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The Therapy Box in the Classroom: A Function-based Multi-Component Directive Play Therapy Treatment Package Intervention

Abstract

The Therapy Box is a behavioral intervention being researched to determine its effectiveness as a Response to Intervention (RtI) Tier 2 and Tier 3 behavioral intervention for identified students. The Therapy Box assists students with developing self-regulatory skills and increasing their social-emotional literacy while providing a supportive, caring, and safe classroom environment. The Therapy Box is a treatment package that encompasses the theories of Cognitive Behavioral Therapy (CBT), the use of functional behavior assessments, B.F. Skinner's theory of manding, Differential Reinforcement of Alternative Behavior (DRA), and Directive Play Therapy. The hypothesis is that the student will be able to mand for "calm down time" with the box in lieu of an anger outburst/ episode within the classroom. The Therapy Box must be explained, and the student is part of the box creation during directive play therapy sessions. The intervention includes both student and teacher support to ensure skill generalization and successful outcomes. This research indicates that The Therapy Box proves to be an effective behavioral intervention for at-risk students.

Keywords

aggression, RtI, classroom management, positive behavior support

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The Therapy Box in the Classroom: A Function-based Multi-Component Directive Play Therapy Treatment Package Intervention for Schools***The Need for Intervention***

Many students present with maladaptive behaviors that decrease the amount of time they are able to engage in academic instruction due to the time teachers are forced to take away from the curriculum to intervene on problematic behaviors. Often, these behavioral challenges exhibited by students are behavioral excesses. A behavioral excess is defined by Walker and Severson (1994) as socially maladjusted behavior that happens at a high rate, frequency, with great intensity, and which happens in a setting where it is not appropriate or accepted. Behavioral excess can encompass a range of behaviors, including harassment, aggression, social withdrawal, and insubordination (Walker, Ramsey, & Gresham, 2005). Many times, these behavioral excesses are present due to developmental delay, possible diagnoses of Emotional Disturbance and/ or Behavior Disorders, inappropriate social skills, as well as a lack of training and professional development for teachers to effectively manage these behaviors within the classroom. One study conducted by Kodak, Miltenberger, and Romaniuk (2003), determined that reprimanding unwanted behaviors of students actually produced the most problematic behavior; thus, creating a puzzling contradiction about intervening on behavior within the classroom. The history of research and literature reveals that intervention is needed but leaves the classroom teacher confused as to what is the most effective and appropriate way to intervene on problematic behavior if reprimanding does not work and potentially intermittently reinforces the behavior. This cycle becomes detrimental to the classroom environment as the individual continues to have “outbursts” and the other students fall prey to an atmosphere that is not conducive to learning since much time is spent using reactive and punitive measures that require large amounts of instructional time.

In a time when educational outcomes and teacher effectiveness are dependent on student performance on high stakes test scores and student performance different strategies are necessary for success. Ensuring that appropriate student-centered classroom interventions are employed to decrease maladaptive classroom behaviors is essential to school success. According to No Child Left Behind Act (2002) and Individuals with Disabilities and Education Act (1997), addressing behavioral concerns in the education setting is so important that it is federally mandated that schools address problematic and maladaptive behaviors while using interventions, strategies, and supports that are positive in nature. However, reliance on preventive measures alone may not be enough. According to Greenberg, Weissberg, O’Brien, Zins, Fredericks, Resnik, & Elias (2003), school-based intervention and prevention programs are most beneficial and successful when they simultaneously incorporate social training and increasing the school climate with educational curriculum and components. Greenberg et al. (2003) also noted the positive effects of teaching student’s social skills in real context that assists the students with the social learning process.

Student academic progress is not the only concern as it relates to the effects of maladaptive behaviors on class performance and educational success. School districts must also take into consideration the obvious mental health concerns and outcomes for students that exhibit behavioral excesses, as well as life outcomes for those students. It has been reported in several studies that students who are constantly redirected for

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inappropriate behaviors tend to have higher rates of depression and lower overall academic achievement (Kellum & Anthony, 1998; Kellum, Rebok, Ialonga, & Kalodner, 1994a). Not only do these studies show the negative impact that socially inappropriate classroom behaviors have on academic progress, it also opens the minds of practitioners that our words and actions have consequences, and these consequences have a lasting effect on the students in which we serve. Long-term and lasting effects of the interventions, or lack thereof, that we provide to students in regard to behavior, and the long-term effects of behavioral excesses on students is a concern for the families, teachers, schools, and communities involved.

When looking at the potential negative effects of problem behavior on student academics, it is apparent that the longer the student exhibits the behavioral excesses that are distracting educational progress, the further behind the student will fall (Bradshaw, Mitchell, & Leaf, in press). Additionally, in academic settings where little appropriate classroom management is displayed, there is also generally higher frequency of office referrals and school suspensions (Bradshaw, Mitchell, & Leaf, in press). Both of these decrease the amount of time the student has within an environment conducive to learning. (Bradshaw, Mitchell, & Leaf, in press).

Following the review of research regarding the increase in occurrences of student behavioral excesses in schools and the need to offer supportive, evidence-based interventions in practice, The Therapy Box intervention was created. The Therapy Box is a function-based multi-component intervention (treatment package) that serves as positive reinforcement contingent upon appropriate behavior. The intervention utilizes components of Applied Behavior Analysis (ABA), Cognitive Behavioral Therapy (CBT), and Directive Play Therapy interventions. The ABA components of the treatment include the use of a functional behavior assessment to identify the function of the student behavior, a differential reinforcement of alternative behavior (DRA) schedule used in the classroom by the teacher, and a manding procedure for the student. These ABA principles will be further described in the manuscript and were specifically chosen to assist in reducing behavioral excesses. CBT is a large part of this treatment package and the direct work with the student. The student works with the school social worker to enhance the student's knowledge about how their thoughts, impact their feelings, which impacts their actions. During the course of the intervention training with the student, directive play therapy techniques are used to build the Therapy Box. Art based activities allow for the student to build the box, and then identified coping skills are practiced and used as part of the intervention. Each of these therapy components will be described in more detail below.

Directive Play Therapy in schools

Play therapy is to children what counseling is to adults. Play therapy utilizes children's natural medium of expression, play to help them express their feelings more easily through toys instead of words. Association for Play Therapy (APT) defines play therapy as "the systematic use of a theoretical model to establish an interpersonal process wherein trained play practitioners use the therapeutic powers of play to help clients prevent or resolve psychosocial difficulties and achieve optimal growth and development." There are two forms of play therapy: directive play therapy and child-centered/ non-directive play therapy. Both forms of play therapy can be utilized in

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school settings, but often directive play therapy techniques tend to lend themselves to easier implementation within the school-based setting.

Directive play therapy is a method that includes more structure and guidance by the practitioner as children work through emotional and behavioral difficulties through play. This form of play therapy often contains a behavioral component and the process includes more prompting by the practitioner. The directive or structured activities and techniques used in sessions are typically selected by the clinician to create the desired level of intensity and learning for each session. Jones et al (2003) indicated that there are some specific levels that should be used in directive play therapy work and they include (a) evoking anxiety responses for the child, (b) challenging the child to self-disclose, (c) increasing the child's awareness of certain things, (d) focusing on feelings and emotional responses, (e) focusing on the here and now, and (f) focusing on the threatening issues which may be too difficult to process verbally. Additionally, directive play therapy lends itself well to the school-based environment, as within the school setting students are constantly given directives by the teacher and are expected to comply Utilizing directive play intervention within the school assists the student compliance and skill generalization as they transition from therapy sessions back to the classroom.

Multi-Component Directive Play Therapy Treatment Package

The "Therapy Box" is a multi-component directive play therapy treatment package. A multicomponent directive treatment package implies that a series of separate interventions, typically antecedent based interventions, and processes are embedded into one overarching intervention (Cooper, Heron, & Heward, 2007). In order for an intervention to be termed a treatment package the intervention has to include some specific characteristics such as: the intervention is goal directed, the intervention is process oriented, the intervention monitors incremental change over time, and the intervention's behavior change process uses a variety of problem-solving tools (Foster, G., Makris, A., & Bailer, B., 2005). The treatment package includes a number of smaller interventions and incorporates multiple theoretical models that complement each other within the applied setting. The theoretical frameworks embedded in the intervention include Applied Behavior Analysis (ABA), Cognitive Behavioral Therapy (CBT), and Directive Play Therapy.

The "Therapy Box" is based on the findings of student specific Functional Behavior Assessment (FBA), Skinner's verbal operant Manding, Differential Reinforcement of Alternative Behavior (DRA), teaching appropriate replacement behaviors that served the same function as the maladaptive behavior, directive play therapy techniques, and the basic principles and processes of Cognitive Behavioral Therapy (CBT).

All children display behavior that fit into one of four categories: sensory, attention, escape, and access to tangible. A Functional Behavior Assessment (FBA) is the procedure that assists practitioners with determining the function of the child's maladaptive behavior. Behavior maintained by sensory function means the child displays the behavior, such as self-injurious behavior (SIB), to fulfill sensory needs. Attention maintained behaviors indicate that children display maladaptive behaviors in order to gain attention from peers/adults. Maladaptive behaviors also occur when children are trying to escape or avoid unwanted activities, places, or people. Children also display maladaptive behaviors when trying to gain access to a tangible item such as an object,

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activity, or environment. The Functional Behavior Assessment (FBA) is used to determine the function of the child's maladaptive behavior in order to ensure successful outcomes by implementing functional based supports.

