or outward, such as violence and vandalism, acting out and screaming at others (Abaoud & Almalki, 2015). Internalized behavior may include severe anxiety and isolation (Kauffman & Hallahan, 2011; D. D. Smith, 2014), depression, low self-esteem, withdrawal, isolation, shyness, and even anorexia (D. D. Smith, 2014). Research shows that EBD affects students of both genders. However, Hendrickson et al. (1998) found that EBD prevalence in males is higher than in females. For example, Sutherland et al. (2000) found only 33 female students, as opposed to 183 male students diagnosed with EBD from self-contained classrooms in 20 schools. Figure 3 shows the different types of behaviors exhibited by students.
**Prevalence of EBD in the United States and Saudi Arabia**

The General Authority for Statistics (n.d.) reported that the number of children with EBD would increase by 10,000 students per year. Maajeeny (2018) reported that 8.3% of the school population in the United States were identified as having EBD. This percentage is high and therefore requires immediate attention from all stakeholders including teachers, other professionals and researchers. Literature review in the field of special education involving students with EBD in Saudi Arabia has shown only little research was conducted in this area. There were only two studies related to identification of children with EBD. The first study by Abdel-Fattah et al. (2004) investigated the prevalence of EBD amongst male school-aged
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children and adolescents in the city of Taif. They found that 8.3% of male school students were identified as having EBD (109 students). More recently, Al-Modayfer and Alatiq (2015) investigated the prevalence of children with EBD in Saudi Arabia using the Strengths and Difficulties Questionnaire (SDQ). Target participants involved 924 participants from the city of Riyadh. The study screened and assessed EBD by interviewing children who were at high risk for EBD. Results indicated that 36.3% were found to have EBD, 25.7% of children had behavioral disorders (BD), 21.7% had emotional disorders (ED). Consistent with previous research that shows the prevalence of EBD among students in Saudi Arabia is increasing (Al-Modayfer & Alatiq, 2015).

**Negative Impacts of EBD**

Bullis and Cheney (1999) revealed that only 10-25% of students with EBD enroll in post-secondary education, compared to 53% of the typical population. These statistics relate to the students who are identified as students with EBD in need for special education services. Research showed that students with EBD perform poorly academically due to the behavioral problems they encounter (Polloway et al., 2017). Further, research has also shown that students with EBD are underserved and restricted from general schools (Forness et al., 2012). The most common reason for removing students from regular classrooms, jobs, and home are their problem behaviors (McKenna et al., 2017). Students with EBD are also expelled from school because of their disruptive behaviors (Reichle, 1990). Life setbacks, such as expulsion from school, only exacerbate the symptoms and halt development of the child (Brauner & Stephens, 2006). According to Reichle (1990), behavior problems have big effects on a student’s life outcome; because of these problem behaviors, around 75% of students with EBD in the U.S. have been suspended or expelled from school.
In the United States alone, one out of five students experience emotional and mental health problems during their childhood up until the adolescent stage (Brauner & Stephens, 2006). In special education, EBD is categorized among the four major disorders that have high prevalence with 9% of students receiving special education having the diagnosis (Skiba et al., 2008). Centers for Disease Control and Prevention reported that up to 11% of all school age population has EBD. For instance, the United States Department of Education released the 26th Annual Report, which reported that 482,000 students aged between 6 and 21 years had been diagnosed with EBD (Skiba et al., 2008). Theoretically, it is believed that the emotional part of a child precedes the development of their thought and cognitive abilities (Skiba et al., 2008). In 2000, the United States Department for Health and Human Services held a meeting with public health professionals on matters that concern health. In this meeting, the experts suggested an urgent need for the nation to devise ways for improving the emotional health of school-going children and their caregivers (Brauner & Stephens, 2006). This was to be done through the adoption of continuous comprehensive and individual-based strategies, which are aimed at both prevention and intervention. The suggestion to develop a plan is motivated by the fact that the early onset of health and behavioral problems in children, if not prevented, goes on to manifest as EBD when they become adolescents and showcase behaviors (Skiba et al., 2008).

Despite the above recommendation, Polloway et al. (2017) show that students with EBD are still underserved in public schools. Moreover, a noteworthy number of students with EBD are alienated from regular classrooms (Garner et al., 2014). This is contrasted with students under other disability groups, such as those with learning disabilities who are given access to general classrooms. Hence, many students with EBD go unrecognized and underserved (Polloway et al., 2017).
Overview of the General Education System in Saudi Arabia

The Ministry of Education and the Ministry of Higher Education are the two ministries responsible for delivering an appropriate education to Saudi citizens. They are now combined under the banner of the new Ministry of Education. The Ministry of Education was established in 1953 and is responsible for providing general education at the pre-elementary, elementary, intermediate, secondary, and higher education (university) levels. The ministry is also responsible for the teachers’ preparation programs, special education programs, and adult education for the illiterate (Al Salloom, 1995). Education was available only to the children of wealthy families until December 24, 1953, when the Ministry of Education was established, resulting in many changes (Ministry of Education of Saudi Arabia, 2018). In 2010, the ministry grew from serving only a few thousand students in 300 schools to more than five million male and female students in 47,325 schools, with more than 420,000 teachers working in general education settings (Alquraini, 2010).

The concept of “Education for All” in Saudi Arabia represents a commitment to elementary and basic education for all school-age children (Al Shaer, 2007). Education for all “includes all categories determined by the International Declaration on Education for All and International Conference on Education for All, namely, early childhood, basic education, adult education, the education of those from deprived environments and girls’ education” (Al Shaer, 2007, p. 1). This concept guarantees access to learning through free education for all (Al Shaer, 2007). The General Secretariat for Adult Education of the Ministry of Education (Girls’ Education Branch) reported that there was a reduction in the percentage of illiterate women from 40.1% in 1993 to 21.2% in 2005, due to the Ministry of Education increasing the number of
programs pertaining to women’s literacy, which positively affected the academic development of women in Saudi Arabia (Al Shaer, 2007).

**Teacher Training in General Education**

Teachers’ Continuing Professional Development Programs in Saudi Arabia for teachers started in 1954. The Ministry of Education trained more than 1,025 teachers by offering courses in different subjects, such as psychology and teaching methods (Alghamdi & Li, 2011). In 1974, the Ministry of Education started the General Directorate of Training and Scholarship (GDTS) whose aim was to accomplish continuous, growing professionalism between teachers to improve methods through a different system of training (General Directorate of Training and Scholarship, 2011). In 1974, the GDTS was responsible for training teachers instead of the Ministry of Education. Given the impact of teachers on the education system, many training centers were established to train all teachers from different regions (Alghamdi & Li, 2011). Teacher training programs have grown as an essential part of the educational system in Saudi Arabia. Standards for teacher training have been improved progressively. To teach in any of the education levels, teachers need a 4-year bachelor’s degree. At the university level, it is mandatory to combine courses in education with courses offering information of a specific subject, or content area (Saudi Arabian Cultural Mission, 2006).

According to Algarfi (2005), there are two forms of training in Saudi Arabia for teachers: the first one called pre-service and the second one called in-service training programs. Graduates from some of these Saudi universities commented that the pre-service training programs that they received were unsatisfactory and old-fashioned (Algarfi, 2005). Studies have also acknowledged the ineffectiveness of the courses, structure, and management of in-service teacher training programs (Aldkheel, 1992; Almazro, 2006; Alsounble et al., 2008; Musalam,
they stated that there is a huge gap between university level training and real practice in schools. In fact, general education teachers have never been trained in the field of special education when they were in teacher preparation programs.

Alnassar (2004) reported that teacher preparation programs face many difficulties including: failing to prepare teachers to work effectively with students or manage classroom, lack of communication with parents, and failure to use technology in classroom. Alhammed et al. (2004) summarized the issues, which included: (1) there was a huge number of untrained and unqualified teachers at Saudi schools because of the lack of training and preparation amongst teachers; (2) teachers failed to interpret/understand students’ needs, both educationally and psychologically.

Professional Development for Teachers

Continuing professional development can be defined as “the process by which teachers acquire the new knowledge, skills, and values that positively impact students” (Hoyle & John, 1995, p. 17). International research literature has always shown that professional development is an important factor (Day, 1999; Hargreaves, 1994) that can assure improvement and change in the school systems including teachers and administrators (Sywelem & Witte, 2013). This improvement will guarantee a successful academic career (Sywelem & Witte, 2013). Professional development acknowledges that there is a need for teachers to obtain new skills that will allow them to improve their own practice and get better (Feiman-Nemser, 2001; Putnam & Borko, 2000). Professional development can have a positive effect on school curriculum, teaching, learning, and student-teacher relationship (Sywelem & Witte, 2013; Talbert & McLaughlin, 1994).
In 2007, King Abdullah bin Abdul-Aziz revealed the King Abdullah bin Abdul Aziz Public Education Development Project, which was applied a year after. The goal was to improve the outcomes of Saudi Arabian education system (Australian Council for Educational Research, 2011). The Ministry of Education in Saudi Arabia classified 39 stages to implement and apply this project. This project includes improvements in different areas such as curriculum development, specially designed programs for teachers, school environment improvements, and beneficial activities for students (Ministry of Education of Saudi Arabia, 2008).

**Special Education in Saudi Arabia**

Ten years after the establishment of the Ministry of Education in 1953, the Ministry created a new department: The Department of Special Education. Its mission was to provide students with different types of disabilities the needed services. One specialty is providing a service which identifies special needs children and their requirements for receiving a quality education (Battal, 2016). The department provides services to students with the following disability categories: learning disabilities, autism, communication disorders, intellectual disabilities, physical and multiple disabilities, and deafness and blindness (Al Salloom, 1995). Special education first started in 1958 (Aldabas, 2015), and was formally established in Saudi Arabia in 1962 (Altamimi et al., 2015).

Teachers can major in any of the following specialized areas through the Department of Special Education: hearing disability, visual disability, intellectual disability, learning disability, multiple disabilities, autism disorder, behavioral and emotional disorders, health and body disorders, language and speech disorders, and deaf blindness. Children with EBD in Saudi Arabia are neither properly identified nor sufficiently served, though they are recognized as an individual category under children who need special education services (Maajeeny, 2017). Saudi
Arabia’s population has grown by 2.1% per year, and the General Authority for Statistics (n.d.) reported an expected increase of 10,000 students with EBD per year (Maajeeny, 2017). The ministry has made significant progress in offering services to students with disabilities (Aldabas, 2015). The main reason for establishing special education programs is because many students with disabilities cannot benefit from the regular public education system (Aldabas, 2015).

Offering free and appropriate public education for students with disabilities should be the purpose for special education in Saudi Arabia (Murry & Alqahtani, 2015). The system of special education in Saudi Arabia has changed from segregating students with special needs to mainstreaming and including them in public schools (Alquraini, 2010). Saudi Arabia has highlighted “education for all” (Murry & Alqahtani, 2015). The number of schools cooperating in mainstream programs has increased extremely in attempts to assist all students with special needs in the country (Alquraini, 2010). To promote their participation in school, the government supports students with special needs in living expenses, assistive technology, and transportation (Aldabas, 2015). However, there is still a need for progress toward inclusion and teaching students with disabilities. These developments have brought about new challenges, including the need for teachers to collaborate with families of children with disabilities (Alquraini, 2010).

In 1960, a special education program, Al-Noor Institute (it means The Light Institute in English) in Riyadh, was created by the Ministry of Education, which was the first training institute for male children with blindness or visual impairment. In 1964, another institute was opened for females with the same types of disabilities. In the same year, the first school for individuals with hearing impairment named Al Amal Institute (The Hope Institute) was opened in Riyadh (Saudi Arabian Cultural Mission, 2006). This institute provided them with proper education and training. In 1971, Al-Tarbiyah Al Fikriyah Institutes for boys and girls were
established in Riyadh, and they were the first institutes for children with intellectual disabilities. Schools for children with disabilities have increased from one school in 1960 to 27 schools in 1987, and the latest data shows there are 54 schools (Saudi Arabian Cultural Mission, 2006). Specifically, 10 schools are for students with blindness, 28 for students with hearing impairment and 16 for the students with intellectual disability (Saudi Arabian Cultural Mission, 2006).

To teach in special education centers or schools, teachers candidates need a 4-year bachelor’s degree in special education. Every teacher candidate majored at special education at college or university is required to take pedagogy courses with content courses specialized in specific disabilities (Saudi Arabian Cultural Mission, 2006). During the last semester of bachelor programs in special education, teacher candidates are placed in special education schools or centers specifically align with their majors for field training.

Law and Regulation Related to Special Education in Saudi Arabia

In Saudi Arabia, the legislation ensures that every student with disabilities has the right to learn and obtain appropriate special education services (Alquraini, 2013). The Saudi government strikes to improve special education services for individuals with disabilities (Al-Mousa et al., 2006; Alquraini, 2013). According to Alquraini (2013), the Regulations of Special Education Programs and Institutes of Saudi Arabia (RSEPI; General Authority for Statistics, n.d.) published 11 articles related to special education. In summary, these articles focus on concepts and definitions used in legislation, including the definitions of disability, least restrictive environment, resource room, transition, special education teachers, and Individual Education Plans (IEPs), as well as benefits of teachers and those who work with students with disabilities. The goal of this legislation is to help students with disabilities by providing them with appropriate education, meeting their needs, and raising awareness about disability. It also
discusses the foundation of special education, the rights of students with disabilities to learn in the general education classroom and defines the 10 categories of disability as “cognitive disability, learning disabilities, autism, multiple disability, deafness, blindness, gifted, physical and health disability, emotional disorder, and communication disorder” (Alquraini, 2013, p. 605). The summary explains the assessments for each category and the evaluation process. There is some weakness when it comes to implementing what has been mentioned in the RSEPI in the real world because although it has been described, it is not guaranteed (Alquraini, 2013). “The Saudi legislation lacks procedural safeguards that guarantee the right for students with disabilities and their parents to obtain high quality of special education services or deal with any special education disputes” (Alquraini, 2013, p. 607).

**Historical Timeline of Special Education in Saudi Arabia**

This subsection discusses in greater detail the historical timeline and developments of special education in Saudi Arabia. Figure 4 presents a summary of these developments. Before 1958, the government of Saudi Arabia did not offer special education services to children or individuals with disabilities. Children with special needs got educational support from only their parents and families (Aldabas, 2015; Alquraini, 2013; Battal, 2016). Many families who had children with disabilities tried to teach basic academic skills such as reading and writing within their own home (Al-Mousa, 1999; Alquraini, 2013). Some families sent their children to Egypt or Jordan to get special education services (Alquraini, 2013). In 1959, the Saudi government started to offer special education services to people with visual impairments to teach them how to read Braille. At that time, no individuals with other disabilities received any assistance (Aldabas, 2015).
In 1962, Saudi government started to provide people with visual and intellectual impairments with rehabilitation and education services (Afeafe, 2000; Alquraini, 2010). In 1987, there were 27 schools for different types of disabilities. From 1987 to 2000, the number of schools expanded to 54 in total. In 1990, a huge improvement took place in the field of learning disability. Resource rooms were established in public schools (Al-Mousa, 2010). More than 746 public schools were serving students with various special needs. Children with intellectual disabilities, multiple disabilities, and mild to moderate disabilities were provided with special education services in resource rooms in the same school buildings with typically developing peers, while maintaining a gender separation within the schools (Aldabas, 2015). According to Aldabas (2015), “Still, no unique services are provided to other categories of disabilities, such as Behavioral and Emotional Disorders (BED) as well as Attention Deficit and Hyperactivity Disorder (ADHD) as these seem to be disorders rather than a type of disability” (p. 1161).

