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BEHAVIOR RESPONSE AND INTERVENTION NAVIGATION AND ITS EFFECTS ON A SELECTION OF MIDDLE SCHOOL STUDENTS: A PROGRAM EVALUATION

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BEHAVIOR RESPONSE AND INTERVENTION NAVIGATION AND ITS EFFECTS ON A SELECTION OF MIDDLE SCHOOL STUDENTS: A PROGRAM EVALUATION

A DISSERTATION APPROVED FOR THE

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

BY

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DEDICATION

This dissertation is dedicated to the children who find themselves in need of Tier 3 behavior interventions. Please know, as educators, we are constantly searching for ways to assist you in your educational journey.

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Abstract

Effective school-based tier 3 behavior intervention programs focus on behavior monitoring and self-management techniques with reinforcement, teaching replacement behaviors, establishing individual student goals, and offering a parental component in order to improve student behaviors. Very few individual studies link the improvement of student behaviors to the impact on student success in school environments. The Behavior Response and Intervention Navigation (BRAIN) program is a school-based Tier 3 program. The purpose of this outcomes-based evaluation research study was to describe the impact the BRAIN program had on the overall quality of the educational experience for the four students who voluntarily participated in the BRAIN program. Extant data were collected on behavioral and academic indicators for the participants within the program to determine the impact of the BRAIN program. Data were collected for an additional year following students' involvement in the program to determine if students were able to generalize their behavioral and academic progress beyond the intervention years. The BRAIN participants attended school on a more regular basis, lowered their number of office referrals, and displayed growth on math and reading objectives on the state mandated assessments during the intervention. Post-intervention data indicated mixed results for generalization of skills with the participants. The study concludes with possible implications and ideas for future studies.

School violence surfaces in varying degrees; however, the results are generally the same: threatening environments, physical harm to students and staff, and aggressive behavior in the classroom (Cubukcu & Donmez, 2012). This violence does not merely have immediate consequences; it can also cause long-term consequences to everyone involved:

> Everyday violence, such as physical assaults and fighting, threats and intimidation, sexual harassment, or bullying, is clearly less explicit than lethal school violence, yet the immediate and long-term consequences can be similarly devastating for those students who experience it, who perpetrate it, or who are exposed to it. (Theriot, 2008, p. 223).

Challenging behaviors in school are often met with an increased number or intensity of punitive disciplinary procedures (Lassen, Steele, & Sailor, 2006; Sugai & Horner, 2002; Utley, Kozleski, Smith, & Draper, 2002). However, research suggests that educators should seek solutions that remove or lessen the threat of violence within the school environment (Chen, 2008) in a way that encourages the violator toward permanent change without any adverse side effects. It was this search for solutions that led a school district to develop the Behavior Response and Intervention Navigation (BRAIN) program for a group of students needing a Tier 3 behavior intervention program. The district's expectation was for positive qualitative and quantitative improvements in educational, social, and behavioral changes for students who had a history of anti-social behaviors, suspensions and/or time away from school. The purpose of this study was to complete an outcomes-based evaluation for the BRAIN program through the use of a quantitative case study research procedure. Outcome evaluations determine the extent to which a program

makes a difference and whether the program participants have improved (Martella, Nelson, Morgan, & Marchand-Martella, 2013).

Literature Review

Unfortunately, the typical response to problem behavior in school settings is the isolation of the student who is a threat such as in-school suspension, placement in a special education setting (with an individualized educational program or a Section 504 plan), placement in an alternative setting, or out-of school suspension (with or without educational services provided) (Dupper, Theriot, & Craun, 2009; Morrissey, Bohanon, & Fenning, 2010; Oklahoma State Department of Education, 2016). Lassen et al. (2006) and Morrissey et al. (2010) agree that such strategies are not only ineffective in changing behavior but rather exacerbate the problem and tend to cause repeat offenses.

These repeat offenses result in another long-term problem—increased risk of dropping out of school. Noltemeyer, Ward, and Mcloughlin (2015) conducted a meta-analysis of 34 studies and identified a statistically significant relationship between suspensions and dropout in 11 of these studies. The cases studied had a mean student age of 13 and a mean student grade of eighth. The majority of cases (62.3%) focused on out-of-school suspensions. Although causality could not be inferred, the meta-analytic technique provided an evidentiary base for reconsidering schools' reliance on suspension as a means for addressing misbehavior. Balfanz, Byrnes, and Fox (2015) demonstrated a correlation between suspension and dropping out in their research by relating ninth grade suspension to students' high school and postsecondary outcomes. Their research found that one suspension during the ninth grade year was directly associated with an increase in the risk of dropping out, from 16% to 32%. According to Marchbanks et al. (2015)

even one in-school suspension during any given school year raised the likelihood of a student dropping out by 24% during that same school year when compared to a student who was not disciplined in that manner.

There is evidence that if schools respond differently to misbehavior and refrain from suspensions, students may be less likely to drop out. For example, Marchbanks et al. (2015) examined suspension environments that were exclusionary in nature (in and out of school settings such as expulsion and alternative settings). The authors found the dropout rate within their study would be 14% lower if school suspension could be eliminated. Further, they found that there is a monetary benefit of eliminating suspensions. They estimated that the total lifetime savings for each student cohort, that dropped out associated with school discipline, would be between $750 million and $1.35 billion dollars in lost wages. As highlighted by Marchbanks et al. (2015), their analysis shows that exclusionary disciplines are associated with serious economic costs for both students and the state.