The manding procedure is a very important part of the Therapy Box intervention. Manding is a request or command for something that is wanted. Manding is a form of verbal communication that serves to meet the needs of the person that requests something. Manding can take the form of words, noises, motions, gestures, and pictures. The manding ability of the students is strengthened during the Therapy Box intervention as access to the box is contingent upon the individual manding or requesting it. Differential reinforcement of communicative behavior is defined as a procedure where an instructor or practitioner ignores a maladaptive behavior and reinforces an appropriate communication skill that leads to a wanted item, activity, or reward (Cooper, Heron, and Heward, 2007). This principle is put into play directly in the classroom setting, when the student gains access to the Therapy Box after manding for a break time instead of acting out by displaying a maladaptive behavior. Manding for the Therapy Box becomes a replacement behavior for previously seen escape-maintained aggression. A replacement behavior is defined as a behavior that is taught and used to replace an unwanted or maladaptive target behavior previously exhibited.

Cognitive Behavioral Therapy (CBT) is an evidence-based intervention founded on two fundamental principles: our cognitions directly guide our emotions and behaviors; and our behavior can strongly affect our thought patterns and emotions. Researchers have noted that a cognitive perspective not only added context and depth, but also an understanding to behavioral interventions (Rostami, Mojtahedy, Heidari, Ranjbari, Sadeghi-Firoozabadi, & Ahmadi, 2017). Research has proven the effectiveness of a combined approach that uses cognitive techniques with behavioral methods (Wright, Basco, & Thase, 2006).

Directive Play Therapy techniques can include the use of therapeutic game play, drawing techniques, bibliotherapy techniques, dance/ movement techniques, and music-based interventions that promote social emotional learning, creative problem solving, competence and self-control, as well as stress inoculation (Shaefer, 1999).

Developing a collaborative treatment package that incorporates Cognitive-Behavioral Therapy as well as directive play interventions increases the potency of the evidence-based interventions (Rostami, Mojtahedy, Heidari, Ranjbari, Sadeghi-Firoozabadi, & Ahmadi, 2017). This treatment package is aimed at emphasizing psychoeducation, and the identification of negative thoughts and assumptions that may be maintaining maladaptive behaviors in an attempt to provide supports that are evidence-based (Levine & Anshel, 2011).

Rationale for Current Study

School social workers must be equipped to work within a multisystemic model of service delivery. Students, teachers, administrators, families, and the community are all part of the multisystemic framework in schools. Teachers need effective, evidence-based interventions to be used in the behavior intervention plans that are developed by school social workers and school-based practitioners. Additionally, teachers need more supportive behavior intervention plan training in order to effectively implement the behavior plans within the context of the classroom. Due to lack of teacher training related to appropriately responding to behavioral excesses, the researched negative effects of behavioral excess on the targeted student and the others around him, and the longitudinal

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effects of maladaptive behavioral excesses, the Therapy Box treatment package was created and studied as a potential pro-active, prevention intervention. This treatment package focuses not only on the student's behavioral needs, but also on the teachers understanding of these needs and potential supportive interventions to reduce these identified behaviors. One of the most efficient ways to identify an intervention for a specific student need, is to conduct a comprehensive functional behavior assessment to develop an effective behavior intervention plan. To complete a successful student behavior intervention plan it must be function-based and is even indicated as a requirement in the Individuals with Disabilities Education Act (Heckman, Conroy, Fox, & Chait, 2000).

In 1997 amendments were made to the Individuals with Disabilities Education Act (IDEA) that required schools to implement function-based behavior intervention plans that are founded on practices and systems of positive behavior support (PBS) for those students who engaged in the most maladaptive behavior. PBS is defined as “the application of positive behavioral interventions and systems to achieve socially important behavior change” (Sugai, Horner, Dunlap, Hieneman, Lewis, & Nelson, 2000, 131–143). An FBA assessment can help educators understand problematic behavior or how they are operationally defined; the triggers, antecedents, for problematic behavior; and what maintains the problematic behavior (consequences). The function of a behavior is defined as whether or not the maladaptive behavior is being maintained by negative or positive reinforcement. It is important that we establish the function of a behavior in order to develop and implement a comprehensive, effective, and efficient intervention in order to enhance the student's success. By creating a more comprehensive behavioral intervention plan (BIP) we can ensure that we (a) neutralized and eventually eliminated triggers for problem behaviors, (b) teach the child appropriate skills to increase independence, (c) and manipulate the environment in order to provide consequences that decrease inappropriate behavior while increasing appropriate behavior (Ingram, Lewis-Palmer, & Sugai, 2005).

The current study utilized the Therapy Box technique with 14 students who were struggling with maladaptive behaviors and behavioral excesses in the classroom. All targeted students were in need of intervention to prevent the continuation of office referrals and suspension rates, and three of the students were being considered for assessment to determine eligibility criteria for a possible Emotional Disturbance (ED) category. This article will describe how to utilize the Therapy Box for specific maintaining functions (escape-avoidance, attention, sensory, and access to tangible), and inform the reader of the researched outcomes of this intervention. All of the students referred for intervention struggled with aggression (verbal and/ or physical), and some of the students also displayed non-compliance, off task, and talk out behaviors.

The goals of the study were generated from two hypotheses. The first hypothesis was that the Therapy Box intervention would assist with teaching the students how to self-regulate. This hypothesis was derived from the fact that the initial part of the Therapy Box training incorporates Cognitive Behavioral Therapy, directive play therapy techniques, and participant training on what potential triggers are present when the targeted maladaptive behavior is noted (antecedent information); works with the student to identify the physiological responses to triggers; assists the student with identifying coping skills already present in his/her repertoire; trains the student on how to access the

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box, how to use the box; ends with the intent/rationale behind the Therapy Box. The second hypothesis was that the participant would decrease maladaptive classroom behaviors and ultimately office referrals/ suspensions, due to an increase in appropriate manding, the replacement behavior, after the Therapy Box treatment package was in place.

Method

Participants/Setting

There were 14 participants identified for this study by the school administrators at each school location. These 14 participants were identified as needing additional services to improve their educational outcomes. Parental permission for the purposes of assessment, intervention, and research was obtained prior to the study. Prior to the beginning of this study, this researcher completed and gained approval for this research through the Institutional Review Board (IRB) by both the home university and supporting school district.

The setting was in five different schools in an urban school district. The children ranged in age from 6 years -12years of age, and from Kindergarten to 6th grade. Nine of the participants were noted as general education children, two students were noted as children receiving special education services at the time of the intervention, and three children were being assessed for potential eligibility for ED diagnosis and service delivery due to their high rates of aggression within the school setting and possible need for a more restrictive environment in order to improve successful outcomes for the students. All students were in elementary and middle school settings where the teachers teach all core academic subjects and they only transition to support classes (Physical Education, Music, Art, etc.) and lunch and recess daily. All of the students referred for intervention struggled with aggression (verbal and/ or physical), and some of the students also displayed non-compliance, off task, and talk out behaviors. Not all of these were the targeted maladaptive behaviors monitored for this study.

Case Examples

One targeted student was an eight-year-old, second grade, African American male student. The student was identified as in need of services due to his high occurrence of office referrals and suspensions related to aggression, and two separate incidents where the school district's crisis team was contacted to conduct a lethality assessment on the student due to making verbal threats to kill peers and staff at the school. This child was being served as a general education student.

Results of the Functional Behavior Assessment procedures indicated that the student's behaviors were physical aggression with an escape-maintained function, validated through the parent and teacher interview results and direct observation. Whenever the student is provided a non-preferred activity to complete that is difficult or time consuming the student's behaviors become problematic and eventually escalate to aggressive behaviors towards others. This pointed directly to the behavior being maintained by escape/ avoidance. The staff at the school had never before employed the idea of a replacement behavior but had previously used interventions that were punitive (office referrals and in school/ out of school suspensions) in nature with no success in decreasing the maladaptive behavior.

The second student example is of a nine-year-old, third grade, African American female student. This child was being served as a general education student. The student

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was identified as in need of services due to her high occurrence of office referrals and suspensions related to talk out, out of seat, and non-compliant behaviors. Results of the Functional Behavior Assessment noted that the student's behaviors were maintained by attention from others, validated through the parent and teacher interview results and direct observation. Whenever the student is denied access to attention (teacher attention or peer attention) she would display non-compliance, talk out, and out of seat behaviors. The teacher was inadvertently reinforcing these behaviors by verbally redirecting the behaviors and providing a lot of attention in the form of reprimands. Attention-maintained behaviors are time consuming and if an inappropriate intervention is implemented, then it could actually make the (Ninness, Rumph, McCuller, Stahl, Ward, Vasquez, & Davis, 2008).

The third case example is an 11-year-old 5th grade African American student with a diagnosis of Autism Spectrum Disorder (ASD). This student was receiving inclusion based special education services in the school setting, but displayed maladaptive behaviors which included aggression, non-compliance, and off task behaviors. The behaviors at times were so frequent that the teacher would have to call for a support staff to come to the classroom to assist. Following the completion of the Functional Behavior Assessment, it was identified that many of the maladaptive behaviors displayed that were considered time consuming and problematic in the classroom were maintained by a sensory need. This was validated by the assessment, direct observation, and parent and teacher input during the initial phases of the assessment. This student had high levels of sensory needs which is common among students diagnosed with ASD.

The final case example is a twelve-year-old, sixth grade, African American female student. This student was referred due to high incidents of office referrals and both in school and out of school suspensions due to peer conflict, aggression, and non-compliance. This student was being assessed for potential eligibility as a student with a special need. Her aggressive acts and poor peer interactions were usually in relation to a tangible or wanted item. Results of the Functional Behavior Assessment noted that the student's behaviors were maintained by access to tangible. This was validated through the parent and teacher interview results and direct observation. Whenever the student wants access to the computer or a wanted item, the student will respond by escalating to aggressive behaviors in order to access the wanted item.