Special education classrooms existed for students with visual impairment, blindness, hearing impairment, deafness, intellectual disabilities, and autism at public schools (Al-Mousa, 2010). To ensure that students with disabilities get appropriate free public education and intervention programs, the Saudi government established laws and legislation for people with disabilities and special education (Aldabas, 2015; Alquraini, 2010; Ministry of Education of Saudi Arabia, 2012).

In 2001, the Ministry of Education in Saudi Arabia established the Rules and Regulations of Special Education Programs (RRSEP). The purpose was to ensure that students with disabilities have the right and approach to special education services (Afeafe, 2000; Aldabas, 2015; Alquraini, 2010). This rule determined that the educational path would be specific to the student’s needs. The disability categories that are eligible to receive benefits include blindness,
deafness, hearing impairments, learning disabilities, intellectual disabilities, and autism. The goal of RRSEP was to ensure that all students with disabilities receive services to meet their needs.

Special education services through this law are accessible to students in elementary, middle and high schools (Aldabas, 2015; Alquraini, 2010). However, this law is different from the IDEA in the United States, in that it does not incorporate any services to fully include students with disabilities, Least Restrictive Environment, or early intervention services (Aldabas, 2015). Disability Law was issued in 2000 by the Saudi government (Aldabas, 2015), and guarantees that people with disabilities can receive appropriate and free rehabilitation, educational and mental health services offered by a public institution (Alquraini, 2010). It requires that all services must be provided to all individuals with disabilities without discrimination (Aldabas, 2015).

**Figure 4**

*Historical Timeline of Special Education in Saudi Arabia*
BEHAVIOR CONTRACT AND TOKEN ECONOMY FOR STUDENTS WITH EBD


Definition of EBD in Saudi Arabia

The definition of EBD is important because it reveals and conceptualizes the behavioral characteristics of the disorder and what kind of intervention or strategies the researchers consider appropriate (Kauffman & Landrum, 2013; Maajeeny, 2018). According to Alwan (2012), the definition of EBD being used in Saudi Arabia is the same as the U.S. federal definition of emotional disturbance (ED). However, “professionals in Saudi Arabia have adopted the formal definitions accepted in the United States of America (USA) without considering cultural differences or the unique characteristics of the Saudi population” (Maajeeny, 2017, p. 2). An examination of the special education research literature exposes inadequate research in the EBD
field in Saudi Arabia. It also suggested that Saudi Arabia needs to have an official definition of EBD that is culturally sensitive (Maajeeny, 2017).

Using the U.S. federal definition may raise questions in Saudi Arabian researchers, professionals, and teachers. For example, in the U.S. definition, one of the five main characteristics of ED is “inappropriate types of behavior or feelings under normal circumstances.” But what types of disruptive behaviors or feelings do Saudi students demonstrate? Are they similar to or different from those of the U.S. students? Who decides if they are similar or not? The importance of these questions stems from the fact that despite the use of the U.S. definition in Saudi Arabia, the types of behavior demonstrated by Saudi children may be very different from those by U.S. children.

Behaviors of these students and the severity of their symptoms can be different from those of students in the United States. Some behaviors are considered acceptable in Saudi Arabia, but not in the United States (Alwan, 2012). In general, behaviors are subjected to conditional judgments based on a society’s cultural beliefs and the people’s background (Kitsuse, 1962). For instance, bullying is a serious issue in some cultures, but may not be considered an issue in others (Maajeeny, 2017). Among the cultural differences between Saudi Arabia and the United States are gender separation and male domination. What might work for students from the U.S. may not work with students from Saudi Arabia (Alwan, 2012).

After interviewing many special education faculty members at the University of Jeddah and King Saud University in Riyadh and reviewing research and courses that the Departments of Special Education offer regarding the education of children with EBD, the researcher concluded that there were not adequate programs for this population (A. Al-Harbi, personal communication, February 18, 2018; O. Fawaz, personal communication, February 18, 2018). Four years ago, only
two programs served children with ADHD in public schools. These two programs are mainly the same as those offered to children with learning disabilities, and children are taught academic skills with some accommodation and modification based on their needs. There are also some private schools and rehabilitation centers in Riyadh that serve students with EBD. However, still no one has examined the effectiveness of these programs. Dr. Abeer Al-Harbi, an Assistant Professor in the Department of Special Education at King Saud University, mentioned that there is limited research on EBD (personal communication, February 18, 2018). Maajeeny (2018) also stated that individuals with EBD are not identified or served properly in Saudi Arabia, even though they are categorized as a disability by law.

Therefore, these students need more attention from teachers, professionals, and researchers, as well as the Saudi Ministry of Education so that effective and easy-to-implement behavioral interventions are identified and introduced to Saudi Arabia to better serve students with EBD in Saudi schools (Maajeeny, 2018). Behavior contracts and token economy are inexpensive and can be easily implemented to address challenging behaviors in students with EBD. Numerous studies have shown that these interventions are effective in reducing challenging behaviors in students with EBD in the United States, at various grade levels, involving different types of challenging behavior (Cavalier et al., 1997; Soares et al., 2016).

**Theoretical Basis of the Current Study**

**Applied Behavior Analysis**

According to J. L. Cooper et al. (2009), applied behavior analysis (ABA) is defined as “a scientific approach to discovering environmental variables that reliably influence socially significant behavior and developing a technology of behavior change that takes practical advantage of those discoveries” (p. 2). ABA studies the functional relationship between the
context and the result of a socially relevant behavior (J. L. Cooper et al., 2009). A socially
important behavior is a behavior that is aimed at improving the person and community (Baer et
al., 1968). An ABA intervention focuses on visibly changing socially relevant behaviors so that
other people in the person’s life can understand meaningful behavioral progress (Baer et al.,
1968, 1987; Olson, 2015). Baer et al. (1968) recommended that ABA should be functional
(applied), behavioral, analytical, technological, described based on related ABA principles,
effective, and generalizable.

According to the three-term contingency relationship of antecedents, actions, and
consequences (A-B-C) theorized by Skinner, the relationship between the antecedent and the
behavior occurs because of the consequences of previous A-B relations (Olson, 2015). B. F.
Skinner (1963) reported that the guiding force behind a behavior is the consequence. When a
certain favorable response is rewarded, a person is motivated to exhibit the same response in the
future (Olson, 2015). A reinforcing consequence immediately following the target behavior
increases the probability of the target behavior occurring under similar conditions in the future
(J. O. Cooper et al., 2007). B. F. Skinner (1963) and Pritchard (2014) stated that desirable
behaviors occur in greater frequency than less desirable ones when reinforcements are integrated.
Skinner’s theory states that the objective of any psychology approach is practicality. Skinner
assumed that the most efficient way to modify behavior was by changing the environment
(Olson, 2015). His main ideology was the use of reinforcements to influence desired behavior.
According to this theorist, behavioral change is an outcome of a person’s reaction to an event
that takes place in the environment (Olson, 2015).

Skinner proposed the use of various rewards such as additional points, food items,
recognition, and extra time as possible reinforcements that can influence certain behavior.
Obviously, the opposite is also true, in that undesirable behavior attracts negative response. This notwithstanding, Skinner was strongly opposed to punishment and deemed it ineffective in behavioral change (Olson, 2015). The concept of token economy was directly built on this theory. This concept states that educators should employ the use of rewards to reinforce good behavior. Additionally, token economy is also in accordance with Skinner’s idea that a person is motivated to behave in a certain way if their behavior attracts favorable response. Tokens will be issued when a person engages in desired behavior and can be redeemed at a given time (Olson, 2015; B. F. Skinner, 1963).

Further, Skinner’s theory included the important concept of operant learning theory, which will be useful in this study. Conditioning requires that learning is conducted in such a way that information is easily dispersed to students (Olson, 2015). Another important aspect of the theory is that the operant strategy has three important components: reward, schedule for the reward, and timing of the reward. Usually rewards are divided into primary and secondary rewards. Primary rewards are those that do not require any specialized skill to be effective, such as food items. On the other hand, secondary rewards are acquired through long-term use. For example, the rewards in token economy are not direct, and students only earn tokens to be redeemed at a later time (Olson, 2015).

There are various ways in which Skinner’s theories have been fused into the education system today. Although the use of reinforcement to reward desired behavior was in existence before Skinner, much of what is adopted in schools relies on his ideologies. Many teachers employ operant conditioning and rewards to influence good behaviors in students (Olson, 2015). Hence, this theory is useful in laying a basis for token economy as an effective intervention (Olson, 2015). Although Skinner’s theory generally applies to all students, it will greatly shape
the thought on examining the effectiveness of token economy on challenging behavior for students with EBD.

Additionally, when discussing token economy, the Premack concept is relevant. This concept was developed by David Premack in 1965, based on Skinner’s idea that each person has a certain degree to which they desire different rewards. Premack proposed that low-probability performance should be rewarded by granting access to a high-probability performance (Michael, 2017). For example, for a student who loves playing with toys and detests sitting quietly in class, the former behavior is high probability while the latter is low probability. Hence, a teacher may only allow this student to play with toys if he/she sits quietly at his/her desk. To apply this concept, educators have the task of finding behaviors that students prefer doing in their free time, since such behaviors are highly probable and can be used to reward desirable behavior over undesirable ones, such as following rules in the classroom.

Social Learning Theory

Another relevant theory that this study relies on is the social learning theory as propounded by Albert Bandura (Sallis et al., 2015). This theory states that individuals learn behavior by modeling those around them. Specifically, it asserts that children can learn positive behaviors by observing peers and adults performing these behaviors (Tumangday, 1977). In this theory, there is a relationship between the cognitive ability of a person, their behavior, and their surroundings. For a person to effectively model behavior, they must be attentive, capable of retaining observed behavior, able to reproduce such behavior, and motivated to do so (Sallis et al., 2015). The most relevant aspect of this theory is the motivation. This is because a person can recall an incentive that gives them a reason to act in a certain way. Social learning theory is relevant to this study because it provides a connection between cognitive and behavioral theories.
(Sallis et al., 2015). The aspect of incentives is also useful, since it validates the use of token economy to enhance desire behavior (Sallis et al., 2015).

Kazdin (2012) states that token economy is a type of behavior change approach that is directed by operant learning theory. He argues that, in operant mechanisms, behavior change is motivated by a specific contingency. A certain outcome is contingent upon the performance of a certain action and is unavailable if the person fails to perform the action. He went on stating that token economy relies upon the concept of contingency since behavior change is affected by changing the contingency, a factor that controls a certain behavior. Kazdin also elaborates on the concept of reinforcement by stating that it is a reward system available for a person who engages in desired behavior. The concept of reinforcement is divided into two types: primary and conditioned. In conditioned rewards, the student learns how the reward system operates and the reward does not come automatically. Such rewards may include tokens, stickers, thumbs-up from the teacher, recognition, and so forth (Doll et al., 2013).

Behavior contracting theory is also very relevant in this study, because this study sets out to determine whether behavior contract is effective in reinforcing the target behavior for students with EBD. The theory, as reinforced by Kerr and Nelson (2010), states that teachers can sign contracts with students to enhance desirable behavior. They continued that it is based on the assumption that the consequences of a certain action control the behavior. Further, there is also another assumption that people in a contract tend to feel bound by their commitment to act in a certain way. This contract is between the student(s) and the teacher, and clearly sets out the behavioral objectives and the contingencies for a reward. Hence, the contract is made up of goals, consequences, rewards, and contingencies.
Empirical Literature Related to the Current Study

Behavior Contract

Behavior contract, also called contingency contract (J. O. Cooper et al., 2007), is a behavioral change strategy that teachers use to reinforce positive actions of students (Bowman-Perrott et al., 2015). A behavior contract is a document where both the student and teacher agree on certain rules to govern a target behavior (Bowman-Perrott et al., 2015; J. O. Cooper et al., 2007). Behavior contracts have been in use for more than 40 years to manage disruptive behaviors (Bailey et al., 1970; Bowman-Perrott et al., 2015). Behavior contract is marked by laying ground rules to which an individual student is required to abide. To be effective, a behavior contract requires input from both the teacher and the student. Such a contract may include a behavior to be performed and one to be avoided, or completion of a specific behavior and a delivery of a specific reward such as extra credits (J. O. Cooper et al., 2007).

A behavior contract has three components: stating a clear expectation of exactly what the teacher wants from the student or “the task,” the rewards that the student will receive when he or she follows the contract, and the task record (Bowman-Perrott et al., 2015; J. O. Cooper et al., 2007; Kidd & Saudargas, 1988). Figure 5 provides an example of a behavior contract. J. O. Cooper et al. (2007) have clarified what these three components are as follows. First, the task has four parts: the person who will complete the task and obtain the rewards, the task or the behavior the person has to perform, when this task should be completed, and how well the teacher wants the student to perform the task. Second, the reward description should include who will judge the completion of the task and deliver the reward, what the reward is, when the student will receive the reward, and how much reward the student can earn. Third, the task record will review the contract frequently and help the student stay focused until he or she achieves the goal and earns
the reward. The contract should be signed by the student and the teacher/the parent (J. O. Cooper et al., 2007).

**Figure 5**

*Example of a Behavior Contract*

![Behavior Contract Example](image)

*Note.* Adapted from *Applied Behavior Analysis* (2nd ed.), by J. O. Cooper, T. E. Heron, & W. L. Heward, 2007, Pearson.

Kerr and Nelson (2010) suggested that teachers can sign a contract with students with EBD to enhance desirable behavior. This is based on the theory that the consequences of a certain action can change a student’s behavior (C. H. Skinner et al., 2004). Both parties in the behavior contract tend to feel bound by their commitment to act in a certain way. The contract clearly sets out behavioral objectives and contingencies for a reward. Hence, a contract is made up of goals, consequences, rewards and contingencies (Kerr & Nelson, 2010).

In order to analyze the effects of behavior contracts, Bowman-Perrott et al. (2015) conducted a meta-analysis study focused on single case research studies on behavior contracts to
decrease inappropriate behaviors. The study analyzed the behaviors of 58 children aged 5 to 21. Results of the study have shown that behavior contracts were effective in reducing undesired behaviors in children from all grade levels regardless of their gender or disability. However, results also suggested that behavior contracts are not necessarily effective in increasing desired behavior. Additionally, the researchers also found that behavior contracts had positive impacts on the students’ academic performance (Bowman-Perrott et al., 2015).

Advantages of Behavior Contracts

Strahun et al. (2013) have pointed out a few advantages of using behavior contracts. When being used consistently, they allow all participants, including students, teachers and/or parents, to follow a certain organized routine. Students and teachers would negotiate the terms, so the desired goal is mutual, which decrease resistance from students. The contract is simple, flexible, and can be reviewed over a certain period of time to create room for improving behavior. Lastly, behavior contracts allow students, parents and/or teachers to proactively take part in the behavior change process.

Effectiveness of Behavior Contracts

Students with EBD have been participants in much research investigating the effectiveness of behavior contracts (Ruth, 1996). Behavior contract is not an expensive strategy and can be adjusted for use in different settings such as school and home (Houmanfar et al., 2008). Behavior contracts have also been effective in decreasing inappropriate and disruptive behaviors, and in promoting new, appropriate behaviors in their place (Bowman-Perrott et al., 2015; De Martini-Scully et al., 2000).

Mruzek et al. (2007) analyzed perceptions of both educators and students regarding the use of rules and their influence on school behavior. They tested a contract between 10 middle
school students and their teachers over a period of 36 weeks. The students and teachers kept reports, which were analyzed on a weekly basis at a conference steered by the students. Data were then analyzed using two standard deviation statistical tests. The researchers recorded an increase in positive student behavior and a substantial decrease in disciplinary referral, as shown by nine of the 10 children.

In another study, Mruzek et al. (2007) examined effects of a behavior contract and agreed on the ease of using it. Participants included two elementary students: one with Asperger’s syndrome and the other with an emotional disorder. Participants demonstrated disruptive behaviors during the instructional time, including tantrums and verbal disruption. The researchers implemented a behavior contract, which required both teacher and students to meet twice a day to talk about the contract and to agree upon rewards. Both participants showed an immediate decrease in their disruptive behaviors. Therefore, this study reported that behavior contract could decrease disruptive behaviors.

Wilkinson (2003) used a behavior contract with first-grade students to decrease disruptive behaviors, which included fighting with peers, not completing assignments, being off task, not complying with the teacher’s requests, and having verbal outbursts. The teacher agreed with the students in the contract that the students had to comply with the teacher’s requests, follow the teacher’s instructions, and interact appropriately with peers to earn the reward he or she likes, along with earning social praise. The results of the study showed a decrease in disruptive behaviors when the contingency contract was used, and disruptive behaviors remained low during the follow-up phase.
Token Economy

Token economy is considered a positive reinforcement technique; tokens can be in the form of tickets, plastic chips, or fake money. These items can be exchanged for desired items such as food, markers, or books (Gunter et al., 2002). The teacher can pick the reward or have the students vote for it. Token economy or token reinforcement is typically used to motivate people to accomplish desirable behaviors while not performing disruptive behaviors (Gunter et al., 2002; Kamps et al., 1999).

Ryan et al. (2008) indicated that the teacher can use consequence-oriented intervention strategies such as token economy, behavior contracting, bonus, feedback and contingency reinforcement to manage challenging behavior. Sometimes teachers may award extra free time to students who accomplish tasks within the required time. In other cases, teachers can use behavior contracts, which involves setting behavioral rules, and a student is rewarded for adhering to them. Teachers need to provide students with immediate feedback to allow them to gauge progress.

Definition of Token Economy

Token economy is a behavioral change system that uses tokens to help individuals with certain disorders increase desirable behaviors and decrease inappropriate behaviors (Kazdin, 2012). The systems have backup reinforcements in which people exchange their tokens for food, tangible items, or extra playtime (Doll et al., 2013). Kazdin (2012) argued that in operant conditioning behavior change occurs because of a specific contingency. Essentially, a token economy is a strategy used in classroom management by which a student earns tokens for good behaviors in the form of chips, fake money, or other tokens (Simonsen et al., 2008). Further, the concept of token economy is reliant upon the concept of contingency, since behavior change is
affected by changing the contingency, a factor that controls a certain behavior (Fiksdal, 2014). Fiksdal (2014) elaborated on the concept of reinforcement by stating that it is a reward system available for a person who engages in the desired behavior.

When it comes to education, intervention specialists believe that the objective is to come up with teaching strategies that are pleasant and effective for each student (C. H. Skinner et al., 2004). The authors assumed that the most efficient way to modify behavior was by changing the environments (C. H. Skinner et al., 2004). Their main ideology was the use of reinforcement to influence desired behavior. Behavioral change is an outcome of a person’s reaction to events that take place in his or her environment (Olson, 2015). Ideally, when a certain favorable response is rewarded, a person is motivated to give the same response in the future (Olson, 2015). C. H. Skinner et al. (2004) proposed the use of reinforcements, such as extra credits, edibles, praise, and free time, to change certain behaviors. They suggested that educators should employ the use of rewards to reinforce good behavior.

Token economy has been in use for centuries (Doll et al., 2013). In essence, studies have proven that token economy is effective where the rewards are exchanged for certain ultimate reinforcers such as food (Gunter et al., 2002). The earliest case reported of a token system in school was in the seventh century, when a monk gave small rewards to children who mastered their prayers (Doll et al., 2013). Later in the 1100s, rewards such as honey and nuts were used by teachers to motivate students to learn (Doll et al., 2013). In the 1800s, the monitorial system was introduced to the United States (Doll et al., 2013).

**Effectiveness of Token Economy**

Several studies have determined the successful application of token economy with different populations across different settings. The strategy has shown positive effects in students
with emotional and behavioral challenges (Cavalier et al., 1997; Soares et al., 2016). Token economy has been effectively used across different grade levels, school populations and behaviors (Cosgrave, 2017; Doll et al., 2013; Fiksdal, 2014; Kazdin, 1982; McLaughlin & Williams, 1988; K. D. O’Leary & Drabman, 1971; S. G. O’Leary & O’Leary, 1976; Williams et al., 2001). Regarding grade levels, token economy was proven effective with students from preschool age to college (Cosgrave, 2017). Kazdin (2012) highlighted factors that might influence the effectiveness of token economy, including the delay between an action and reward, the value of the reward, and the schedule of rewards. For instance, token economy is more effective when a reward is given immediately after an action, as opposed to later. The desired result cannot be achieved if these factors are not taken into consideration (Gunter et al., 2002).

Marion et al. (2012) studied the value of token economy and its effectiveness with students with autism. A multiple-baseline design across participants was used to examine the effectiveness of a practice for teaching children how to ask “Where?” Participants were three children diagnosed with autism and EBD participating in an ABA program, which consisted of consequences for correct responses when they answered the question “Where?” The authors found that the participating students with emotional disorders were able to display and generalize learned behaviors in different settings and maintained them up to 4 weeks after the intervention ended.

Additionally, Maggin et al. (2011) conducted a systematic review to determine the effectiveness of token economy involving students with EBD to see whether token economy increased desired behavior in these students. Results of the study clearly reported that students with EBD showed more appropriate behaviors and their inappropriate behaviors decreased. Likewise, Doll et al. (2013) published a recent review on token economy. Their research
involved both online and physical searches in well-recognized scholarly databases. They used various search terms aimed at providing material on token economy in relation to school setting. Doll et al. (2013) identified studies that proved the effectiveness of token systems when applied to both groups and individuals from different settings. Essentially, the study found that token economy was effective on various levels of education systems from pre-school to university level (Doll et al., 2013). The researchers acknowledged that there were few peer-reviewed studies on students with EBD in recent years. The existing literature on token economy was from many years back. Conducting a review to provide a recent outlook on the subject was still useful. The researchers found that previous research had proven the efficacy of token economy as a promising approach to improving behavior in educational settings (Doll et al., 2013). Most research on token economy advocated for the use of token systems and stated that they have a positive impact on the individual, schools, and community at large (Doll et al., 2013) and the token system is more effective in improving on-task behavior than other treatments (Fiksdal, 2014).

Parsonson (2012) studied many EBP related to classroom management. The author researched strategies, including behavior games, peer supports, building relationships, and token economy. The study revealed that token economy presented one of the most effective strategies compared to other strategies. Token economy uses praise along with direct positive reward when the student’s behavior is appropriate. Using praise allows the student to know what he/she needs to follow to get the reward. This helps increase the chance of reinforced behaviors being repeated in the future. Parsonson confirmed that token economy is an EBP that helps teachers change undesired behavior through positive reinforcement.
Advantages of Token Economy

Research has shown that token economy is easy, effective, and simple to use (Sugai & Horner, 2002). Cosgrave (2017) also explored various advantages of using token economy, noting that it masks the delay between the desired response and the reinforcement. Usually, a token is given to a student who can later redeem it for tangible rewards. Hence, between the time of attaining the desired outcome and when the student gets the actual reward, the student still feels that they have achieved something through the tokens. Second, token economy is flexible, allowing for the provision of reinforcement from time to time. Third, it can be utilized to maintain desired behavior for a long period, especially where the rewards cannot be procured immediately. Additionally, tokens can be provided immediately after a favorable response, due to its structured nature, token economy is characterized by high consistency levels (Cosgrave, 2017). Doll et al. (2013) also mentioned that token economy is a practical intervention that can be used with different behaviors and in different settings. In summary, token economy is an effective intervention to decrease undesired behaviors in the classroom (Higgins et al., 2001).

Important Aspects of Token Economy

One of the important aspects of using token economy is that it involves three important characteristics of the operant strategy: reward, schedule for the reward, and timing of the reward. Further, rewards are divided into primary and secondary categories. Primary rewards are those that do not require any specialized skills to be effective, such as money, credit, or food. Secondary rewards are acquired through long-term behavior. For example, the use of token economy is not immediate, and students can only earn tokens to be redeemed at a later stage (Olson, 2015). Researchers have also proposed that low-probability performance should be rewarded by granting access to a high-probability performance (Michael, 2017). For example,
students who love playing with toys and not sitting quietly in class can be granted access to the
toys by the teacher, but only if they sit quietly at their desks. The former behavior is a high
probability, while the latter is a low probability.

In a systematic review, Maggin et al. (2011) did a meta-analysis to assess the measurable
strength of the outcomes and thereby determine the effectiveness of token economy, specifically
for students with EBD. They concluded that the existing studies did not provide enough evidence
to prove the token system is the best practice. However, they acknowledged coming across
several quantitative studies that did approve the token system as an evidence-based practice. J.
O. Cooper et al. (2007) argued that the effectiveness of token economy depends highly on the
significance of these backup or secondary reinforcements for a specific child.

Ryan et al.’s (2008) literature review on effective teaching strategy for children with
EBD divided strategies into three mechanisms: peer-mediated, teacher-mediated, and self-
mediated. The relevant part of the study relates to teacher-mediated strategies in which the
teacher had control over the educational process and was therefore able to dictate the
consequences of the undesired behavior. The authors reported that the teacher-mediated
strategies enabled the teacher to intervene and control undesired behavior before it resulted in
poor performance. One of the most successful teacher-mediated strategies used was token
reinforcement (Ryan et al., 2008).

Doll et al. (2013) conducted a literature review on the use of token economy in different
settings such as schools and communities. They searched various online databases such as
Google Scholar and EBSCO, using major terms such as token system, classroom management,
and behavior modification. They discovered that the token economy system had been in use for
many decades in a variety of settings. The study concluded that to effectively implement token
economy, it is important to understand the function of the behavior, the variability of token economy’s use, and how to use and manipulate the conditions of token economy to serve students with EBD in both home and school settings (Doll et al., 2013).

**Behavior Contract and Token Economy in Treating EBD Respectively**

Many behavior management systems and behavioral interventions are used by teachers every day in their classes (Wheeler, 2017). Parsonson (2012) studied EBP and classroom behavior management strategies including “the good behavior game, noise management, peer support, managing transitions, enhancing engagement, relationship building, and token economies” (pp. 18–20). Their study, as well as that of D. D. Smith and Tyler (2009), showed that token economy is an EBP that helps to change behaviors using positive reinforcement and therefore decreases negative behaviors.

Token economy uses praise and reward to reinforce appropriate behaviors (Parsonson, 2012). Praise allows the child to know precisely what he or she has done to deserve a token and which behavior to repeat (Michael, 2017). The author suggested that teachers should praise the child immediately after the instance of appropriate behavior. The token is then given when behavior is worthy of praise. Parsonson (2012) stated that teachers should focus on constructing motivation in the child. To do this, external motivators, such as a token economy, become the first and best choice. Token economy has been successful within different grade levels, school populations, and school behavior types (Carnett et al., 2014; Kazdin, 1982; McLaughlin & Williams, 1988; K. D. O’Leary & Drabman, 1971; S. G. O’Leary & O’Leary, 1976; Parsonson, 2012; Williams et al., 2001; Wheeler, 2017).

The token systems also have secondary reinforcements when people exchange their tokens for food, activities, or extra playtime (Doll et al., 2013). When using this approach,
certain behavior is rewarded while others are diminished. Ideally, the approach is meant to encourage a person to behave well in a normal environment using learned behaviors (Doll et al., 2013). The education system needs to use intervention mechanisms to ensure that EBD effects are minimized so that children can have access to quality education (National Research Council and Institute of Medicine, 2009). Although other methods can be used to deal with disruptive behaviors, token economy is one of the most effective ones (De Martini-Scully et al., 2000).

Disruptive behaviors are associated with lessening and negatively impacting the amount of instructional time, since teachers have to spend a substantial amount of time disciplining or controlling disruptive behaviors at hand (Gest & Gest, 2005; Kauffman, 2001; Reid et al., 2004). Other negative effects associated with disruptive behaviors are long-term, include suspension or expulsion from school, dropping out of school, and having low grades (Collins et al., 2018; Flannery et al., 2014; Lum et al., 2017). Students with EBD may persistently engage in overt and covert acts such as vandalism, verbal outbursts, or withdrawal (Garner et al., 2014). Consequently, these behaviors affect the academic performance of all students (Lane et al., 2005). Students with EBD also experience poor academic results due to increased absence from school, hence failing course work and possibly dropping out of school (Wehby et al., 2003). This may cause concern for everyone involved in the child’s life, especially teachers and parents (Kauffman & Hallahan, 2011).

This concern must be addressed to improve a student’s education as well as teacher satisfaction. A study conducted by Lum et al. (2017) investigating the effects of disruptive behaviors in students with EBD revealed that challenging behavior is a major obstacle for their future success. Disruptive behaviors interfere with the learning process of every student in the classroom by disrupting their focus. Lum et al. (2017) and Collins et al. (2018) also noted that
such behaviors discouraged and frustrated teachers due to their negative impacts on instructional time. Other studies have confirmed these findings and agreed that managing a high-frequency challenging behavior is overwhelming, not only for beginning teachers but also for veteran teachers (Collins et al., 2018; Flannery et al., 2014; Lum et al., 2017). As noted above, it is unfortunate that most educational centers have not been able to mitigate inappropriate and undesirable behaviors in students with EBD, despite of widely known behavioral interventions to decrease such behaviors such as token economy and behavior contract strategies, which can be used jointly or separately (Bruhn et al., 2015).

A master’s thesis (Fawaz, 2001) was conducted in KSA with individuals with intellectual disabilities, Down syndrome, and learning disabilities. The study included interviews with special education faculty members and teachers at educational centers, indicating that students with EBD are of major concern and in need of supports. Token economy is used in KSA by students with learning and intellectual disabilities to decrease hyperactivity and improve the attention span. Fawaz (2001) used token economy with timeout to decrease aggressive behaviors in 30 students with intellectual disabilities aged between 10 to 14. These students were chosen according to records of their aggressive behaviors by their teachers and divided into three groups: one control group, a group that was given token economy, and a group that was given a timeout. Result showed that aggressive behaviors of students in the second group who receive token economy decreased significantly ($\alpha = 0.05$).

Another master’s thesis (Al-Asraj, 2006) investigated the effects of reinforcement in the form of token economy to control challenging behaviors such as aggression displayed by women with Down syndrome in Riyadh and positive results were achieved. Fawaz and Obaidat (2001) also conducted a study of students with learning disabilities and ADHD; the goal of the study
was to improve attention level and decrease hyperactivity with the participants. Thirty male students in the study were divided into two groups; one used token economy only, and the other used the combination of token economy and response cost. The result revealed that the second group showed a significant increase in the level of attention and a decrease in hyperactivity (Fawaz & Obaidat, 2001). The same two procedures were used with students with intellectual disabilities to decrease aggressive behaviors. The study showed that reinforcement is more effective than punishment in decreasing aggressive behaviors among students with intellectual disabilities (Alqarni, 2012).

A review of existing literature in this area indicates major variations in terms of the effectiveness of the two methods (token economy and behavior contracts) in decreasing inappropriate behavior among students with EBD. As argued by some researchers, these inconsistencies may have resulted from the fact that appropriateness of behavior is a relative term. That is, what is considered inappropriate behavior in one setting may not be inappropriate in another setting, since behaviors are judged in the context in which they occur (Harlan & Rowland, 2002; Ivy et al., 2017).