The remaining students in this study all reflected similar targeted behaviors and needs. Functional Behavior Assessments (FBA) were completed on all participants and the results reflected differing functions of behavior for each. The findings of the FBA were used to produce a specific intervention for each student.

Function-based Therapy Box Use

After consent was obtained the researcher completed a comprehensive functional behavior assessment (FBA) on each identified student. Based on the findings of the FBA the researcher identified the function of the student's maladaptive behaviors and put in place the most appropriate Therapy Box treatment package to address the student's needs.

Function based interventions and thinking is a technique in which the clinician evaluates the problem behavior or client need to determine the most effective function-based supports. Function based thinking and problem solving allows the clinician to script interventions that will have a higher likelihood of success (Austin, 2014). Once the

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function of the student behavior is identified, that specific function is used in the intervention development. Because many students display behaviors that are multiply maintained (i.e. student behavior may be maintained by escape and sensory), the Therapy Box utilizes all functions of behavior as a part of the intervention. The function of access to tangible is reinforced by gaining access to the Therapy Box after a certain required behavior is displayed, attention is provided to the student in the form of positive attention if the student participates in an appropriate behavior, escape-maintained behaviors are only reinforced when the student appropriately requests a break in lieu of aggression, and sensory maintained functions are reinforced by the coping activities held within the Therapy Box. This treatment package assists the teacher with only reinforcing adaptive and more appropriate behaviors from the student.

Briefly described below are the components of each Therapy Box based on the child's identified function of behavior:

- **Access to Tangible:** The Therapy Box for access to tangible would include preferred items for the student such as action figures, games, toys, music, books, journals, crayons, pencils, markers, instructions for calming procedures and activities (blowing bubbles, breathing exercises, balloons), and cognitive behavior materials (worksheets for target behavior). This is based on a preference assessment. It is important to remember the tangible item or wanted item should be what is placed in the box in which the child must work towards accessing with positive behavior. The child works to gain access to the box that includes the tangible items. The treatment package includes the "First-Then" concept also known as the Premack Principle. First you work, and then you can access the box to gain tangible items.
- **Attention:** The Therapy Box for attention will include preferred items for the student such as attention coupons (coupon given to the student by the teacher that will allow him/her to have one on one attention from the teacher), games the student can play with another peer (If given permission from the teacher), instructions for calming procedures and activities (blowing bubbles, breathing exercises, balloons), and cognitive behavior materials (worksheets for target behavior). The box for attention was used in conjunction with social reinforcement from preferred adult or peer. This would include a token economy system where the teacher supplies the student with additional points or coupons for positive behavior to be redeemed at a time where attention is appropriate. It is important to remember that the person with whom the student is seeking attention (teacher, adult, parent, or peer) should be with whom the attention/ box time is shared.
- **Escape:** Much like the Therapy Box for access to tangible, the Therapy Box for escape will contain items that are preferred by the student such as action figures, games, toys, music, books, journals, crayons, pencils, markers, instructions for calming procedures and activities (blowing bubbles, breathing exercises, balloons), and cognitive behavior materials (worksheets for target behavior). The important part of the box for escape-maintained behaviors is the break card in which the student must

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mand for a break. The student would get access to a break from the non-preferred activity ONLY if the student mands for the box correctly. If the child mands for the box appropriately, then the child has access to the Therapy Box where more preferred tasks are available for use on a time limited schedule. The student would only be able to access the box for up to 5 minutes, and then the student must return to the non-preferred activity or item. This teaches the student to ask for a break in a more appropriate manner, and then return to the activity (Albert, Carbone, Murray, Haggerty, & Sweeney-Kerwon, 2012).

- **Sensory:** The Therapy Box for sensory can include items for sensory maintained behaviors such as weighted vests, therapy band that wraps around the legs of the chair to help the student stretch and move their legs, textured balls, instructions for calming procedures and activities (blowing bubbles, breathing exercises, balloons), physical therapy activities, and cognitive behavior materials (worksheets for target behavior). Based on a preference assessment and sensory assessment to ensure the box materials will meet the needs of the child's sensory needs.

Materials

Materials for this study consisted of all items needed to create the therapy box. As described above the boxes included the following: a plain box filled with calming techniques identified by each individual student, based on the preference assessment. The box could include calming activities (bubbles, breathing exercises, balloons, straws), journals (drawing and writing), worksheets (related to anger management), CD's (student's favorite songs), art materials (pencils, Pens, markers, crayons), cognitive behavior materials (think sheets to process anger), and instructions related to a calm down procedure created by the researcher with the assistance of each student. The Therapy Box includes multiple components to assist the student who needs a break, once the student appropriately mands or asks for a break. All the items included in the therapy box were selected from the extant literature on self-monitoring, self-calming, and educational tools proven to work with adolescence. In addition, preference assessment interviews were conducted with the teachers, counselors, parents, and students to gain direct input on preferred items. Sample pictures of a Therapy Box can be seen in Appendix A.

The only additional materials provided during this study, were the data collection sheets (event recording data sheets) that were provided to the teacher. A sample of the data sheet is available in Appendix B.

Dependent Variable

The students in this study displayed many behaviors within the classroom setting including non-compliance, aggression, talk out, off task, and non-compliance; however, the constant target behavior across all participants was noted as aggression. The study focused on student aggression, and this was identified as the dependent variable (DV).

Data Collection Process

Data collection training in school practice is necessary to ensure that outcomes for student specific interventions are accurate. To ensure that the appropriate data was collected for this intervention, the teachers were trained in specific data collection processes. For purposes of this study aggression included both verbal aggression and

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physical aggression. In this study verbal aggression was defined as any event of verbalization that referenced a threat to someone or something, yelling at someone, and cursing; physical aggression and property destruction were combined and were defined as any instance of hitting, slapping, kicking, punching, stabbing, breaking objects, and throwing objects was counted as an occurrence of aggression. All occurrences of the targeted behaviors were gathered using a frequency/ event recording procedure. The teacher would simply note the occurrence of each target behavior for the target child using a simple hash mark by the identified target behavior. A continuous event recording procedure was used. Data collection was modeled and practiced until 100% accuracy was obtained with the teachers while practicing data collection within the teacher training. The data training included the use of a videotaped classroom in which externalizing behaviors were present. Each teacher was asked to watch the video and capture data on an event recording sheet. After each viewing of the video results were analyzed and corrective feedback on data collection was provided. There were 3 rounds of data collection training provided before 100% accuracy in data collection was obtained. The table below shows the interobserver agreement (IOA) during each of the three training trials.

<Table 1>

After the teacher training on data collection concluded, the teachers were all equipped with data sheets and were informed and trained on the target behavior and the data collection methods. Data was collected for 5 sessions for each student prior to the intervention phase being initiated. All baseline data lasted 5 weeks and intervention data was monitored for 11 weeks.

Research Design

This study used a single subject A-B design across participants. There is one A-B-A design within this study, noted in Student 12's data, due to a teacher requesting to stop the intervention briefly. The intervention was stopped and then resumed after 4 sessions. This will be described further in the results section. The visual analysis of data was used throughout the research to monitor students' progress. Each student's behavior was tracked across 16-weeks of observation, with baseline data being gathered for 5 observation sessions prior to the intervention starting. This assisted with ensuring a trend in the student behavioral data was evident, and to assist with displaying the functional relationship between the intervention and possible student behavioral improvements. Following the fifth observation session the therapy box intervention training was initiated for all participants- which included student direct work and teacher training. The three-session Therapy Box intervention training was initiated between baseline data collection and intervention implementation. Following the training, the intervention was implemented across 11 total observation sessions for each student. No reversal procedure was attempted in this study because this clinician did not want to have the maladaptive behaviors return due to ethical concerns with this in the school and applied setting. Conducting the intervention across participants displays the replication effects of the intervention. Additionally, the improvements noted across participants from baseline phase to intervention phase indicates that there is a functional relationship between the intervention and the behavior targeted for change.

Training Procedures

The Therapy Box

Training for the Therapy Box is completed in three sessions, usually in an individualized therapeutic modality. The three-session training includes training for both the student directly and the teacher. The training session for children was conducted during the therapeutic directive play therapy session. In order to ensure successful outcomes, ensure the use of the behavioral intervention in the classroom, and to ensure fidelity of the intervention a teacher training component was also necessary. The following paragraphs describe the training sessions for both the student and the teacher.

Session One

Student Training. Implementation of the “Therapy Box” is simple. During the first session, the intervention is discussed, and the participant decorates the box, the purpose of the box is explained to the student, and possible tangible items to be placed inside the box are identified with the assistance of the client and results of the previous preference assessment. Didactic direct instruction is utilized and consists of a lecture related to the purpose and need of the intervention, and how the intervention is pertinent to the student and the classroom setting. Once the didactic portion is complete, a review session is conducted where the participant and the practitioner go through how to access the box and the practitioner answers any questions the participant may have. Following the review, the therapy box is shown to the participant and he or she is given immediate access to the box to explore. The box is then removed from the participant’s view and placed back in the original location in the classroom and out of reach of the participant.

The student training during the initial session includes assisting the student with identifying triggers for their maladaptive behavior, identifying their own personal physiological responses to the trigger, and identifying their current coping repertoire for managing the maladaptive behavior or feelings. The box is a tool to assist the student with self-monitoring, understanding their diagnosis and/or needs, and is used as a catalyst to assist the student with choosing healthier more appropriate responses to life stressors.