**Literature Relevant to Combining Token Economy and Behavior Contracts**

Although there is ample literature examining the effectiveness of token economy and behavior contracts, only a few studies have combined the two interventions to show their effectiveness in students with EBD. Combining behavior contract and token economy in decreasing disruptive behaviors is suitable because the two concepts are thought to assist each other (Bowman-Perrott et al., 2015). When a student behaves in line with the contract, he or she will be awarded a token that can be redeemed at a certain time later. Penalties are also set to punish undesired behavior (Bowman-Perrott et al., 2015). Combining the contingency contract
with token economy has social importance in improving academic performance, decreasing social rejection, and disruptive behaviors (Bowman-Perrott et al., 2015).

Although there are limited studies focused on the combined use of behavior contract and token economy, they do offer important information, particularly regarding the social impacts of disruptive behaviors. For example, Navarro et al. (2007) reported strong effects when they combined behavior contracts and token economy in three children (two 14-year-olds and one 8-year-old) who exhibited a wide array of activities, including noises of all kinds, crying during instruction, material destruction, peer aggression, and verbal outbursts, which affect the learning process. The intervention package combined contingency contracts and token economy was applied for 4 months with follow-up. The results showed a change of behavior in the school environment, as reported by teachers, and a significant decrease in the occurrence of insults, damage to school materials, and inactivity during class. Combining contingency contract with token economy has social importance in improving academic performance, decreasing social rejection, and mitigating disruptive behaviors (Navarro et al., 2007).

J. O. Cooper et al. (2007) laid a basis for the combination use of token economy and behavior contract. Approaches used in classroom management combined both reward systems and rule-based approaches. In the case of token economy, certain rules must be set to ensure the reward system is effective. J. O. Cooper et al. argued that the effectiveness of token economy depends highly on the significance of backup reinforcement for the targeted child. J. O. Cooper et al. justified combining behavior contract and token economy to address disruptive behaviors in students with EBD and believed that token economy is encompassed in behavior contract, since behavior contract is a contingency contract that sets out the relationship between a certain behavior and the resulting reinforcement (Simonsen et al., 2008).
Both behavior contract and token economy have been proven effective in improving behaviors of schoolchildren with EBD (J. O. Cooper et al., 2007; Navarro et al., 2007; Simonsen et al., 2008). However, they both have limitations when utilized separately. For instance, Bowman-Perrott et al. (2015) found behavior contracts decreased undesired behaviors but did not correspondingly increase desired behaviors in their study. Also, Maggin et al. (2011) stated that although some studies suggested that token economy is effective, there was not yet enough evidence to determine token economy as one of the best practices. The combination of these two strategies however could further improve outcomes because they support and reinforce each other (J. O. Cooper et al., 2007; Simonsen et al., 2008). The combination of both strategies was also effective in decreasing social rejection by others and adult crimes, and improving academic performance (Navarro et al., 2007; Simonsen et al., 2008).

**Chapter Summary and Literature Gap**

In summary, chapter two has presented a critical literature review on token economy and behavior contract. Results from numerous studies have shown that the combination of both intervention package can promote better behavior change. However, their effects are influenced by other factors, such as the context in which a study was conducted. This could explain why the interventions were effective in some settings but not so much in others. Ivy et al. (2017) proposed that “appropriateness of a behavior” is relative from one setting to another (be it cultural, racial, religious, regional, or institutional), since behaviors are judged in the context in which they occur. These findings were echoed by Cicourel (2017), who believed that appropriateness of behavior is defined by the culture of the organization, institution, or even the society at hand. The society is further influenced by both written and unspoken rules and regulations.
Based on this argument, it is fair to postulate that the effectiveness of these two behavioral interventions reviewed cannot be determined universally. In other words, it is not possible to come up with a general conclusion that token economy intervention, for example, is universally effective in decreasing disruptive behaviors among students with EBD, since effectiveness differs from one context to another. Therefore, no reliable conclusions can be drawn concerning the effectiveness of the two interventions in decreasing out-of-seat behaviors in KSA when used separately or jointly, unless an experimental study is conducted in that context. The disagreements in the literature concerning the effectiveness of the two techniques, as well as philosophical assumptions explained above, validate the need for conducting a primary study in KSA to evaluate the effectiveness of combining behavior contract and token economy intervention in decreasing disruptive behaviors in students with EBD.

Besides the inconsistencies in the literature, there is limited empirical literature on the efficacy of using two interventions jointly. At the time when the present study was proposed, there had not been a published study on this topic involving students with EBD from Saudi Arabia. To fill the gap in the existing literature, there is a need to conduct such a study to determine whether using two interventions jointly is effective in decreasing out-of-seat behaviors, which is exactly the purpose of this study. This study aims to introduce cost-effective EBP from the United States to Saudi Arabia.
Chapter Three

Methodology

Overview

This chapter describes the research method used in this study. This chapter presents a description of the research design, followed by a description of the setting in which the study was conducted and characteristics of the participants. Descriptions of the independent variable, dependent variables, materials, interobserver agreement (IOA), treatment integrity, procedures, and data collection are provided afterwards. Instead of focusing on the efficacy of one single intervention, this study is the first in Saudi Arabia to evaluate the effectiveness of an intervention package that combines both behavior contract and token economy. The current study was conducted to answer the following research question: is the intervention package that combines behavior contract and token economy effective in decreasing out-of-seat behaviors in students with EBD in Saudi Arabia?

Participants

The participants for this study consisted of three students with EBD, whose names were: (a) Omar, male, aged 7; (b) Hassan, male, aged 7; and (c) Jawaher, female, aged 8. At the time of the study, the students were all residents of Alahasa City, Saudi Arabia. Both Omar and Hassan’s first language is Arabic, and Jawaher’s is English. The three participants attended first grade in the same school but in different classrooms. The students were selected because they had been identified with EBD and regularly displayed out-of-seat behaviors when the class was in session, and had difficulty establishing or sustaining relationships with peers due to these behaviors, as reported by their classroom teachers. To avoid selection bias, students with similar backgrounds
were selected: all three selected students live with their biological parents and come from middle-class families.

Omar’s out-of-seat behavior was disturbing for both the teacher and his classmates. For example, when the teacher asked the rest of the class to stay seated, students would refuse, pointing out that Omar was out of his seat most of the time. As a result, the performance of the whole class was being placed at risk due to Omar’s distracting behavior. However, the teacher could not pay much attention to him since she had 15 other students to take care of. In addition, he would read stories unrelated to the one assigned to the class, and he would even walk out of the classroom at times and refuse to return, forcing the teacher to lock the classroom when class was in session, simply to keep Omar inside. This behavior would become contagious, making it harder for the teacher to maintain control of the class.

Hassan left his seat excessively without his teacher’s consent. He neither participated in the group readings nor paid attention to the assigned reading materials. He preferred playing with the coloring pens and ignoring the teacher. Hassan was out of his seat so much that he caused a considerable distraction to the whole class. During the baseline period, the teacher did not give any particular attention to Hassan.

Jawaher used to leave her seat, usually with the assertion that she needed to go to the restroom, six times during the class session—even after the teacher had given her permission to go one time. The classroom teacher viewed this behavior as an effort on Jawaher’s part to avoid being in the class. Jawaher was born in the United States while her parents were international graduate students. She has found it hard to learn the Arabic language since her family returned to Saudi upon the completion of her parents’ studies. The teacher indicated that Jawaher was being bullied due to her lack of understanding of Arabic.
Table 1

Summary of Study Participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Age (Year)</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omar</td>
<td>7</td>
<td>Male</td>
</tr>
<tr>
<td>Hassan</td>
<td>7</td>
<td>Male</td>
</tr>
<tr>
<td>Jawaher</td>
<td>8</td>
<td>Female</td>
</tr>
</tbody>
</table>

Setting

The subjects for the current study were recruited from a private elementary school in the Eastern Province of Saudi Arabia. The school provides both general education classes and special education services. All the students at the school are Saudi citizens and the majority (75%) are female. The school serves both male and female students in the same institution, a rarity in Saudi Arabia. While it is a general education program, it also provides educational supports and therapy services to students with disabilities. All teachers at this institution hold a master’s degree. However, some teacher assistants hold a bachelor’s degree.

Research Design

The current study employed a single-case design (SCD) research method that incorporated multiple-baseline across participants. Single-case design is used to study the effects of intervention across multiple participants, multiple behaviors, or multiple settings (Coon & Rapp, 2018). Multiple baselines across participants design is suitable for a condition in which a single behavior or set of behaviors is subject to change or improvement among different participants (J. O. Cooper et al., 2007). The baseline is typically established through a series of
observations to determine what the normal behavior level of the subject(s) is prior to the intervention.

After the initial observation to establish the baseline, the intervention is applied at different times for different participants, behaviors, or settings (Coon & Rapp, 2018). Effects are determined when changes are observed that concur with the intervention (Coon & Rapp, 2018). This design allows the researcher to determine and validate the effectiveness of the intervention with two or more participants who exhibit the same behavioral needs (J. O. Cooper et al., 2007; Kazdin, 2011; Richards, 2018). Historically, this design was first used and described by Baer et al. (1968) as:

In multiple baseline technique, a number of responses are identified and measured over time to provide baseline, against which changes can be evaluated. With these baselines established, the experimenter then applies an experimental variable to one of the behaviors, procedure a change in it, and perhaps notes little or change in the other baseline. (p. 94)

Appropriateness of the Chosen Study Design

The chosen research design is commonly used for studies involving students with disabilities and specifically for examining special education intervention methods (Maggin et al., 2018). The multiple baselines across participants design was determined most appropriate for this study because it involved a small number of students and because the research plan was to establish the baseline for each student and then introduce the intervention in a staggered fashion, meaning the subjects would start the intervention at different times. According to Maggin et al. (2018), it is the most appropriate type of single-case design for this type of research structure.
The researcher observed the out-of-seat behavior of the three participants (Omar, Hassan, and Jawaher) to collect the data for this study. This specific design was chosen because behavior contract and token economy can have long-term effect on students, even after the intervention is removed. Therefore, using this design allowed the researcher to have control over the out-of-seat behavior and to determine whether the students were able to remain on seat over time by including a follow-up period (J. O. Cooper et al., 2007; Kazdin, 2011; Richards, 2018).

**Operational Definitions of Variables**

**Dependent Variable**

As an operational definition of the target behavior, leaving one’s seat without permission was defined as “moving beyond the explicitly defined boundaries in which the student is allowed to move, without getting permission from the teacher or paraprofessional” (Yell et al., 2014, p. 85). This was the dependent variable for this study. The researcher counted how many times the student left their seat during the Arabic (reading) class (within 30 minutes).

**Table 2**

*Target Behavior and Definition*

<table>
<thead>
<tr>
<th>Target behaviors</th>
<th>Operational definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaving seat or the classroom without permission</td>
<td>Defined as leaving the assigned area without permission from the teacher or moving beyond the explicitly defined boundaries in which the student is allowed to move, without getting permission from the teacher or paraprofessional.</td>
</tr>
</tbody>
</table>

*Note.* Adapted from *Evidence-Based Practice for Educating Students with Emotional and Behavioral Disorders* (2nd ed.) by M. L. Yell, N. Meadows, E. Drasgow, and J. G. Shriner, 2014. Copyright 2014 by Pearson.
Independent Variable

The independent variable in this research was an intervention package that combined both behavior contract and token economy together to decrease out-of-seat behavior. A behavioral contract was created individually for each participant. Each participant’s teacher signed the behavior contract with their student; the student would agree to follow certain rules to stay in seat and the teacher would agree to reward a token that could be redeemed for certain positive rewards when the student met these terms. The token economy, which was included in the behavior contract, was used as positive reinforcement in this study and involved plastic chip money (tokens) that the students could exchange for items that had been identified previously in the contract as suitable rewards.

Table 3

Behavior Contract for Omar

<table>
<thead>
<tr>
<th>TASK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of the student:</strong> Omar</td>
</tr>
<tr>
<td><strong>What is the task?</strong></td>
</tr>
<tr>
<td><strong>When?</strong></td>
</tr>
<tr>
<td><strong>How well?</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>REWARD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Who?</strong></td>
</tr>
<tr>
<td><strong>What?</strong></td>
</tr>
<tr>
<td><strong>When?</strong></td>
</tr>
</tbody>
</table>
How much? One token for each 10-minute interval. Omar can earn up to 3 tokens for each reading class (three 10-minute intervals, or 30 minutes). Redeemed at the end of class or at the end of the week. Initially, a token can be exchanged for a reward daily (at most three times a week); over time, exchange frequency will be decreased. Starting from week 5 of the intervention, token exchange will become only once a week after the last reading class for the week. When you, Omar, have three tokens, you may exchange them for three items on the reinforcer menu; when you have only one or two tokens, you may exchange for one item. When you do not earn any tokens, you will not be able to get any rewards.

Sign here:  -------------------   Date:  -------------------

Sign here:  -------------------   Date:  -------------------

Task Record

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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<tbody>
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</tbody>
</table>

Comments

Reinforcer Menu for Omar

Pick the reinforcement you would like to get:

1. A coloring book
2. 20-minute computer time
3. Modeling clay
Behavior Contract and Token Economy for Students with EBD

4. Stickers

5. A piece of candy

Table 4

Behavior Contract for Hassan

**TASK**

**Name of the student:** Hassan

**What is the task?** Remain in your seat.

**When?** During reading class.

**How well?** While seated during Arabic class, Hassan will demonstrate appropriate in-seat behavior by sitting with his feet on the floor and keeping all four legs of the chair in contact with the floor, needing no more than 1 prompt per 10-minute interval.

**REWARD**

**Who?** Teacher

**What?** Hassan will earn one token if he stays in his seat for every 10-minute interval.

**When?** After the reading class.

**How much?** One token for each 10-minute interval. Hassan can earn up to 3 tokens for each reading class (three 10-minute intervals, or 30 minutes). Redeemed at the end of class or at the end of the week. Initially, a token can be exchanged for a reward daily (at most three times a week); over time, exchange frequency will be decreased. Starting from week 5 of the intervention, token exchange will become only once a week after the last reading class for the week. When you, Hassan, have three tokens, you may exchange them for three items on the
BEHAVIOR CONTRACT AND TOKEN ECONOMY FOR STUDENTS WITH EBD

reinforcer menu; when you have only one or two tokens, you may exchange for one item. When you do not earn any tokens, you will not be able to get any rewards.

Sign here:  -------------------                               Date: --------------------

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Task Record

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<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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</tr>
</tbody>
</table>

Comments

Reinforcer Menu for Hassan

Pick the reinforcement you would like to get:

1. A coloring book
2. 20-minute computer time
3. Modeling clay
4. Stickers
5. A piece of candy
Table 5

*Behavior Contract for Jawaher*

**TASK**

**Name of the student:** Jawaher

**What is the task?** Remain in your seat.

**When?** During reading class.

**How well?** While seated during Arabic class, Jawaher will demonstrate appropriate in-seat behavior by sitting with his feet on the floor and keeping all four legs of the chair in contact with the floor, needing no more than 1 prompt per 10-minute interval.

**REWARD**

**Who?** Teacher

**What?** Jawaher will earn one token if she stays in her seat for every 10-minute interval.

**When?** After the reading class.

**How much?** One token for each 10-minute interval. Jawaher can earn up to 3 tokens for each reading class (three 10-minute intervals, or 30 minutes). Redeemed at the end of class or at the end of the week. Initially, a token can be exchanged for a reward daily (at most three times a week); over time, exchange frequency will be decreased. Starting from week 5 of the intervention, token exchange will become only once a week after the last reading class for the week. When you, Jawaher, have three tokens, you may exchange them for three items on the reinforcer menu; when you have only one or two tokens, you may exchange for one item. When you do not earn any tokens, you will not be able to get any rewards.

**Sign here: ** ------------------- **Date:** -------------------

**Sign here: ** ------------------- **Date:** -------------------
### Task Record

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**Comments**

### Reinforcer Menu for Jawaher

Pick the reinforcement you would like to get:

1. A coloring book
2. 20-minute computer time
3. Modeling clay
4. Stickers
5. A piece of candy
Materials

The materials used to collect data during the study included data collection sheets, pens, an iPad, the behavior contracts, and the reinforcers (rewards) that included coloring books, extra computer time, modeling clay, stickers, hand stickers, and candy. A data collection sheet was created for each participant, which gave a clear view of the intensity of their behaviors and this was used by the researcher to compare the results as the study progressed. An iPad was used to record each subject student three times a week during their reading class for the entire span of the study. The behavior contract, token economy, and a sample reinforcement menu were used during the intervention phase. To ensure that adequate data were collected, the researcher utilized both direct observation (during the baseline) and iPad video recordings (during the intervention and follow-up) for data collection.

Procedure

Recruitment of Participants

The researcher obtained Institutional Review Board (IRB) approval from Duquesne University before recruiting or contacting participants for the study. After IRB approval from Duquesne University, the researcher also contacted the Ministry of Education in Saudi Arabia to get approval to conduct the study in an elementary school that had students with EBD as potential participants in first grade in the Eastern Province of Saudi Arabia. After obtaining this approval from the ministry, the researcher met with the school principal first and then with three general education teachers (whose classes had students with EBD that could participate in the current study), the school psychologist, and the special education resource room teacher, to discuss what being the most disruptive behaviors in the school and identify students who met the criteria and might benefit from the intervention. The researcher asked the teachers what was
considered as the most disruptive behaviors and the most pressing one in their classrooms to address. The general education teachers all agreed that out-of-seat behavior was the one in their first-grade classrooms. It had negative effects on classroom management and on the typically developing peers of students with EBD.

To implement the intervention, the researcher therefore asked the teachers to identify students who left their seats most often during reading class to recruit qualified participants for this study. The researcher then explained the intervention to the three classroom teachers who had agreed to participate. The researcher described how the intervention package had the potential to decrease out-of-seat behavior. In the next step, the researcher trained the teachers on how to implement the intervention package of token economy and behavior contract.

Given the young age of the students, the researcher explained the goals and nature of the study, as well as how the intervention worked with both the students and their parents. They were invited to participate in the study and could ask any related questions before they signed on the informed consent forms. The researcher emphasized that participation was totally voluntary. They were also informed that their privacy and that of their children would be protected and all information would be kept confidential. To achieve anonymity and protect participants’ privacy, each child was assigned a pseudonym instead of using their real names.

After the consent forms had been collected, the behavior contract was drafted by a team that included the researcher, general education teachers, and school psychologist. The researcher discussed possible reinforcement for each student with the team and met with the target students to identify several appropriate reinforcers that each participant indicated they preferred. In this study, the researcher included a reinforcer menu with different tangible items that the students could pick from as reinforcers, including as coloring book, extra computer time, modeling clay,
stickers, or a piece of candy. The tokens used in this study were plastic coins that could be exchanged for items of value (the reinforcers). The behavior contract for each subject was presented under “independent variable.”

Data Collection Procedures

The study lasted for about three months, including the baseline, intervention, and follow-up. This study began with the researcher directly observing and documenting the baseline performance of out-of-seat behavior for each subject. For this part of the study, the researcher was situated out of sight of the students but still in a place where she could observe the participant clearly to document all incidences of out-of-seat behavior. In keeping with the staggered design of multiple baseline across participants, initially only one student (Omar) received the intervention, while the other two (Hassan and Jawaher) remained at baseline and waited for their turns to receive intervention. Omar’s out-of-seat behavior decreased immediately after the intervention was introduced. When his performance became steady, the intervention was extended to Hassan next. This same procedure continued until all three participants received the intervention. The effect of the intervention was determined when a change in each participant’s out-of-seat behavior was achieved and only after the intervention was implemented.

Baseline

The baseline observation was conducted by the researcher directly in three different general education classrooms at the same school. Each participant’s baseline observation lasted for 30 minutes and each baseline observation was also video recorded. The researcher counted how many times (using event recording approach) the student left their seat for each 30-minute class period during their reading class. Figure 6 was the data collection sheet used in the study. The researcher conducted baseline observation three times a week. The researcher would make a
check mark each time the participant left their seats during the 30-minute observation period during their reading class. This data collection method was easy without any interference to class activities or instruction. When baseline data became steady, intervention were offered to the first student (Omar), while the other two students remained in baseline.

**Figure 6**

*Data Collection Sheet*

<table>
<thead>
<tr>
<th>Date of Observation/ Setting of Observation</th>
<th>Time Period of Observation</th>
<th>✓ for Each Occurrence of Out of Seat Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 12, 2020/ Reading Class</td>
<td>9:00 AM - 9:30 AM</td>
<td>✓✓✓✓✓✓</td>
</tr>
</tbody>
</table>

**Training Teachers on How to Implement the Intervention**

The researcher trained three classroom teachers respectively on how to implement the intervention package step-by-step. The training took place during the teachers’ breaks over 2 weeks, 5 days a week, for 30 minutes every day. The researcher explained the procedure of the implementation of the study and the rules for using the tokens.

Specifically, each 30-minute reading class was evenly divided into three intervals, so each interval was 10 minutes. If a student did not display any out-of-seat behavior for the whole 10-minute interval, he/she would earn a token. If the student remained in his/her seat for all three intervals, he/she could earn a total of three tokens for the whole 30-minute reading class. Students would not be able to earn any tokens for that interval if they left their seats once or more during a 10-minute interval. Additionally, if a student left his/her seat more than three times for any 10-minute interval during the 30-minute reading class, he/she would not be able to
earn any tokens for that whole 30-minute class, even if he/she did not display any out-of-seat behavior for the other two intervals. In other words, a student’s maximum number of out-of-seat behaviors for each 10-minute interval was three, if he/she wanted to earn any tokens for the day (class).

A data collection sheet and a behavior contract were given to the teachers, and the researcher explained these sheets to each of them. Each of the three students had to sign the behavior contract with their own classroom teacher and follow the rules on it. When the students followed the rules listed on their behavior contract, their teacher gave them a token every time they did not display out-of-seat behavior during their 30-minute reading class. The researcher always followed up with the teachers to answer any questions they might have.

**Intervention**

When the participants’ baseline data became stable for at least five sessions, the intervention was introduced first to Omar, while Hassan and Jawaher remained in baseline. This procedure was continued until all three participants (with whom baseline data were collected) had received the intervention. The effect of the intervention was determined based on a change in out-of-seat behavior for each participant being achieved and only after the intervention was introduced.

During the intervention, the teacher explained to each student what was expected from them regarding following the behavior contract to earn tokens that could be exchanged for a reward at the end of the class or the end of the week, depending on where they were in the intervention phase. The students had to fully understand the rules before signing. Specifically, each participant had to understand when they would receive a token and how often they would be able to exchange the token(s) for a reinforcer. The students would receive a token when they
did not leave their seat and adhered to the other directions written on their contracts for 30-minute during the Arabic reading class.

When delivering a token, the teachers would praise the student for earning the token (e.g., “I liked the way you stayed in your seat while you were reading.”). At the appropriate time (after reading class), the teachers would then allow the students to exchange their tokens for a reward from the reinforcer menu, including stickers, a piece of candy, a coloring book, modeling clay, or 20 minutes computer time. The researcher included a reinforcement menu on each student’s behavior contract, from which they could choose what reward they wanted to exchange by using their token(s). The menu was created based on the students’ personal preferences and what their parents or teachers suggested.

**Token Exchange**

Participants would receive a token right after each reading class whenever they did not leave their seat during the whole interval. The teachers would first allow them to exchange their tokens daily at the end of the class (three times a week), then decreased the exchange frequency to only once per week after the last reading class for the week. Specifically, for the first four weeks of the intervention, students were able to exchange the tokens they earned at the end of each reading class. One token could be exchanged for one item on the reinforcer menu. After the first four weeks, students could exchange only once a week, at the end of the last reading class each week. In this case, students who earned three tokens could exchange them for three items on the reinforcer menu, while students who had one or two tokens could exchange them for one item only. Students who did not earn any tokens were not able to obtain any reinforcer items. The reinforcer menu was changed on a weekly basis to include different candies, stickers,
coloring books, or modeling clay. Providing different kinds of reinforcers every week decreased the chance of satiation and maintained the effectiveness of the use of tokens.

As explained previously, once a decrease in out-of-seat behavior was obtained in the first participant Omar, the researcher started implementing the intervention on the second participant Hassan. Similarly, when the intervention began to show its effects and Hassan’s out-of-seat behavior decreased, the researcher would stop collecting baseline data for Jawaher, the third participant, and started implementing the intervention on her. During the intervention phase, the researcher no longer conducted direct observation; an iPad was used to record the whole class.

The researcher watched the iPad recordings of all three students’ performance in reading class, used the data sheets to collect their performance data and monitored each participant’s progress. The researcher then graphed the participants’ performance, so they were able to see their own progress over time represented on the graph. A critical part of the intervention was that every time when a participant earned a token, their teacher clearly explained why he/she was rewarded. All behavior rules were written clearly in the behavior contract and well-explained to each participant. Students would earn a token once they were able to remain sitting on their assigned chairs properly for each 10-minute interval during the reading class (participants can earn up to three tokens for the three intervals for the whole 30-minute class period). The students knew exactly what they needed to do to earn a token, and also knew exactly when they would receive a token as well as when they would be able to exchange the token(s) they earned for rewards. Making all aspects clear to the participants is essential.

**Fading**

Technically, it is important to have a plan to fade the use of token economy to avoid dependence on it. In this case, the researcher gradually thinned the use of token economy,
specifically reducing the number of times tokens were able to be exchanged (from daily to once a week), so the participants did not become dependent on it. Fading began in the 5th week after the student had shown steady low out-of-seat behavior. The teachers then had to transfer from artificial control (tokens/rewards) to natural control (such as giving praise or extra credit to the students). The teachers initially combined artificial control with natural controls to slowly fade the artificial controls; this was done to prevent the subjects becoming overly dependent on the artificial controls. The teachers ensured that each participant became highly proficient in the target behavior before the switch.

**Follow-Up**

The goal of this phase was to measure the sustainability of the effectiveness of the intervention package over time, after the intervention had been discontinued (Kennedy, 2005). The researcher followed up with the teachers four weeks after the intervention was concluded to see if the students’ out of seat behaviors were able to remain at the low level and to evaluate the long-term effectiveness of the intervention. The follow-up phase lasted for five sessions. During this phase, the participants no longer had a behavior contract, nor did they receive any tokens. The researcher again observed their out-of-seat behavior via iPad recordings. See Appendix F for a copy of the data collection sheet.

**Interobserver Agreement**

Interobserver agreement (IOA) “refers to the degree to which two or more independent observers report the same observed values after measuring the same events” (J. O. Cooper et al., 2007, p. 113). Specifically, when two or more observers obtain the same data, this increases the level of confidence in that data. Reporting the IOA supports the researcher in judging the relative believability of the data as trustworthy, understandable, and clear (J. O. Cooper et al., 2007;
According to J. O. Cooper et al. (2007), two observers should collect the data to ensure that both parties register (observe) the same behaviors in the subject. In the case where one of the observers is the researcher, the second observer must be trained in how to collect data and how to look for the target behavior. IOA is calculated by taking the number of agreements between the independent observers and dividing by the total number of agreements plus disagreements. The coefficient is then multiplied by 100 to compute the percentage of agreement.

For this study, an iPad was used to video record all phases. These recordings were then made available to the second observer. After consultation with the school principal, the researcher recruited a teacher from the school who was not previously involved in the study to serve as the second observer for the purposes of measuring IOA. She was the participants’ math teacher in that elementary school. This individual watched all video recordings across all phases and scored on the data collection sheet independently. Data collected were then compared to those of the researcher to calculate IOA.

**Treatment Integrity**

Treatment integrity refers to the degree to which the intervention is implemented as planned (J. O. Cooper et al., 2020). Reviewing treatment integrity data helps to determine if the intervention is being implemented as described and if any steps are missed. Interventions applied with a higher level of treatment integrity have a greater possibility of resulting in positive student
outcomes. A treatment integrity checklist (Appendix H) containing five components was created to measure how closely each step was implemented as planned across all phases of the study.

Thirty-five percent (35%) of all data across all phases of the study (i.e., baseline, teacher training, intervention, and follow-up) were used to calculate treatment integrity for Omar, 33% for Hassan, and 30% for Jawaher. Both the researcher and the second observer (the math teacher) reviewed these video recordings respectively and put down a “Y” on the checklist for a step that was observed, an “N” for a step that was not observed, and an “N/A” for non-applicable. Results of treatment integrity were shown in the result section below.

Data Analysis

As stated by Horner et al. (2005), analysis of single-subject research is most often conducted through a visual resolution of the data through graphic representation. For this study, a line graph was created to present the results visually. This graph included learning trends, variability, and level of improvement, which were then assessed. The mean performance of the students in baseline and intervention phases, was used to break down each student’s ability during a specific phase. By looking at the slope or trend line during each phase, one can identify points of rapid growth. Variability was considered whether individual participant’s performance varied from the mean line during each phase. When these were taken into consideration, a relationship between the independent and dependent variables was determined (Horner et al., 2005).

Validity of the Intervention

According to J. O. Cooper et al. (2007), there are two important facets to validity: internal and external. They continued, a single subject design reveals internal validity when the researcher is able to demonstrate that any changes happened in the dependent variable were
directly related to the independent variable, rather than to external factors. The researcher created specific guidelines for implementing the intervention in a way that would increase its effect and limit possible influences of external variables on out-of-seat behavior. Those guidelines were: (a) the observation took place in the reading classroom and not in a separate room; (b) during the baseline, the researcher directly observed the subjects from a hidden position where she was not visible to any of the students in the classroom, including the participants; (c) during the intervention and follow-up/maintenance phases, the researcher made sure to watch the iPad-recorded videos of the participants to document their out-of-seat behaviors in a quiet room with no distractions; (d) the way the researcher recorded intervention data (while she was watching the videos) was exactly the same way as she did during the baseline; and (e) the researcher ensured the teachers provided the participants with the reinforcements for the target behavior according to the set schedule for this that had been established. External validity affects how well the results of a study can be generalized to other populations, behaviors, or settings (Gast et al., 2014). In this study, factors such as small sample size, uniformity of subject characteristics and single setting limited generalizability. However, to mitigate these effects, a multiple baseline design across participants was used to increase the external validity of the study, as this design has the potential to increase generalizability to other participants, behaviors, or settings.
Chapter Four

Results

Overview

This study was conducted to examine the effectiveness of an intervention package that combined both behavior contract and token economy on out-of-seat behavior in three Saudi students with EBD. This chapter presents the results of the study across all phases and reports the effect size and IOA, as well as treatment integrity. The researcher counted the number of out-of-seat behaviors that occurred in 30 minutes during the (Arabic) reading class for each participant across all phases respectively. Results showed that during baseline, all three participants displayed frequent out-of-seat behavior (an average of 8 to 10 times for each 30 minutes) but an immediate reduction in the number could be seen once they started receiving the intervention, until they achieved 0 occurrences of such behavior and stayed there for the remaining of the intervention phase (see Figure 7). Four weeks later, the researcher found that all participants were able to always remain in their seats during reading class during follow-up phase. These results supported the hypothesis that the intervention package was effective in decreasing out-of-seat behavior in Saudi students with EBD. The following section reports each individual participant’s performance across phases in greater detail below.