The box itself becomes a work of art created by the student in the first session based on individual preferences. During the preparation stages of the intervention, the student utilizes their time in session to decorate the box while the practitioner explains the purpose of the Therapy Box. The student is supplied with multiple mediums of art to choose from in order to design the box to personal preferences. Once the box is decorated, conversation with participant begins related to identifying anger, environmental factors that contribute to the maladaptive behavior(s), personal physiological responses to environmental cues that escalate into behavior, current coping skills in place for the student, and the ways in which the Therapy Box can be used as a replacement behavior during times of stress. During the initial session each item within the box is described to the student, the practitioner and participant role-play the effective use of the identified items within the box, and potential triggers for maladaptive behaviors outbursts are identified and discussed.

Teacher Training. Following the first student session or training, the practitioner and the student meet with the teacher to discuss the intervention, to allow the student to role play manding for the box with the teacher. This practitioner then trained the teacher over a 30-minute training session during teachers planning period, on the purpose of the box, the importance of replacement behaviors, and informing the teacher of students identified triggers, physiological responses to these triggers, and how to use the Therapy Box as a calming technique to deter maladaptive behavioral outbursts of the student. The

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teachers were also informed that initially the students will need assistance in remembering to mand for the box, and the teachers were trained to monitor student's physiological responses and offer the Therapy Box when student appeared stressed or displayed physiological signs of stress (precursor behaviors prior to a maladaptive behavioral episodes). The teachers were asked to keep track of the number of times the student was sent to the office for maladaptive classroom behaviors as a way of gathering information about the effectiveness of the box as an intervention.

Data collection practice and modeling was conducted during this training period until 100% accuracy was obtained in this training session. As previously indicated in Table 1, three training attempts were needed until the teachers met 100% accuracy in data collection. While using The Therapy Box, the practitioner should allow uninterrupted access to the box for a pre-determined and agreed upon time limit (2 minutes was the maximum amount of time to be offered but the student could return any time before the 2 minutes was up if calm). During this time, the teacher is only allowed to make non-directive, specific comments related to appropriate use of the items. If the teacher notes that the client is becoming agitated, he/she should offer the student the opportunity to calm down and/or go to a safe place to utilize their box, which was identified as the guidance counselor's office within the school.

Session Two

Student Training. Student training session two continued to work on identifying stressors, role playing the student manding for the box by encouraging the student to utilize a visual prompt for the teacher that the Therapy Box is needed (red break card), providing scenarios for problem solving purposes, and role playing utilizing the pre-identified calming techniques within the box. The second session serves as maintenance process, a monitoring session to determine if the student and teacher are utilizing intervention correctly, and a training session to encourage the use of the red break card as the manding procedure for access to the Therapy Box. Prior to session two, if the student did not request the box the teacher was prompted to offer the student a break with access to the box. Upon working with the students, the school social worker identified that the teachers did not always recognize their personal physiological responses to stress prior to a maladaptive behavioral episode, and it was important to this school social worker to teach the students to mand appropriately for a break, and in a way that cannot be overlooked by the teacher. The students were trained to use the red break card, as a manding procedure to gain access to the Therapy Box. The student was trained to raise the red card up high until the teacher observed the break card, and then the student could access the box.

Teacher Training. Teacher training session two, was conducted during the 30-minute teacher planning period, when the practitioner gathered data from teachers regarding the occurrences of office referrals due to maladaptive behaviors and inquire about students use of the intervention in the classroom. Teachers were trained to understand that the student will utilize a manding procedure where a red break card will be held up visible to the teacher, which indicates that the student is requesting a break to use the Therapy Box. This procedure was introduced due to the possible missed opportunity to offer the box as an intervention per student report, and in order to allow the student more autonomy and control of utilizing a break card manding procedure to gain control of emotions during times of stress. The teacher was encouraged to praise the

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student for appropriate manding, offer the student access to the box, and allow student time to calm down/ self-regulate before returning to the activity (which was predetermined as 2 minutes total).

Session Three

The third session served as a maintenance procedure, a monitoring session to determine if the student and teacher are utilizing the intervention correctly, a continued training session to encourage the use of the red break card as the manding procedure for access to the Therapy Box, and discuss student's feelings about progress. Teacher training session three, was conducted during the 30-minute teacher planning period, where the researcher gathered data from teachers regarding the occurrences of office referrals due to aggression, inquire about students use of the intervention in the classroom, their thoughts on the intervention, and a session to allow the teachers to provide information and feedback about the procedure.

Results

Results of the study indicate that the treatment package which includes the Therapy Box is a promising intervention for students who struggle with maladaptive behaviors that impede their academic progress in the classroom. The Therapy Box in conjunction with individual therapy sessions (which embed CBT practices by a trained professional), with teacher professional development and training, and continuous progress monitoring is a promising practice. Based on the data each student showed improvement in the intervention. Some student's behaviors went to zero occurrence after intervention, while others showed symptom reduction during the intervention. The following paragraphs will define the results of each student's progress through single subject's visual display of data for analysis.

Student 1 did show progress in the intervention as noted in Figure 1 below. Based on the data gathered the student's target behaviors during baseline ranged from 0 occurrence per session to 4 occurrences per session with an increasing trend. The data obtained during the intervention phase ranged from 0 to 1 occurrence with a decreasing trend by the end of the 16-week intervention.

The Therapy Box

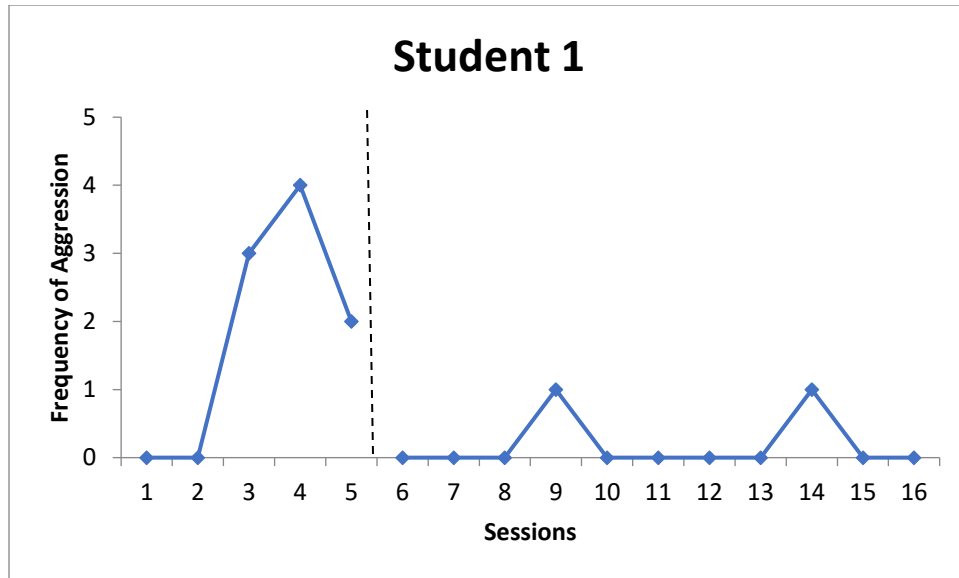


Figure 1.

Student 2 did show progress during the intervention phase as noted in Figure 2 below. Student #2's target behaviors during baseline ranged from 1 occurrence per session to 3 occurrences per session with an increasing trend. The data obtained during the intervention phase the target behaviors ranged from 4 occurrences per session to 0 occurrences per session with a decreasing trend by the end of the 16-week intervention.

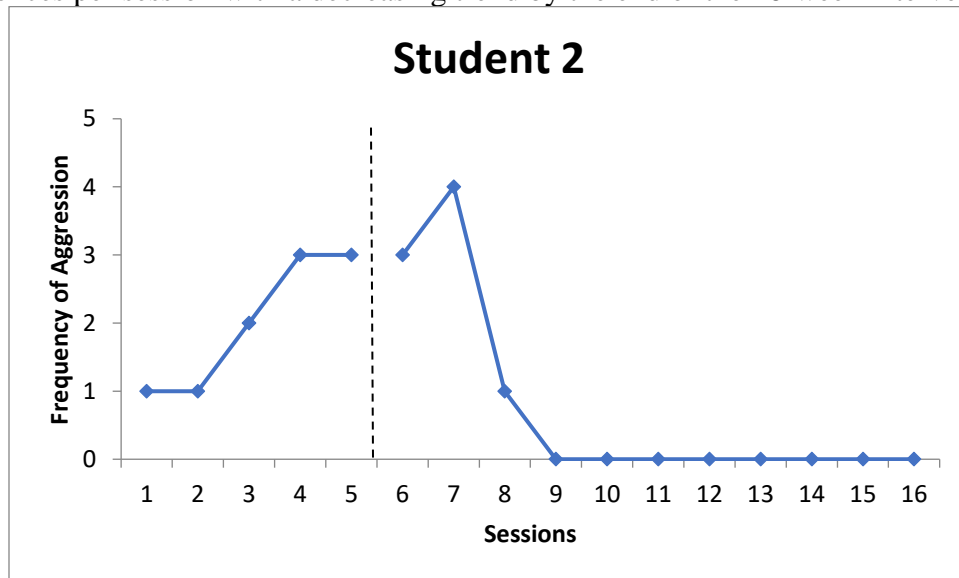


Figure 2.

Student 3 did show progress during the intervention phase as noted in Figure 3 below, but the results are more variable in nature. Student #3's target behaviors were gathered during baseline ranged from 2 occurrences a session to 6 occurrences per session with a variable trend. The data obtained during the intervention phase indicated that target behavior ranged from 3 to 0 occurrences with again a variable trend by the end

The Therapy Box

of the 16-week intervention. The intervention did seem to reduce the occurrence of the targeted behaviors, but this student’s success was not as evident as in other student data.