The observation and recording of three participants with EBD took place in three different general education classrooms respectively. For the purpose of data collection, each observation lasted for 30 minutes during the Arabic reading class, three times a week. The goal of this study was to decrease the number of out-of-seat behavior that occurred. All three students exhibited a great deal amount of out-of-seat behavior when class was in session. All data across
these three phases are presented in the graph in Figure 7. Data from the baseline and intervention phases are also presented in Table 6.

**Figure 7**

*Participants’ Out-of-Seat Behavior During Baseline, Intervention, and Follow-Up Phases*
Omar’s Performance

Baseline

The first student, Omar, was observed for 30 minutes a day in reading class for 7 days (each day was counted as a session) during the baseline phase and intervention. Omar’s out-of-seat behavior was very distracting for both the teacher and his classmates. For example, when the teacher asked the rest of the class to stay seated, Omar displayed an averaged 9.9 out-of-seat behaviors during the baseline phase, ranging from nine to 11 counts per 30 minutes. This is a big number for such a short session. This behavior would become contagious, making it harder for the teacher to maintain control of the class. By the end of the 7th day, the researcher found that Omar’s baseline data were quite stable, with nine to 11 occurrences of out-of-seat behavior each session. Thus, the researcher decided to implement the intervention on Omar starting from Session 8.

Intervention

Right after the intervention was introduced, Omar’s out-of-seat behavior started to decrease immediately. Omar was out of his seat seven times on the 1st day of the intervention. Then the number of his out-of-seat behaviors decreased steadily during the intervention phase, rising again on only one occasion, on the 15th day of intervention, or Session 22, when he had three instances. Omar’s mother reported that he did not have enough sleep the night before, which might have impacted his behavior on that day. After that, Omar no longer displayed any out-of-seat behavior through the end of the intervention. As Figure 7 shows, during the intervention Omar’s number of out-of-seat behaviors decreased from six on the 1st day of intervention to zero on the 16th day of the intervention and remained at zero for the rest of the intervention phase. The average number of out-of-seat behaviors for Omar during the
intervention phase was 1.6 times per day/session. Compared to 9.9 times per day/session during baseline, Omar’s behavior improved greatly.

**Follow-Up**

Four weeks after the intervention, the researcher conducted five sessions (across 2 weeks) of follow-up on Omar. Results showed that he was able to remain in his seat at all times for all five sessions during reading class in follow-up phase. This indicated that the intervention package was effective in eliminating Omar’s out-of-seat behaviors.

**Hassan’s Performance**

**Baseline**

The second participant in this study was Hassan. Hassan’s baseline phase lasted for 14 days/sessions. He was out of his seat eight to 13 times a day, with an average of 8.4 times per session for the baseline phase. Hassan left his seat excessively without his teacher’s consent, and he neither participated in the group readings nor paid attention to the assigned reading materials. He preferred to play with his coloring pencils and ignored the teacher. Hassan was out of his seat so often during baseline, he caused a considerable distraction to the whole class.

**Intervention**

Hassan’s intervention phase lasted for 21 sessions. As Figure 7 showed, Hassan responded to the intervention very well. His out-of-seat behavior decreased to six times right after the intervention was implemented on Day 15 (or the 15th session). The number of out-of-seat behaviors continued to drop and reached four by the end of the 1st week of intervention (or the 18th Session). His performance kept improving and gradually reached zero times by Session 33. He was able to remain in his seat during reading class for the remaining intervention phase. The intervention yielded promising result on Hassan. During the intervention phase (for a total of
BEHAVIOR CONTRACT AND TOKEN ECONOMY FOR STUDENTS WITH EBD

21 days/sessions), Hassan was seen out of his seat zero to six times a day, with a daily average of 2.8 times per day/session. Compared to 8.4 times in baseline, Hassan made a great deal of progress after the intervention, too.

Follow-Up

Four weeks after the intervention, the researcher also conducted five sessions (across two weeks) of follow-up on Hassan. Hassan was still able to always remain in his seat for his reading class during follow-up phase. These results also clearly showed that the intervention worked well in eliminating Hassan’s out-of-seat behaviors.

Jawaher’s Performance

Baseline

During baseline, the researcher observed Jawaher for 18 days/sessions. She left her seat seven to 10 times a day/session, with an average of 7.9 times per session in baseline phase. The intervention started on Day 19 and lasted for 17 days/sessions.

Intervention

The intervention was administered in the same way for Jawaher as for the other two participants. Jawaher’s out-of-seat behavior started to drop to five times on the 1st day of the intervention. By the 2nd week in the intervention phase (specifically, on the 5th day/session after the intervention started), her out-of-seat behavior had improved drastically, and she was only out of seat once a session and maintained there for more than 2 weeks. By Week 3 (Session 29), she was able to reach zero times per day and stayed in her seat for the remaining sessions of the intervention phase. Her average number of out-of-seat behaviors was 1.3 per session for the intervention phase, compared to 1.6 for Omar and 2.8 for Hassan.
Follow-Up

Four weeks after the intervention, Jawaher was assessed for five sessions (across 2 weeks) to see if she was still able to remain in her seat during the reading class. Results showed that her performance during follow-up phase remained consistent, and she never left her seat once for all five sessions in follow-up phase. This indicated that the intervention package successfully helped Jawaher eliminate her challenging out-of-seat behavior.

Table 6
Participants’ Number of Times Out of Seat Across Phases

<table>
<thead>
<tr>
<th>Participants</th>
<th>Number of times out of seat per session</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Range</td>
<td>Average</td>
<td>Range</td>
</tr>
<tr>
<td>Omar</td>
<td></td>
<td>9-11</td>
<td>9.9</td>
<td>0-7</td>
</tr>
<tr>
<td>Hassan</td>
<td></td>
<td>8-13</td>
<td>8.4</td>
<td>0-6</td>
</tr>
<tr>
<td>Jawaher</td>
<td></td>
<td>7-10</td>
<td>7.9</td>
<td>0-5</td>
</tr>
</tbody>
</table>

Effect Size

An effect size is a quantity that describes the degree of difference from zero, which is the degree to which a treatment outcome varies from zero. In other words, an effect size distinct pre-treatment and post-treatment levels of performance and provide a measure of change seen through some variables of interest (Beeson & Robey, 2006). According to Parker and Brossart (2003) effect sizes can be calculated using seven different approaches. They pointed out that each approach has its own power to reveal effect, and effect sizes were different based on the approach used. One of these approaches is to calculate the percentage of non-overlapping data (PND).
Percentage of Non-Overlapping Data

Percentage of non-overlapping data (PND) is a signal of performance differences between phases, and it has long been an essential part of visual analysis in single-case research (Sidman, 1960). The degree to which data in the baseline (A) and intervention (B) phases do not overlap is(209,212),(946,226)(209,206),(946,219) an accepted indicator of the amount of performance alteration. Olive and Smith (2005) suggested that:

“the lowest baseline data point be identified for the behavior decrease studies. Next, the authors calculated the total number of intervention points that fell below the lowest baseline point. To obtain a percentage of non-overlapping data points, the number of non-overlapping points was divided by the total number of intervention points.” (p. 315)

In this study, the lowest baseline data point for Omar was 9, for Hassan 8, and for Jawaher 7. The PND was 0% for all three participants. Based on the graphs, there was zero overlap between baseline and treatment. In this research, the goal was to decrease the number of out-of-seat behaviors. The results showed that there were zero overlaps, which supports the effectiveness of the intervention in decreasing out-of-seat behaviors across the three students with EBD. See table 7 below for percentage of non-overlapping data for each student.

Table 7

Percentage of Non-Overlapping Data (PND) for Each Student

Omar:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$n_A$</td>
<td>the number of scores in the baseline phase</td>
</tr>
<tr>
<td>$n_B$</td>
<td>the number of scores in the treatment phase</td>
</tr>
<tr>
<td>$k$</td>
<td>the number of treatment phase scores that exceed the maximum score in the baseline phase</td>
</tr>
</tbody>
</table>

Calculate

$PND = 0.00\%$
Interobserver Agreement (IOA)

As mentioned previously, to calculate IOA, the researcher must have a second observer involved in documenting the behaviors. In this case, the math teacher was the second observer for the purpose of confirming the researcher’s observations. This teacher watched all video recordings (100%) of each participant’s performance in their reading classes (sessions) and recorded her findings independently. The IOA results varied across participants, but all were above 85%. For Omar, the average IOA score for all sessions across phases was 92% (ranging from 88% to 98%). For Hassan, it was 93% (range of 87% to 97%). For Jawaher, it was 95% (range of 92% to 98%). These numbers indicate a satisfactory level of agreement between the two observers.
Treatment Integrity

Treatment integrity for Omar was 99%, with a range of 95%-100%. The 95% score was based on the researcher’s performance in Omar’s intervention phase. The researcher forgot to follow the second item on the Treatment Integrity Checklist (Appendix H) in the intervention section: “Provide immediate verbal feedback on the performance.” Treatment integrity for Hassan was 99%, with a range of 95%-100%. The 95% score was based on the researcher’s performance in Hassan’s baseline phase where the researcher forgot to follow the third item on the Treatment Integrity Checklist (Appendix H) in the baseline section: “Do not provide verbal interactions with the participants.” Treatment integrity for Jawaher was 100%.

Summary of the Results

As data visually presented in Figure 7 and statistically summarized in Table 3, results of the current study clearly showed that the intervention package combining behavior contract and token economy successfully eliminated out-of-seat behaviors in three first-grade Saudi students. Four weeks after the intervention, all three participants were still able to always remain in their seats during reading class in follow-up phase. The teachers also noted that the intervention package was simple to understand and easy to implement with the target students.
Chapter Five

Discussion

The following chapter discusses the findings of the current study presented in Chapter 4 and describes how they compare to those of previous studies related to behavior contract and token economy. Additionally, this chapter addresses implications and limitations of the current study and makes several recommendations for future research.

Discussion of Research Findings

Behavior contracts and token economy are inexpensive and can be easily implemented to address challenging behaviors in students with EBD. Numerous studies have shown that these interventions are effective in reducing challenging behaviors in students with EBD in the United States, at various grade levels, involving different types of challenging behavior (Cavalier et al., 1997; Soares et al., 2016). The combination of behavior contract and token economy has been proven effective in improving students’ academic performance, reducing social rejection and insults by peers, decreasing inappropriate behaviors, and reducing damage to school property and inactivity during class (Navarro et al., 2007).

The current study is significant because the intervention package helped children with EBD in the context of Saudi Arabia directly decrease and eliminate a challenging behavior (being out of their seats in the classroom) and indirectly improve academic performance and social interaction while minimizing negative outcomes, giving them the same chances to succeed in education and in life as their peers have. Using behavior contract and token economy also helped teachers better manage their classrooms and save more time for class instruction, instead of spending time disciplining students. This study filled a significant gap in the literature and
confirmed that cost-effective EBP such as this could be introduced from the United States to Saudi Arabia.

The study involved three Saudi students with EBD aged 7 and 8 who were nominated by their classroom teachers due to their challenging behavior during reading class. Results of the study showed that the intervention package had a positive and significant effect, decreasing and eventually eliminating out-of-seat behaviors (as depicted in Figure 7). The students were able to sustain their performance in the follow-up phase, four weeks after the intervention. All data collected confirmed the effectiveness of the intervention. All three participants responded favorably to the intervention package. The teachers combined different reinforcers, such as verbal praise, with the intervention package, so that the students would not become dependent on receiving the tokens and obtaining the reinforcers, and positive effects could maintain on a long-term basis. Therefore, when the intervention was removed and the verbal praise continued, the desirable behavior remained while disruptive behaviors did not return. Overall, results of this study were similar to those of previous ones conducted in other settings (Carnett et al., 2014; Kazdin, 1982; Parsonson, 2012; Williams et al., 2001).

For example, the present study showed positive results similar to those achieved in a study by Navarro et al. (2007) that used the same intervention package on a different set of behaviors. This study also echoed J. O. Cooper et al. (2007) and Simonsen et al. (2008)’s research findings that both behavior contract and token economy were effective in improving the behaviors of schoolchildren with EBD in the United States. The findings were meaningful because token economy is an EBP that helps students change their behaviors by using positive reinforcement (D. D. Smith & Tyler, 2009). Many researchers have reported that using tokens as positive reinforcement is cost-effective for various students of different grade levels with various
types of challenging behaviors (e.g., Carnett et al., 2014; Kazdin, 1982; McLaughlin & Williams, 1988; K. D. O’Leary & Drabman, 1971; S. G. O’Leary & O’Leary, 1976; Parsonson, 2012; Williams et al., 2001; Wheeler, 2017). In most of these studies, researchers reinforced participants more often at the beginning of the intervention by rewarding or exchanging tokens more frequently; as the intervention moved forward, the reinforcement schedule would gradually thin, then slowly fade out. Additionally, token economy was usually used along with other natural reinforcers such as verbal praise. Verbal praise helps the learner understand accurately what they did to receive the token. This specificity allows the child to know which behavior to repeat in the future. This study used the same approaches to minimize participants’ dependence on the tokens and related reinforcers.

Similarly, behavior contracts have been used to successfully decrease a wide range of disruptive behaviors, including fighting with peers, not completing assignments, being off task, not complying with teacher requests, and verbal outbursts (Wilkinson, 2003). Out-of-seat behavior in this study was considered as one type of off-task behavior, or non-compliance with teacher requests. The results of the current study were also consistent with previous studies on the use of behavior contract. For example, Bowman-Perrott et al. (2015) and De Martini-Scully et al. (2000) reported that behavior contracts effectively decreased inappropriate and/or disruptive behaviors and promoted appropriate replacement behaviors in their participants.

The findings of this study also agree with those of previous studies that combined both behavior contract and token economy. The two methods have been found to reinforce and assist each other (Bowman-Perrott et al., 2015: Simonsen et al., 2008). As recommended by the existing literature, this study incorporated token economy into behavior contract and found that it clearly linked the agreement to abide by the contract to the receipt of tokens, and subsequently
the rewards for the three students (J. O. Cooper et al., 2007). Involving students with EBD in the process of constructing the behavior contract gave them more control and investment in the effort, which appears to further support the decrease in inappropriate behaviors and the promotion of appropriate ones (Bowman-Perrott et al., 2015; De Martini-Scully et al., 2000). The results of this study confirmed the strong effect of this approach.

**Other Potential Impacts of the Intervention Package**

This study lays the groundwork for other efforts. For example, researchers can consider using the same approach to target other challenging behaviors of Saudi students with EBD and to achieve positive outcomes in other areas such as social interaction and academic performance. The following sections discuss its potential impacts on these areas.