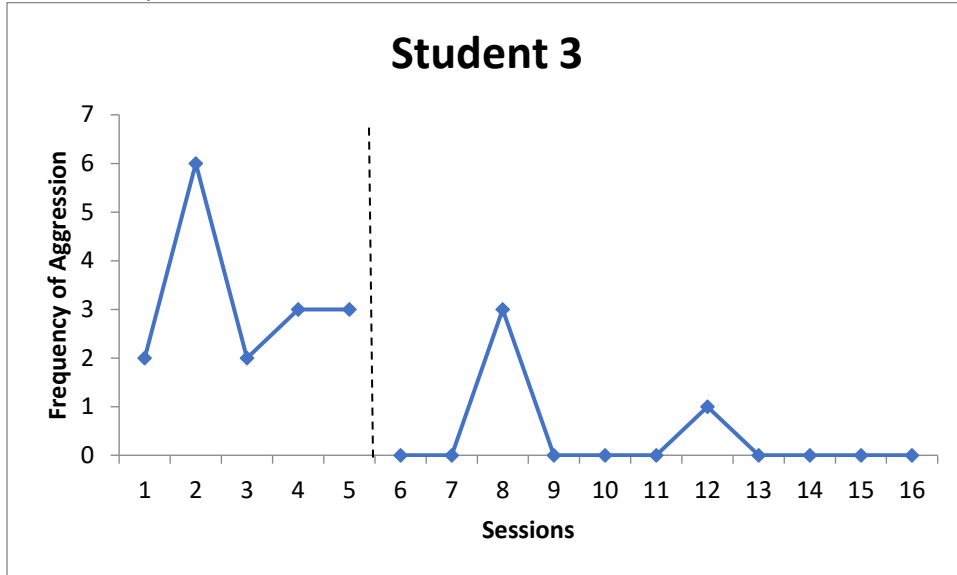


Figure 3.

Student 4 did show progress in the intervention as noted in Figure 4 below. Student #4’s target behaviors gathered during baseline indicated a range from 3 occurrences per session to 4 occurrences per session with steady state trend prior to intervention. The data obtained during the intervention phase on the target behavior ranged from 5 to 0 occurrences with a decreasing trend. The intervention did seem to reduce the occurrence of the targeted behaviors.

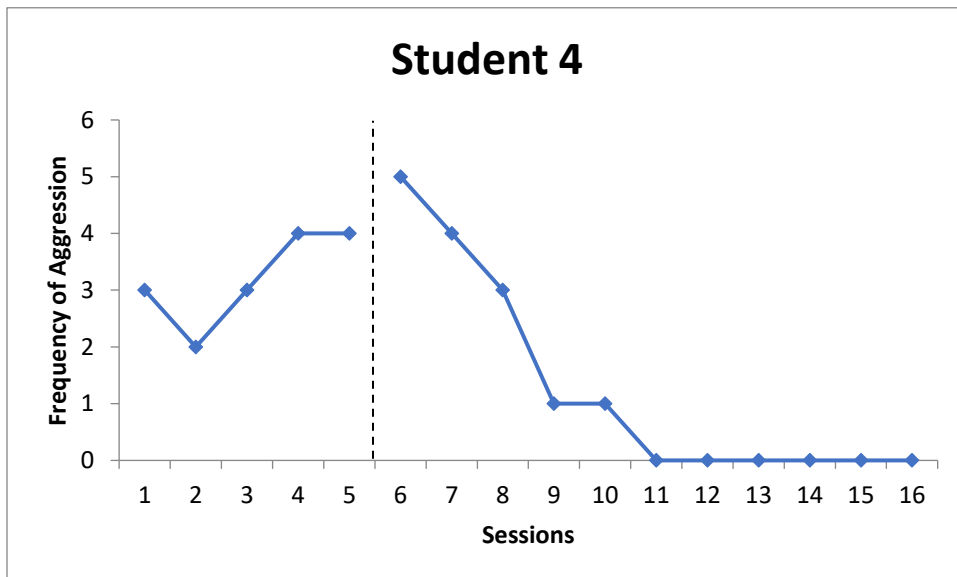


Figure 4.

Student 5 did show progress during the intervention phase as noted in Figure 5 below. Student #5’s target behaviors ranged from 0 occurrences per session to 3

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occurrence per session with a variable trend prior to the intervention. The data obtained during the intervention phase ranged from 4 to 0 occurrences with variable data and ended on a decreasing trend by the end of the 16-week intervention.

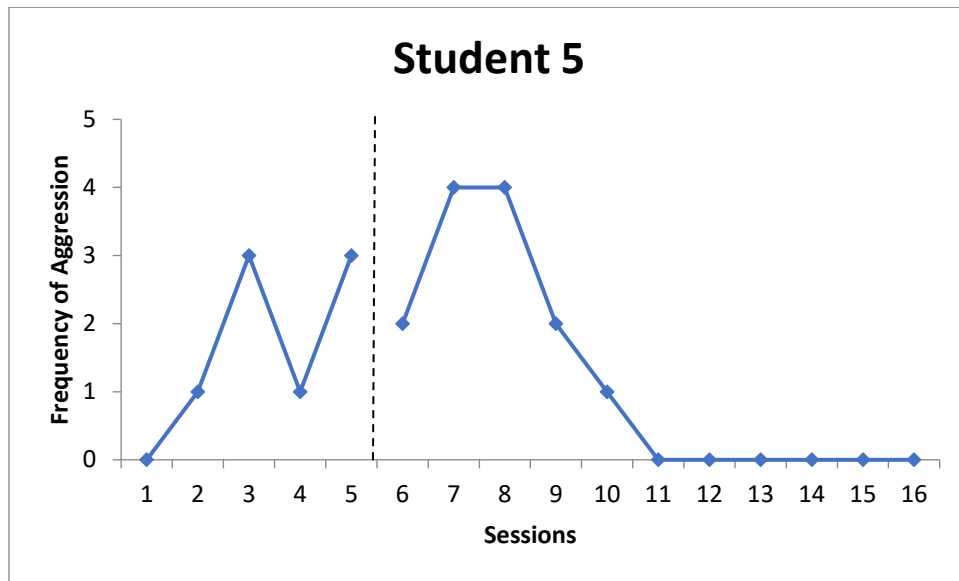


Figure 5.

Student 6 did show progress over the period of time when the treatment plan was implemented as noted in Figure 6 below. Student #6's target behaviors gathered during baseline ranged from 2 occurrences per session to 4 occurrences per session with an increasing trend prior to intervention. The data obtained during the intervention phase indicated that the target behaviors ranged from 4 to 0 occurrences with variable data and ended on a decreasing trend. The intervention did seem to reduce the occurrence of the targeted behaviors.

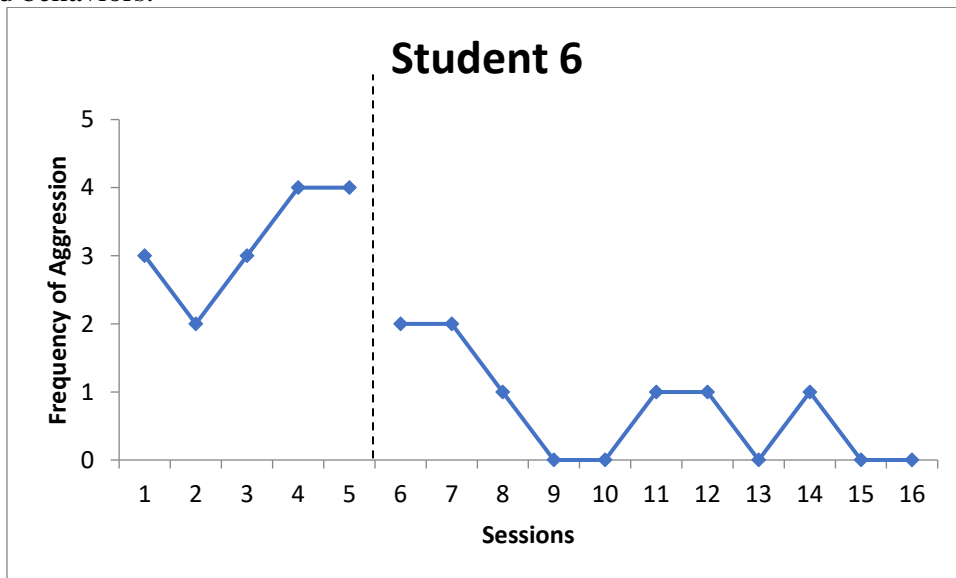


Figure 6.

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Student 7 did show progress over the period of time when the treatment plan was implemented as noted in Figure 7 below, but the results are not as clear that the intervention is the reason. Student #7's target behaviors gathered during baseline ranged from 5 occurrences per session to 3 occurrences per session with a decreasing trend prior to the intervention phase. The data obtained during the intervention phase indicated that the behaviors ranged from 3 occurrences per session to 0 occurrences per session with some noted variability in the data and with decreasing trend by the end of the 16-week intervention. In this case it is difficult to say if the intervention decreased the target behaviors as the data was moving towards a decreasing trend prior to the implementation of the treatment package intervention. The target behaviors may have improved on their own without the use of this intervention, but the results were still indicated as positive.

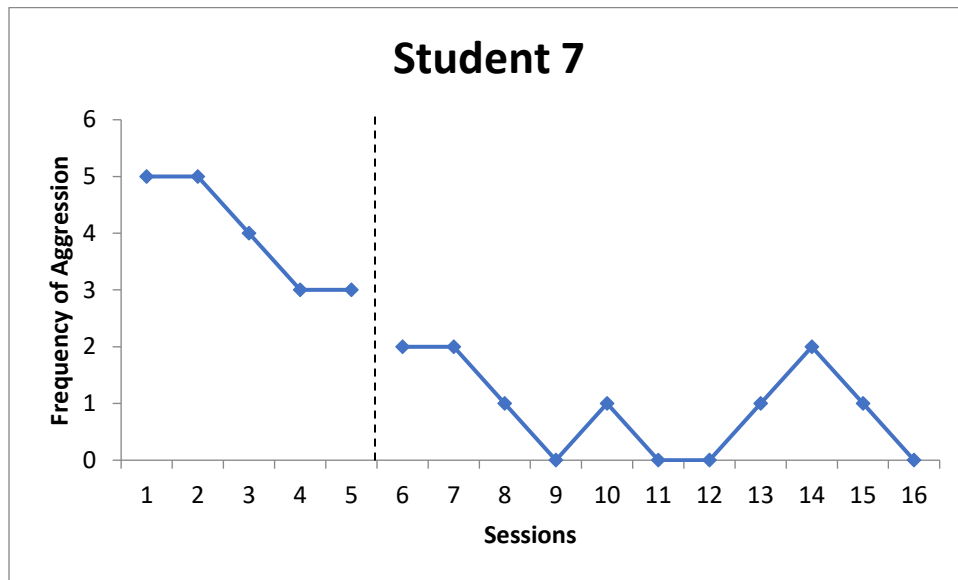


Figure 7.

Student 8 did show progress over the period of time when the treatment plan was implemented as noted in Figure 8 below, but the results are more variable in nature. Student #8's target behaviors ranged from 0 occurrences per session to 2 occurrences with an increasing trend. The data obtained during the intervention phase noted that the behaviors ranged from 2 occurrences to 0 occurrences by the end of the 16-week intervention with a decreasing trend and a noted spike in behavior possibly being an episode of spontaneous recovery.

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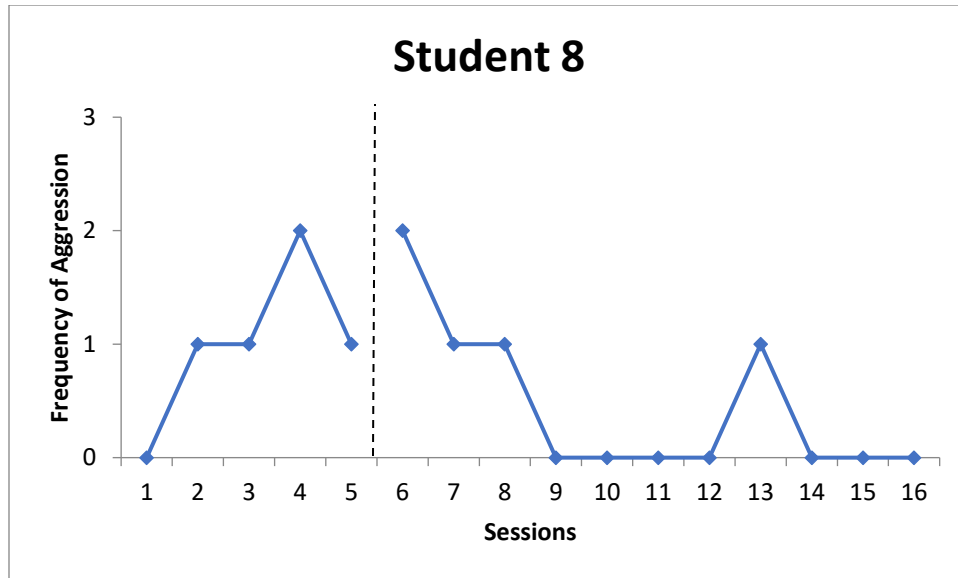


Figure 8.

Student 9 did show progress over the period of time when the treatment plan was implemented as noted in Figure 9 below. Student #9’s target behaviors gathered during baseline ranged from 2 occurrences per session to 4 occurrences with an increasing trend. The data obtained during the intervention phase noted that the target behavior ranged from 4 occurrences to 0 occurrences by the end of the 16-week session.

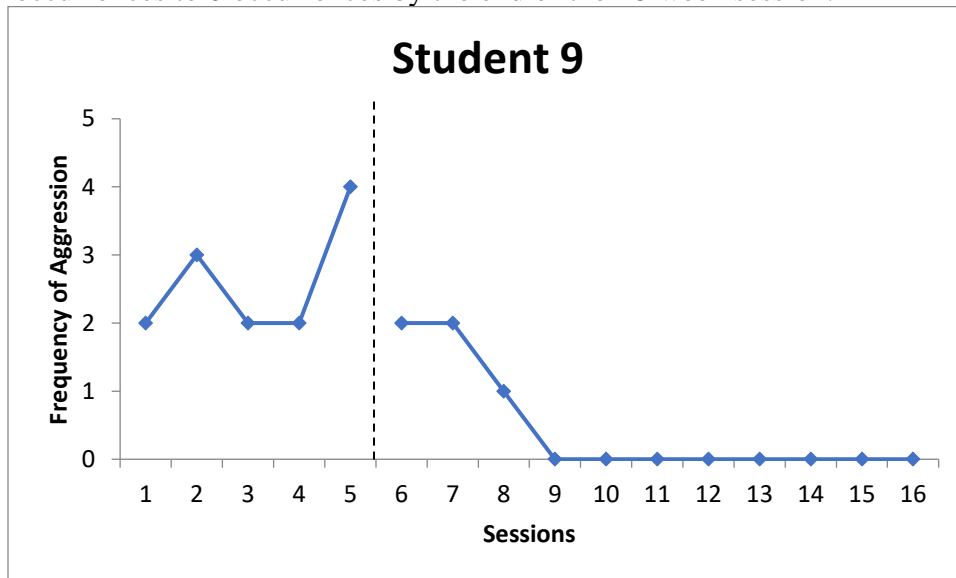


Figure 9.

Student 10 did show progress during the intervention phase as noted in Figure 10 below. Student #10’s target behaviors ranged from 1 occurrence per session to 4 occurrences with a noticeable increasing trend. The data obtained during the intervention phase noted that the target behavior ranged from 3 occurrences to 0 occurrences by the end of the 16-week session.

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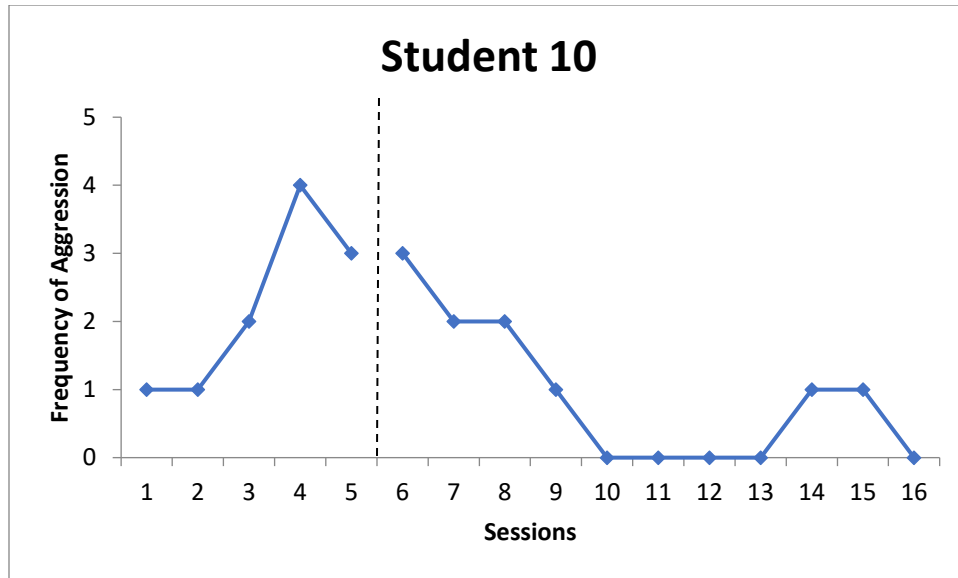


Figure 10.

Student 11 did show progress over the period of time when the treatment plan was implemented as noted in Figure 11 below, but the results are more variable in nature. Student #11's target behaviors gathered during baseline ranged from 5 occurrences per session to 3 occurrences with extremely variable data. The data obtained during the intervention phase noted that the target behavior ranged from 5 occurrences to 0 occurrences by the end of the 16-week session. Due to the lack of steady state data in baseline, it is difficult to determine if the intervention itself improved behavior or if the behavior would have improved on its own. It is evident that there was a decrease in the target behavior during the intervention phase.

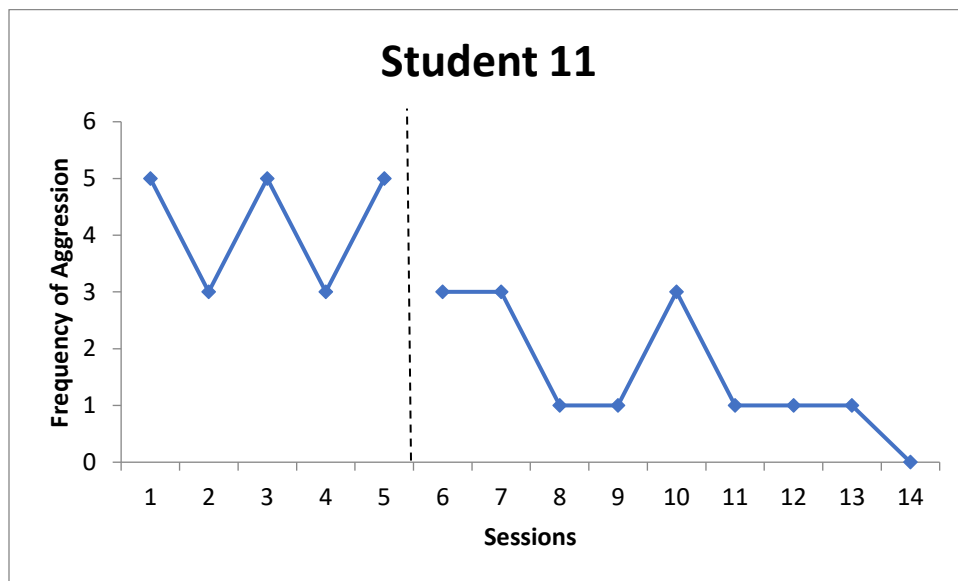


Figure 11.