**Potential Impacts on Social Interaction**

While decreasing disruptive behavior of students with EBD was the primary goal of the intervention strategy, the effect on social interactions with peers and teachers cannot be disregarded, since the exhibition and subsequent mitigation of disruptive behaviors relate directly to how these children function socially in school. The teachers indicated that all three participating children had negative social experiences with peers before the intervention. In Omar’s case, his behavior was disruptive and distracting, and while his teacher might have felt that it was not worth the time to try to control it, his activities were being noticed and remarked upon by his peers. In the same way, Jawaher’s behaviors were thought to be related to how she was different from her peers in another way, in addition to having EBD, because she had been raised primarily speaking English, which already made her difficult in communicating successfully with her classmates. In Jawaher case, she was bullied less often by her classmates, which was also considered effective in improving her social outcomes. Hassan was the one who
originally exhibited the highest number of observed out-of-seat behavior in one session (13 times). It was so disruptive, it appeared that his teacher had entirely given up trying to address his issues. He seemed to be completely disconnected from the class before the intervention. However, by the end of the intervention, Hassan was able to remain in his seat for the entire class period. These results were consistent with those from past research that decreasing disruptive behavior can also decrease the social rejection often experienced by students with EBD (Navarro et al., 2007; Simonsen et al., 2008).

Similarly, all participants’ teachers admitted that before the study, they basically ignored these students’ disruptive behaviors and allowed them to do whatever they wanted. They believed that was easier than trying to spend time controlling or addressing these behaviors, since they had to take care of another 15 students in their classes. Frequent discipline of the target student could disrupt the flow of instruction. Other studies have also found this has been the common attitude of general education teachers when they have students with EBD in their classrooms (e.g., J. O. Cooper et al., 2007; Kazdin, 1982; Navarro et al., 2007; Simonsen et al., 2008). After the implementation of the intervention package, these three teachers indicated they were very positively impressed by the results of the combined strategies. Specifically, after they saw the positive results of the intervention, the teachers stated that their attitudes had changed, not only toward the use of interventions to address such issues, but also toward the students with EBD. Decreasing social rejection by others is another positive effect of the intervention package noted by other researchers (Navarro et al., 2007; Simonsen et al., 2008). Social rejection is not simply the conflict that occurs with peers when a child displays disruptive behaviors; having a negative relationship with the teacher also negatively affects the child’s social development. Throughout the intervention, the teachers interacted with these students regularly, not only just to
give them the earned tokens but also to provide the supporting verbal praise that were used to fade the use of tokens. This marked a big change in the participants with EBD from their previous experiences with their teachers, which had consisted of reprimands primarily regarding leaving their seats without permission or paying no attention to instruction.

*Potential Impact on Academic Performance*

While this study did not assess the effect of the intervention package on the learning aspects or academic achievement of the three participants, the post-intervention interviews with the students’ teachers yielded some encouraging information. The participants’ nonoccurrence of out of seat behavior could have a positive impact on their learning since they were more likely to stay on task and listen to their teachers, and less wander around the classroom engaging in off-task activities. Research has noted that disruptive behaviors are often the reason students with EBD are removed from the general education classroom (Gagnon & Leone, 2005; George et al., 2013; Knowles et al., 2015), either temporarily excluding from a specific activity, or for longer durations, such as being referred to special education. Long-term or regular removal from general education with typically developing peers has been found to have a serious, negative impact on the academic achievement of these students (Reid et al., 2004). It is therefore imperative to avoid this segregation through the implementation of strategies like the intervention package examined by this study. Moreover, disruptive behaviors affect more than just the learning of the student with EBD; typically developing peers in the same general education classroom are also negatively affected, both by the distraction created and by the need for the teacher to take time from class instruction to address the behavior (Carr et al., 1991). This again emphasizes the benefits of this intervention package on the academic performance of both children with EBD and their peers by decreasing disruptive behavior in students with EBD.
Implications for Practice

The results of this research offer useful guidance and information for future research. This study lays the groundwork for similar efforts that could combine behavior contract and token economy as an effective intervention package to support students with EBD in decreasing other disruptive behaviors. However, to effectively implement such effective practices, it does require certain cautions. For example, to implement this study successfully, observations (either directly or by watching the iPad recordings) for data collection were conducted by the researcher and an independent observer (in this case, a math teacher) recruited from outside the classrooms of the three participants to act as a second observer to achieve satisfactory IOA. The school did not have paraprofessionals or other supporting personnel in the classrooms to help manage these tasks. Successful delivery of interventions such as this requires an increase in the number of interventionists in the classroom who can steadily monitor the progress of the target students, and an overall increase in the number of supporting staff in schools (Gandhi et al., 2015; Maggin et al., 2016).

In addition, there is a need to expand teacher training and professional development. In this study, the researcher had to train each of the three general education teachers in how to implement the intervention. They needed to have a full understanding of all aspects of the intervention package in order to properly implement them. That would not have been so difficult if they had received training in evidence-based practices (EBP) and interventions during their college, or if professional development opportunities on EBP and interventions were made readily available and accessible to them at the district level.

As this study clearly shows, implementing interventions in students with EBD requires the cooperation of general education teachers, especially today when the education system is
moving toward more inclusive in regular educational settings. However, such implementations might be better accomplished by a paraprofessional who can work one-on-one with these students. These critical issues were brought up by previous research (Maggin et al., 2016). The implementation of EBP and interventions to maintain students with EBD in the general education classroom is necessary to improve the academic, social, and behavioral outcomes of these students. It is also necessary to ensure that all professionals working in general education settings understand how to choose and implement appropriate, individualized interventions to address individual student’s specific learning and/or behavioral needs. This is an area where more research is needed to better prepare schools and train teachers on how to implement EBP and interventions in students with EBD (Maggin et al., 2016).

Specifically, in the current study, the use of this intervention package had a great impact on teachers’ attitudes and perceptions regarding students with EBD. The feedback from the participating teachers indicated that sufficiently training the teacher is critical to achieving successful outcomes. Research has suggested that changing teachers’ attitudes toward students who have EBD can produce more positive results (Aldabas, 2015; Alquraini, 2010). All three general education teachers in this study had a very negative view of the three students prior to the intervention. They noted that they had tried many different interventions with them but had seen no changes in their behaviors. The teachers’ comments and experiences confirm that it is important to provide teachers with evidence-based practices and interventions and encourage them to apply them to better serve students who have disabilities (Al Jaffal, 2019). The teachers were grateful that the intervention had significant positive effects on the students’ behavior. As the teachers saw the positive outcomes, their attitudes toward these students changed. Hence, the intervention shows great promise for teachers to change attitudes toward students with EBD who
are present in the general education classroom. This can potentially reduce the number of these students who are referred for special education services. Such referrals have been shown to have negative impact on the social and academic outcomes of these children, and it is a goal of the Saudi government to maintain students with disabilities, including EBD, in the least restrictive environment, which is the general education classrooms.

The Saudi Ministry of Education should require that all general education teacher candidates take at least one special education course that teaches them how to better serve students with various disabilities including EBD in their college teacher preparation programs. Aldabas (2015) also suggested that “the Ministry of Education in Saudi Arabia should develop hiring qualifications for teachers, and these should be included in teacher preparation programs in colleges of education in Saudi Arabian universities” (p. 1164). The Ministry of Education should also encourage in-service teachers to pursue further education to be qualified to work with students with special needs (Al Jaffal, 2019). A decrease in out-of-seat behaviors and/or other disruptive behaviors in students with EBD benefits not only students with EBD, but also typically developing peers and teachers, as well as parents. These benefits will extend beyond school setting, in terms of both academic and social outcomes, and will also have far-reaching impacts on the communities of these children.

This intervention package has many advantages for teachers who work with students with EBD. It is affordable and easy to use, and it does not require extensive training or continuing education (Sugai & Horner, 2002). As noted previously, it has been successful with different grade levels, school populations, and types of behavioral issues. The teachers stated that the intervention is fun, easy to learn, and effective. Combining behavior contract with token
economy also has social value, as it improves academic performance and decreases social rejection by peers (and teachers) (Navarro et al., 2007).

This intervention is highly recommended for teachers with limited time for professional development since it is so easy to implement. Part of the training offered to teachers during this research concerned how to manage class time and make it more effective and enjoyable at the same time. However, the researcher would recommend add more supporting staff to help teachers with implementation. For example, with help from a behavior specialist, teachers would be able to manage class time better and focus on teaching, rather than trying to address recurrent behaviors and teach at the same time. The principal at the school where the study took place agreed with these recommendations and intended to implement them again next semester.

Limitations of the Study

Undoubtedly, this study has made a unique contribution to the research literature on working with students with EBD in Saudi Arabia. However, this study also had several limitations. One was the small sample size of three students, which could result in a lack of generalizability. Since the results are not generalizable to larger populations, this factor affects the external validity of the study (Horner et al., 2005). However, Maggin et al. (2018) stated, “An intervention can be established as evidence-based, or generally effective, when a functional relation is established across at least five [single-case design] studies that involved at least 20 individuals in a population when at least three different teams of researchers conducted the studies” (p. 190). This means that should other similar studies be conducted that fulfill the above requirements, the generalizability of this research could be improved.

Also, the researcher’s physical presence in the classroom, even though it was limited to the baseline phase and out of sight of the students, may have caused the students to behave
differently than had an outsider not been present (this is called the Hawthorne or observer effect). Furthermore, the intervention took place only in reading classes in an elementary school in the Eastern Province of Saudi Arabia, so generalization, even to other provinces within Saudi Arabia, is uncertain. Richards (2018) mentioned that one main disadvantage of multiple-baseline design is that covariance among participants may occur if the participants learn vicariously through the experiences of the other participants. Since the subjects were in three different classrooms in this study, it is considered that such effect is very limited. Additionally, identifying multiple subjects who are functionally similar is quite difficult. For all these reasons, no reliable conclusions can be drawn concerning the generalizability of the intervention package in decreasing out-of-seat behaviors in other populations of Saudi Arabian students with EBD.

Another threat to the validity of this research was the time-consuming nature of the design (Richards, 2018). The time and location of each intervention could also impact the process; for this study, the three students’ reading classes occurred at different times. For example, the effects may vary depending on whether the intervention occurs in the morning or the afternoon.

The study did show that the intervention is easy to implement and that it is highly affordable. The only concern raised by the participating teachers was that, given the number of students in the same general education classroom, the teacher might have difficulty in implementing this intervention consistently unless a teaching assistant is present to help with the process. The use of supporting staff allows the teacher to focus on teaching, so it helps achieve optimal learning outcomes for all students. Therefore, class size could affect teachers’ attitudes toward implementing this approach. The two
main barriers mentioned by the teachers were class size and the tendency toward a negative, skeptical attitude prior to seeing the intervention works.

**Recommendations for Future Research**

The results of this study showed positive effects and highlighted the effectiveness of the combination of behavior contracts and token economy in decreasing the frequency of students with EBD leaving their seats in the classroom. Future research could replicate this study with a larger group of Saudi students who have EBD, as well as recruit children from different cities and of different socioeconomic status. Future research could also last for a longer period of time in order to obtain additional information on learning and social outcomes. Future research can also examine if or why students leave their seats more or less frequently during specific classes. In this study, the teachers had noted that these three students not only engaged in more out-of-seat behaviors than other students, but also did so in reading class more than in other classes.

The attitudes of Saudi teachers toward students with EBD should be examined to change negative stereotypes about these students. Teachers reported that they did not have time to learn how to interact more effectively with these students and tended to lose hope and give them up. When the intervention was applied, the teachers in this study were happy to discover that it was easy to implement and did not require much money or special expertise. After implementing the intervention package, teachers’ attitudes had noticeably changed, although they reported that they needed a behavior analyst or teaching assistant in the classroom to help them monitor out-of-seat behaviors while they were teaching reading. The change in attitude has revealed how much negative impact the lack of knowledge on special education and related on how to serve students with EBD has on teachers.
Ideally, to avoid the Hawthorne effect, students should not be made aware that they are being observed during any phase of the study. Therefore, future studies should use video recording instead of direct observation by a third party across different phases of the study. It is also important to limit the number of students with EBD in a single classroom, as multiple high-need students can overwhelm even highly qualified, well-trained teachers with years of experience. In a relatively large classroom, a behavior assistant can be very helpful since he/she will be able to work directly with the student with EBD if needed.

**Summary**

Numerous previous studies involving students with EBD employed different methods, measures, and data analysis procedures. The present study sought to develop a more explicit account that could guide educators who wish to find ways to effectively improve targeted behaviors of individuals in the context of Saudi Arabia. This research aimed at identifying simple, easy to use but cost effective intervention strategies to better serve students with EBD who displayed challenging behaviors that prevent them from reaching their full potential. Findings from this study have provided strong evidence of the positive effects of the intervention package that combined behavior contract and token economy in decreasing out-of-seat behaviors in students with EBD in general education settings.
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BEHAVIOR CONTRACT AND TOKEN ECONOMY FOR STUDENTS WITH EBD


BEHAVIOR CONTRACT AND TOKEN ECONOMY FOR STUDENTS WITH EBD


APPENDIX A

ENGLISH LANGUAGE: STUDENT ASSENT TO PARTICIPATE IN A RESEARCH STUDY

WHAT AM I BEING ASKED TO DO?

We would like to invite you to join a study to help children in your age do better at school. Before you join the study, we would like to tell you what it is about so you know what we want you to do. If you are willing to join us. This form tells you what the study about.

WHO IS DOING THE STUDY?

The study is being conducted by Manal Alsheef, a student from Saudi Arabia attending Duquesne university in Pittsburgh, USA.

WHAT IS A STUDY?

A study helps us to learn new things. We can test new ideas and ways of doing things. For example, we can ask a question and then we try to find the answer.

WHY IS THIS STUDY BEING DONE?

We are doing this study to help children in your age to follow rules and behave better in the classrooms.

WHO IS BEING ASKED TO PARTICIPATE?

Elementary children aged 7 to 12 from Alhasa City who have difficulties staying in their seats.

WHAT DO I HAVE TO DO?

If you are willing to join this study, we will ask you to do these things:
1. Read this form about the study and sign it;
2. Follow the behavior contract created by the teacher;
3. Try your best to stay in your seat;
4. You will get a reward when you follow the rules;
5. You will get rewards such as a token, fake money, or chips for following the rules and stay in your seat during the class;
6. After you earn any tokens, you can exchange them for one of your favorite items after class.

WHERE WILL THE STUDY HAPPEN AND HOW LONG WILL IT TAKE PLACE?
The study will happen in reading class for about three months.

**COULD I BE HARMED BY PARTICIPATING IN THIS STUDY?**

This study is not harmful. No risks are associated with this study.

**WHAT SHOULD I DO IF I AM UNCOMFORTABLE WITH ANY PART OF THE STUDY?**

If you are uncomfortable you are free to stop at any time.

**WILL I BE PAID TO DO THIS STUDY?**

No, you will not get paid

**ARE OTHER PEOPLE GOING TO KNOW WHAT I DID OR SAID?**

The researcher will share your performance only, but all else confidential.

If we find useful information in our research we will want to share it with others, either by writing a paper about it, or talking about it with other professionals. If we do this, we will never give out your name or talk about you in a way that someone could figure out who you are or what you said in the research. No one will know what you said, except us. We will not share any personal information with other people. We will keep everything private and secure.

**CAN I QUIT IF I WANT TO?**

Yes. You can quit anytime you want. If you do start, and decide you don’t want to do it anymore, just tell the special education teacher or the researcher, or tell your parents so they can tell us. Don’t worry; no one will be mad at you if you decide to stop. It’s all up to you

**CAN I FIND OUT WHAT YOU LEARN FROM THE STUDY?**

Yes. After the study is done, we can tell you about what we found out or can give you a paper that will explain what we discovered, and you can have a copy of our paper if you want. Just let us know that you would like to have a copy of it and we will give it to you for free.

**Okay, would you like to be part of this study?**

If you read and understand everything on this paper, and you understand that you don’t have to
Join the study if you don’t want to, and you can quit anytime you want, then circle the green happy face and write your name below it. If you would rather not be in the study, please circle the red face and write your name below. Thank you very much.