The Therapy Box

Student 12 did show progress in the intervention as noted in Figure 12 below, but the teacher did a reversal design with this student against the researcher's request. The teacher did not feel that the treatment was effective and decided to stop the intervention. The teacher continued data collection per request of the school administrator, and what was found indicated that the intervention was a success for this student. Once the data was shared with the teacher the intervention was resumed with administrator's support and success was noted. This is the one student that received the A-B-A reversal design. This data was shared to show the reversal effects of the intervention. Student #12's target behavior during baseline ranged from 2 occurrences per session to 6 occurrences with an increasing trend moving towards intervention. The data obtained during the intervention phase noted that the target behavior ranged from 5 occurrences to 0 occurrences within four sessions; however, after session nine the teacher decided to stop the intervention and the data indicates a spike in behavior that ranged from 0 to 6 for the next four sessions. After the data was shared with the teacher displaying the negative effects of stopping the intervention prematurely it was re-implemented and the results indicated a drastic drop in the target behavior to a 0 level by the end of the 16-week session.

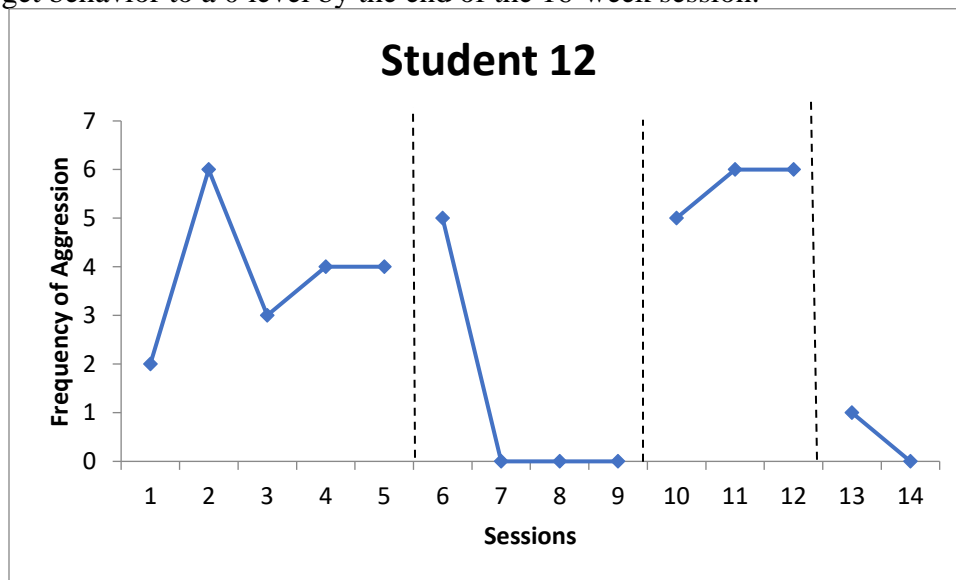


Figure 12.

Student 13 did show progress over the period of time when the treatment plan was implemented as noted in Figure 13 below. Student #13's target behaviors gathered during baseline ranged from 1 occurrence per session to 4 occurrences with an increasing trend. The data obtained during the intervention phase noted that the target behavior ranged from 3 occurrences to 0 occurrences by the end of the 16-week session.

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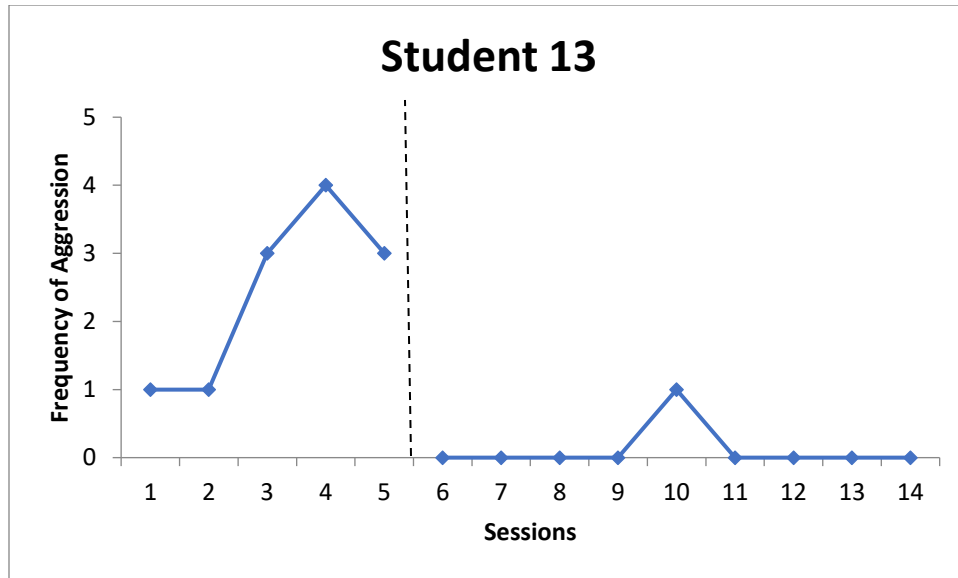


Figure 13.

Student 14 did show progress in the intervention as noted in Figure 14 below. Student #14's target behaviors gathered during baseline ranged from 1 occurrence per session to 4 occurrences with an increasing trend. The data obtained during the intervention phase noted that the target behavior ranged from 4 occurrences to 0 occurrences by the end of the 16-week session.

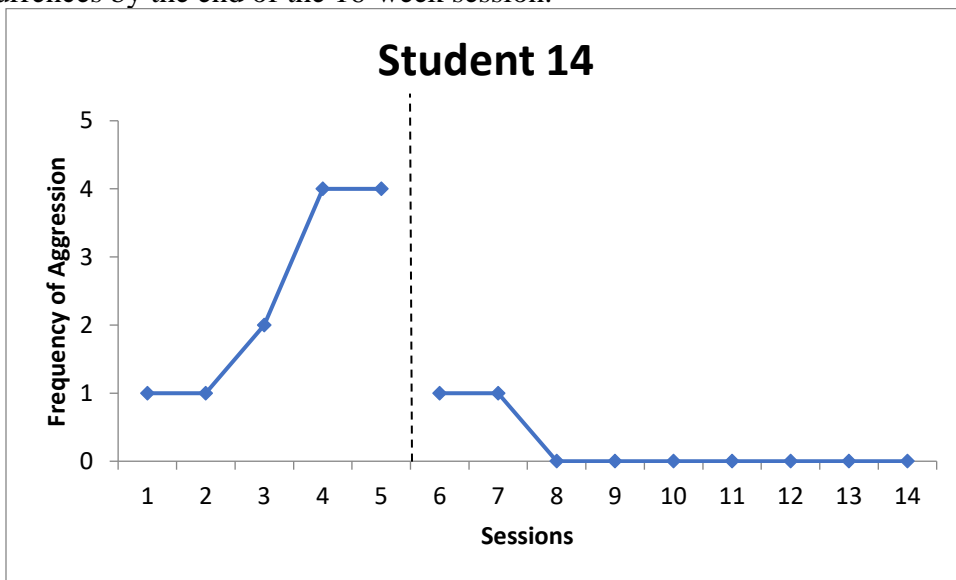


Figure 14.

Mean results also indicate an overall success with the Therapy Box interventions across the 14 participants. Figure 15 below indicates the average of the target behavior across the 14 students in baseline, and the average of the target behavior across the 14 students during the intervention. The mean of target behaviors is reflected in the Figure 15 and explained as follows: aggressive behaviors among the 14 participants were noted

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at a mean of 4.09 during baseline and 0.50 after intervention. The graph does note improvements in target behaviors from baseline to intervention.

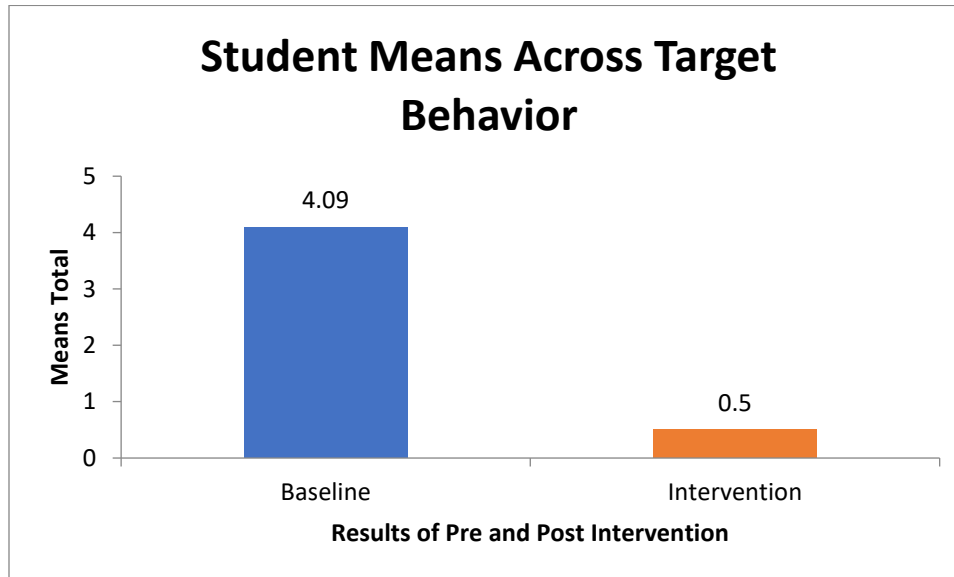


Figure 15. Student Means Across Target Behavior

Additionally, in order to maintain fidelity of the intervention and ensure the integrity of the data collection methods used by teachers, the researcher also included an interobserver agreement (IOA) process to monitor data collection fidelity among the teachers.

Table 1- Inter Observer Exact Agreement for Therapy Box Teacher Training

| Interval | Actual Count | T 1 | T 2 | T 3 | T 4 | T 5 | T 6 | T 8 | T 9 | # Equal | % Agreement |
|--------------------------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|---------|-------------|
| Modeling Data collection | 11 | 10 | 8 | 12 | 6 | 8 | 7 | 9 | 11 | 2 | 22.2% |
| Training Round 1 | 9 | 9 | 10 | 8 | 9 | 8 | 12 | 9 | 7 | 3 | 33.3% |
| Training Round 2 | 10 | 11 | 10 | 10 | 10 | 10 | 10 | 9 | 10 | 5 | 66.6% |
| Training Round 3 | 13 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 9 | 100.0% |

T= Teacher

Statistical Analysis

To evaluate the change in trend following the implementation of the therapeutic intervention, we conducted interrupted time-series analysis (regression discontinuity analysis or piecewise regression) following the methodology of Borraz and González (2009); Fernald et al. (2009); Ponce and Bedi (2010); and the UCLA Statistical Consulting Group (2017). In regression discontinuity or piecewise regression, a regression line is estimated on each side of a set cut off point, in this case the

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implementation of the therapeutic intervention. -. A significant regression line either before or after policy implementation represents a sloping line and a changing trend; non-significance indicates that the slope is not changing and that the effect of an intervention cannot be inferred (West, Biesanz, & Pitts, 2000). Regression is generally utilized in interrupted time series for which there are few data points (Blackwell, Mendes de Leon, & Miller, 2006; Brillinger, 2001) such as the present study.

Rather than conduct 14 separate regressions, we aggregated the data so each session was considered one independent observation that had occurred either before the intervention or after the intervention. We then conducted the regression to investigate the change in slope and intercept from “before” receiving the intervention to “after” receiving the intervention with the model specified as follows:

$$\hat{Y} = \text{Int}_1 + \text{Int}_2 + \beta_1 X_1 + \beta_2 X_2$$

This model utilizes the origin as the intercept, thereby the sum of $\text{Int}_1 + \text{Int}_2$ functions as the constant. The result is two regression lines in one regression, taking into account “before” and “after” implementation periods for the therapeutic intervention. We do not report r-squared because it is not appropriate due to the model’s specification.

Statistical Analysis Results

We conducted preliminary analyses to test for independence of observations (Durbin-Watson statistic, $d=1.075$, suggesting that the level of significance may be underestimated); for normality with the Kolmogorov-Smirnov statistic indicating it is violated (“before” $KS(216)=0.441$, $p=.000$; and “after” $KS(216)=0.178$, $p=.000$) but Box M statistic ($F(30, 6762.212)=14.240$, $p=.000$) indicating appropriateness of analysis, and linearity, for which the variable “after” implementation satisfies the assumption of linearity; but the variable “before” implementation much less so. We obtained significant regression results ($F(4,212)=98.552$, $p=.000$) reported in Table 1. The differences in slopes “before” and “after” implementation of therapeutic intervention can be seen in Figure 16.

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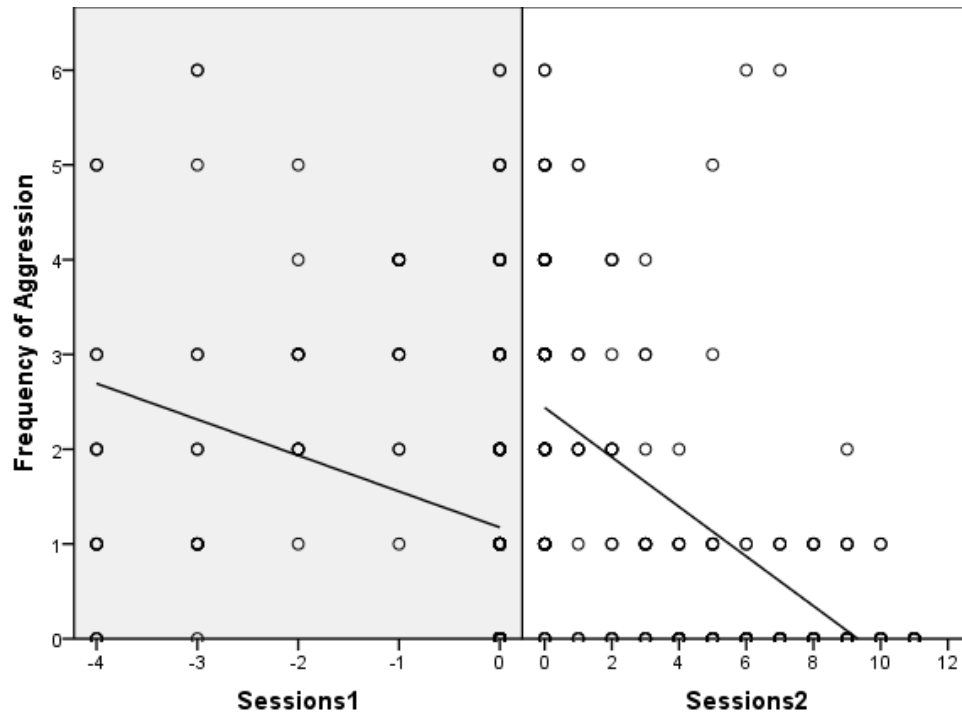


Figure 16 – Change in Slope “Before” and “After” Implementation of Therapeutic Intervention

The results of the piecewise regression mean that for every session before the implementation of the intervention, there is observed an increase in .443 in instances of aggression, and for every session after the implementation of the intervention, there is observed a reduction in instances of aggression of -.246. The results suggest that Therapy Box is an effective way to reduce instances of aggression among the students receiving the intervention.

Table 2 – Change in Slope “Before” and “After” Implementation of Therapeutic Intervention

| | β | Sig. | 95% CI |
|---|---------|---------|----------------|
| Intercept 1 | 3.643 | .000*** | [2.813, 4.473] |
| Intercept 2 | 2.322 | .000*** | [1.949, 2.696] |
| Frequency of Aggression “Before” Implementation | .443 | .004** | [.140, .746] |
| Frequency of Aggression “After” Implementation | -.246 | .000*** | [-.306, -.186] |

***p < .01 **p < .01. *p < .05.

Discussion

Based on the findings of this research, it appears that the Therapy Box was a successful intervention for all of the 14 students that participated in this study. The frequency of student maladaptive behaviors for many of the participants decreased to 0. There were a few students that did show improvement in the intervention; however, the

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frequency of maladaptive behavior never decreased completely to 0 nor did it maintain that level during the 16-week intervention. In these cases, it is important to remember that symptom reduction is also a sign of behavioral success in the field of educational social work and programming in the applied setting. Importantly, the results of piecewise regression suggest that Therapy Box could be an effective intervention for reducing instances of aggression. In conclusion, the Therapy Box is suggested as a possible intervention for students who display maladaptive behaviors within the classroom, but more research is needed on this intervention and process.

Future Research/Limitations

Future researchers should continue to evaluate the effectiveness of the Therapy Box treatment package and interventions that teach appropriate replacement skills and manding procedures for students at-risk for behavioral excesses and academic failure. Due to the small sample size, future research should be conducted with a larger sample.

Future researchers should look at this intervention across broader demographics, across different age groups, and across different school settings. Due to the limited and small sample size of this research further investigation is needed. For researchers that are in a more controlled environment (residential placements, inpatient facilities, day treatment programs, or alternative education environments) a reversal design could be implemented and monitored more closely to ensure the safety of the students and faculty. A reversal design would strengthen this research and based on the one sample student behavior results where a reversal was administered by the teacher, indicates that this could be a strong advantage to reversal design with this intervention.

Future research should not only look at the frequency of identified target behaviors, but also the frequency of appropriate manding produced by the student following the training sessions and intervention initiation. In addition, intervention treatment integrity should be studied more closely in future, as well as follow up research to investigate the lasting impact of the intervention overtime.

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Appendix A

Appendix A.



Simple shoebox, example



Decorated outside of the box, example



Interior of the box with preferred items and activities, example

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Appendix B

Behavior Data Collection Sheet

Child: Sample Kid

Directions: The parent will monitor child’s behavior and keep a frequency count of the three target behaviors noted below. The teacher simply makes a hash mark in the appropriate row and column to represent the behavior. The frequency count will assist us in determining how recurrent the behavior is and will assist in monitoring behavioral progress. Terms are defined below for clarity of data collection. These three target behaviors were identified through the previous data collected by the teacher and assessment findings.

Target Behaviors defined

Behavior 1:

Behavior 2:

Behavior 3:

Week 1 Date: _____

| Bx | Monday | Tuesday | Wednesday | Thursday | Friday | Sat | Sun |
|-----------|--------|---------|-----------|----------|--------|-----|-----|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Week 2 Date: _____

| Bx | Monday | Tuesday | Wednesday | Thursday | Friday | Sat | Sun |
|-----------|--------|---------|-----------|----------|--------|-----|-----|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

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