---

[Smiley face drawn on the left, labeled 'YES', and an unhappy face drawn on the right, labeled 'NO']

---

__________________________  ____________________
Child’s name and signature   Date

__________________________  ____________________
Guardian’s signature         Date

__________________________  ____________________
Researcher’s signature       Date

Page 3 of 3
APPENDIX B

ENGLISH LANGUAGE: PARENT CONSENT TO PARTICIPATE IN A RESEARCH STUDY

DUQUESNE UNIVERSITY
600 FORBES AVENUE  •  PITTSBURGH, PA 15282

PARENT CONSENT TO PARTICIPATE IN A RESEARCH STUDY

TITLE:
Examining the Effectiveness of an Intervention Package That Combines Behavior Contracts and Token Economy to Decrease Out-of-Seat Behaviors in Students with Emotional and Behavioral Disorders (EBDs) in Saudi Arabia

WHO IS DOING THE STUDY?
Manal Alsheef, Ph.D. Candidate in Special Education, School of Education, Duquesne University, United States

ADVISOR: Ann X. Huang, Ph.D., Associate Professor, School of Education, Duquesne University

WHAT IS THE PURPOSE OF THIS LETTER?
This letter gives you information to help you decide whether to allow your child to join this research study. It describes the study and answers common questions. Please read the information below and contact the researcher with any other questions you may have before deciding whether to give permission for your child to join. If your child participates in the study, he or she will be videotaped using an iPad. This form serves as an agreement to allow your child to join.

SOURCE OF SUPPORT (if applicable):
This study is not supported by a grant.

WHY IS THIS RESEARCH STUDY BEING DONE?

Your child is being invited to participate in a research project that seeks to investigate the effects of an intervention package that combines behavior contracts and the use of reward tokens to help children with Emotional and Behavioral Disorders (EBDs) stay in their seats during classroom time. This study could help children with EBDs in Saudi Arabia to behave better at school.
In order for your child to participate in this study, your child must be:

1) Diagnosed with EBD;
2) Between ages of 7 to 12;
3) Attending an elementary school in the East Province of Saudi Arabia in Alhasa city;
4) Having difficulty stay in his or her seat during class.

WHAT WILL MY CHILD BE ASKED TO DO?

If you are willing to let your join this study, we will ask your child to do these things:

1. Read and sign the child consent form;
2. Follow the behavior contract created by the teacher;
3. Try his/her best to stay in her/ his seat;
4. Your child will get a reward when he/she follows the rules;
5. Your child will get rewards such as a token, fake money, or chips for following the rules and stay in his/ her seat during the class.
6. After your child earn any tokens, he/she can exchange them for one of his/her favorite items after class.

HOW DOES THE REWARDS SYSTEM WORK?

1. If your child receives three tokens, he /she will exchange them for three items. One or two tokens can be exchanged for one item only. If your child earns no tokens, he/ he will not be able to obtain any items;
2. Your child will be able to exchange the tokens for a favorite item in class.

WHERE WILL THE STUDY HAPPEN AND HOW LONG WILL IT TAKE PLACE?
The study will happen in reading class for about three months.

WHAT ARE THE RISKS AND BENEFITS OF THE STUDY?

- No risks are associated with this study.
- The major anticipated benefit will be the reduction of out-of-seat behaviors.
WILL MY CHILD BE PAID FOR TAKING PART IN THIS RESEARCH STUDY?
No, your child will not get paid

ASSURANCE OF CONFIDENTIALITY
Neither your name nor your child’s name will appear anywhere in the project documents or reports. All written and electronic forms associated with the study will be kept secure, and the recordings obtained will not be used outside the study. All information about your child, including name and responses, will be kept safe and secure at all times. The recordings will be maintained for three years after the completion of the research and will then be destroyed.

RIGHT TO WITHDRAW AT ANY TIME
You are under no obligation to give your permission for your child to participate in this study, and you may withdraw your permission at any time by notifying either the special education teacher or the researcher in written document or by email.

SUMMARY OF RESULTS
A summary of the results of this research will be available, at no cost, upon request.

VOLUNTARY CONSENT:
I have read the above statements and understand what is being requested of me and my child. I also understand that my child’s participation is voluntary and that I am free to withdraw my permission for my child at any time, for any reason.

On these terms, I agree that I am willing to allow my child to participate in this research project. I understand that should I have any further questions about my child’s participation in this study, I may contact [Manal Alsheef at alsheefm@duq.edu, +1 412-773-4089 (U.S. phone number) or +966 557-683-996 (Saudi phone number) or the project advisor, Dr. Ann Huang, at huanga2840@duq.edu.If I have questions regarding the protection of human subjects issues, I may contact Dr. David Delmonico, chair of the Duquesne University Institutional Review Board, at +1 412-396-4032 (U.S. phone number).
A copy of this form will be given to you, to keep for your records.

Parent/Legal Guardian’s Signature

Date

Child’s Name

Date

Researcher’s Signature

Date
APPENDIX C

ARABIC LANGUAGE: STUDENT ASSENT TO PARTICIPATE IN A RESEARCH STUDY

Duquesne University
Institutional Review Board
Protocol #2019/09/7
Initial Approval 09/29/2019
Expires No Expiration Date

جامعات دولية
200 فوريس افوا، بيبرغ، بنسلافا
نموذج تصريح الوالدين

العنوان:
دراسة فائقة في معالجة ال سبحان الرمز والعقد السنوي على السلوك والبروفا من الاضطرابات العقلية والسلوكية في المملكة العربية السعودية

ما هو الهدف?
لما هذا الدراسة؟

لا يوجد

من أجل المشاركة في الدراسة، يجب أن تكون:
- بين سن 12-17
- في المرحلة الابتدائية، المدرسة الشرقي من المملكة العربية السعودية
- معاداة مقداراً لمنشأة شرح المعلم خلال حصة القراءة وبدون استثناء
- مصابة في تسجيلاتها

ماذا يجب عليك أن تفعل؟

ستطلب منك ذلك ب:
قراءة هذا النموذج وتوقيع الموافقة على قواعد السلوك مع المعلم،
كن في معرفتك أثناء حصة القراءة،
ترك المعلم فقط نحن المعلم،
سيتم منح المعالم وفقاً لما يضع المعلم.
كم مستندات الدراسة?
مستندات الدراسة وثيقة حصة القراءة، لمدة ثلاثة أشهر.

هل هذه الدراسة مضرة؟
هذه الدراسة ليست مضرة ومع ذلك، إذا تعرك على أكثر في أي شيء آخر، فارجع إجبارات بذلك.
تحاول هذه الدراسة مساعدتك على تعلم أسباب إنشاء تطبيقات المعلم وقواعد الفصل.

Duquesne University
Institutional Review Board
Protocol #2019/09/7
Initial Approval 09/29/2019
Expires No Expiration Date

Appendix C

ARABIC LANGUAGE: STUDENT ASSENT TO PARTICIPATE IN A RESEARCH STUDY

Duquesne University
Institutional Review Board
Protocol #2019/09/7
Initial Approval 09/29/2019
Expires No Expiration Date

جامعات دولية
200 فوريس افوا، بيبرغ، بنسلافا
نموذج تصريح الوالدين

العنوان:
دراسة فائقة في معالجة ال سبحان الرمز والعقد السنوي على السلوك والبروفا من الاضطرابات العقلية والسلوكية في المملكة العربية السعودية

ما هو الهدف?
لما هذا الدراسة؟

لا يوجد

من أجل المشاركة في الدراسة، يجب أن تكون:
- بين سن 12-17
- في المرحلة الابتدائية، المدرسة الشرقي من المملكة العربية السعودية
- معاداة مقداراً لمنشأة شرح المعلم خلال حصة القراءة وبدون استثناء
- مصابة في تسجيلاتها

ماذا يجب عليك أن تفعل؟

ستطلب منك ذلك ب:
قراءة هذا النموذج وتوقيع الموافقة على قواعد السلوك مع المعلم،
كن في معرفتك أثناء حصة القراءة،
ترك المعلم فقط نحن المعلم،
سيتم منح المعالم وفقاً لما يضع المعلم.
كم مستندات الدراسة?
مستندات الدراسة وثيقة حصة القراءة، لمدة ثلاثة أشهر.

هل هذه الدراسة مضرة؟
هذه الدراسة ليست مضرة ومع ذلك، إذا تعرك على أكثر في أي شيء آخر، فارجع إجبارات بذلك.
تحاول هذه الدراسة مساعدتك على تعلم أسباب إنشاء تطبيقات المعلم وقواعد الفصل.
BEHAVIOR CONTRACT AND TOKEN ECONOMY FOR STUDENTS WITH EBD
APPENDIX D

ARABIC LANGUAGE: PARENT CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Duquesne University
Institutional Review Board
Protocol #201909/7
Initial Approval: 09/29/2019
Expires No Expiration Date

جامعة دوكر
٢٠٠٠ فوريس أفينو، برشير، بنسلفانيا
نموذج تصريح الوالدين

المحتوى:
دراسة فاعلية تسيح الاقتصاد الرمزي والعقد السلكي على السلوكات الغير مناسبة للطلاب ذوي الإضطهاد العاطفي والسلوكية في المملكة العربية السعودية
من يقوم بالدراسة؟
مباشرة الطيف، الدكتور، في التربية الخاصة، كلية التربية
alsheefm@duq.edu
4089-773-412
المحترف الدراسي:
أن إكس هواغ، الدكتور، استاذ مشارك، كلية التربية
huanga2840@duq.edu
412-396-1599

ما هو الغرض من هذه الرسالة؟
توفر لك هذه الرسالة معلومات لمساعدتك في تحديد ما إذا كنت متسامح لطللك بالانضمام إلى هذه الدراسة البحثية.
سيقوم الباحث بتوصيف الدراسة لك وإجابة على جميع أسئلتك. إليه قراء المعلومات أدناة وطرح أي أسئلة قبل تقرير ما إذا كنت
مستمسك لطلباتك بالانضمام أم لا. إذا قررت السماح لطلتك بالمشاركة في هذه الدراسة، فستتم استخدام هذا النموذج لتسجيل موافقتك وتسليم
ملك التساح البحاثي بتسجيل طلتك باستخدام جهاز الأبد آن الطرفية السلوكات.

مصادر الدعم:
- هذه الدراسة غير مدعومة
- ما هو الهدف من إجراء هذا البحث؟
- تتم دعوة طلتك للمشاركة في مشروع بحث يُعتبر ناجح دمج استراتيجيات الاقتصاد السلكي والعقد السلكي لمعالجة
المشكلات التي تؤثر على الطلاب ذوي الاضطهاد العاطفي والسلوكية في المملكة العربية السعودية
لكي يشارك طلتك في هذه الدراسة، يجب أن يكون طلتك:
1- مشترك أنه من ذوي الاضطهاد السلكية
2- بين س ٧ و ١٢ سنة
3- لا يدور في مدرسة إعدادية في المنطقة الشرقية من المملكة العربية السعودية في مدينة الإحساء
4- يترك مقدمة عدة مرات خلال الفصل دون أن ينتمي
5- غير قادر على الحفاظ على العلاقات بسبسلويتهم التجريبي
BEHAVIOR CONTRACT AND TOKEN ECONOMY FOR STUDENTS WITH EBD

Duquesne University
Institutional Review Board
Protocol #20190907
Initial Approval 09/29/2019
Expires: No Expiration Date

BEHAVIOR CONTRACT AND TOKEN ECONOMY FOR STUDENTS WITH EBD

Before starting the study, please note that participation involves certain responsibilities and expectations related to the token economy. Below, you will find guidelines to follow:

1. Compliance with rules and regulations.
2. Participation in scheduled activities.
3. Documentation of progress.

The study will involve a token economy system where students will earn tokens for following rules and engaging in positive behaviors. These tokens can be exchanged for rewards.

What are the potential risks?

There are potential risks associated with participating in this study, including:

1. Time commitment.
2. Participation in structured activities.
3. Potential for negative outcomes.

If you have any concerns or questions, please contact the study coordinator.

Thank you for your participation.

Ali Sheekin
alsheekin@duq.edu

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APPENDIX E

AUTHORIZATION FORM FROM THE SCHOOL

Scanned with CamScanner
APPENDIX F

DATA COLLECTION SHEET

Participant Name: ____________________

Date: ______

<table>
<thead>
<tr>
<th>Date of Observation/Setting</th>
<th>Time Period of Observation Start / End</th>
<th>✓ for Each Occurrence of the Target Behavior</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
Emotional and Behavioral Disorders

The Individuals with Disabilities Education Act ([IDEA]; 2004) characterizes EBD as involving, among other characteristics: (a) reduced academic achievement that is not related to specific “intellectual, sensory, or health issues; (b) social and communication development issues that may impact relationships with others; and (c) the exhibition of behaviors that cause disruption to the environment.

Behavior Contract

This is an intervention tool that can be used to support positive behavior in students. Also termed a “contingency contract,” the material is typically developed with the target student; both the student and the teacher agree to the terms and sign the contract. The strategy can also be employed in the home and constructed between the parent(s) and child. This behavior change strategy is one educators and parents can use to reinforce the positive actions of students and reduce disruptive ones (Bowman-Perrott et al., 2015; J. O. Cooper et al., 2007).

Token Economy

This strategy is a behavioral change system that utilizes tokens of some kind (e.g., fake money, plastic coins) to assist children in increasing desirable behaviors and reducing undesirable ones by distributing tokens for positive action, which can be redeemed for different types of rewards (e.g., stickers, snacks, extra credit; Kazdin, 2012).

Intervention Package

At times, it is not possible to fully address an issue with a single interventional method or strategy. When this is the case, it is often beneficial to determine if a certain combination of two
or more strategies can be utilized in concert to support one another to better achieve the desired outcome.

**Out-of-Seat Behavior**

Considered a disruptive behavior often exhibited by students with emotional and behavioral disorders, the conduct consists of any action or activity the student takes that involves not simply sitting in their assigned seat per the direction of the classroom teacher and instead engaging in actions such as: rocking the chair back and forth; not engaging in the assigned task; and/or leaving their seat without permission for any reason (*e.g.*, to leave the classroom, to jump or yell, to obtain non-assigned materials to interact with; Yell et al., 2014).

**Social Learning Theory**

A theory of psychologist Albert Bandura that states individuals learn behavior by modeling those around them. Specifically, it asserts that children can learn positive behaviors by observing peers and adults performing these behaviors (Tumangday, 1977).
# APPENDIX H

## TREATMENT INTEGRITY CHECKLIST

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Video recording the students via iPad</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>2. Make a mark for every time the student leaves the seat on the data collection sheet</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>3. Watch the students from a hidden position</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>4. Do not interact verbally with the participants</td>
<td>Y N N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher Training</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Provide a detailed explanation for each step of the implementation of the intervention</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>2. Provide a handout for the teachers</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>3. Provide a detailed explanation for when received the token and when exchange the token</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>4. Meet for 30 minutes every day over two weeks</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>5. A data collection sheet and a behavior contract were given; teachers practiced how to use the behavior contract and received feedback from the researcher</td>
<td>Y N N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Remind the students to follow the rules in the contracts</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>2. Provide a token every time the student on his/her seat</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>3. Provide immediate verbal feedback on the performance</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>4. Exchange the token at the end of the class from the reinforcer menu</td>
<td>Y N N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Follow-up</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Observe the behavior four weeks after the completion of the implementation of the intervention</td>
<td>Y N N/A</td>
</tr>
<tr>
<td>2. Do not provide verbal interactions with the participants</td>
<td>Y N N/A</td>
</tr>
</tbody>
</table>