Hemphill and Hargreaves (2009) examined the impact of school suspensions on antisocial behavior and violent behavior by surveying approximately 6,000 adolescents twelve months after their suspensions. The self-report survey covered a range of behaviors including antisocial behavior, violent behavior, alcohol and other drug use, depression, and self-harm. The results showed that students who were suspended from school were 50% more likely to engage in antisocial behavior and 70% more likely to engage in violent behavior in the 12-month follow-up. Another influential factor was poor grades, which increased the likelihood of antisocial behavior (odds ratio of 1.3). Hemphill and Hargreaves (2009) encouraged schools to include prevention programs that

teach social, interpersonal, problem-solving and conflict resolution to students. They also suggested schools collaboratively work with parents to offer self-help groups and educational opportunities. To Hemphill and Hargreaves (2009) a disciplinary issue was a whole school issue, and they proposed a restorative preventative approach as an alternative to the use of suspensions.

Educators are not the only ones, however, that resort to removal from the educational setting as a solution to behavioral issues. A parent's response to their child's violent or antisocial behavior is often to seek out help from health professionals that may lead to a removal from the typical school setting and a temporary stay in a mental health facility (Faust & Scior, 2008; Wodehouse & McGill, 2009). Even when students are placed in mental health facilities for treatment, the time spent within these environments is often not the length of time needed to address their needs completely (Polvere, 2011). The time spent in mental health facilities is often cut short due to various issues such as gaps in adequate mental health services or difficulty accessing these services for their children (Gould, Beals-Erickson, & Roberts, 2012; Jacobs et al., 2016). As a result, students often return to schools with incomplete information regarding their behavioral needs (Faust & Scior, 2008), and/or on medication that is not helpful to their needs (McGill, Papachristoforou, & Cooper, 2006). Families and children are often left confused or unable to identify the appropriate services needed for their mental health problems (Faust & Scior, 2008). Returning to the school setting leads full circle back to the schools' punitive responses and to the placement of students by the district in settings where resources needed to support are not always present (Demissie & Brener, 2017).

Consequently, schools must investigate and implement programs to address the extreme behavior of students.

Fortunately, there is a significant research base on effective responses to student misbehavior in school settings. According to the U.S. Department of Health and Human Services (2001), effective school-based programs need to focus on increasing positive student behavior through monitoring and reinforcement of positive student behaviors, teaching social/life skills, and utilizing non-punitive methods of control. Harrison, Vannest, Davis, and Reynolds (2012) completed a study identifying the most common problems in classrooms in the United States as reported by teachers. Their research indicated that teaching appropriate behavior, replacement behaviors, and coping strategies create lifelong skills for students to be successful contributing members of society. Several studies have found behavior monitoring and self-management techniques, with and without reinforcement, to be effective in improving school behavior (Chen, 2008; Davis et al., 2014). In their research of different treatment programs for children with disruptive disorders, Eyberg, Nelson, and Boggs (2008) stressed the need for school-based programs that focused on basic behavior principles for modifying child behavior, monitoring student behaviors, and developing and implementing behavior modification interventions to improve student behavior.

Based on the research literature, programs for students with problem behaviors should include the following components: self-management with individualized goals, leveled reinforcement programs, school wide positive behavior support, and a parent education piece (Chen, 2008; Davis et al., 2014; Eyberg et al., 2008; U.S. Department of Health and Human Services, 2001). The following sections review the research regarding

each of these necessary components and findings as they relate to the behaviors addressed and their relationship to academic success. A critical link that also needs to be explored is the assertion that children's ability to develop emotional self-regulation skills, along with their ability to learn and achieve within their academic setting, is dependent upon a support system within their educational and home environments (Djambazova-Popordanoska, 2016; Garner, 2010).

Self-Management Systems

Self-management techniques are purposeful responses by an individual to change or maintain some aspect of his or her future behavior (Fisher, Piazza & Roane, 2011). Self-management techniques include self-monitoring, self-recording, self-observation, goal setting, self-evaluation, self-instruction, and strategy instruction (Martella, Nelson, Marchand-Martella & O'Reilly, 2011; Rafferty, 2010). Within self-management strategies, students strive to reach independence and maintain positive outcomes, as well as generalize new skills beyond the initial settings (Chafouleas, Hagermoser-Sanetti, Jaffery, & Fallon, 2012). Studies involving children with typical developing needs (Davis et al., 2014), as well as children with emotional and behavioral disorders often utilize self-management procedures (Briesch & Chafouleas, 2009). One such procedure is self-monitoring. There are two ways self-monitoring can be utilized. First, self-monitoring can be used alone. Second, self-monitoring can be utilized with the addition of contingent reinforcement (Davis et al., 2014). Previous research has investigated the comparative effects of these approaches.

For example, McLaughlin (1984) compared the use of self-monitoring alone to self-monitoring plus the addition of backup consequences for accurate self scoring as an

intervention for behavior feedback. The academic setting was an elementary self-contained special education classroom with 12 students with behavioral disorders. The students were randomly placed evenly in one of the three groups (two intervention groups and a control group). The students in the self-monitoring group indicated whether they were exhibiting a given behavior. In the self-monitoring plus backup consequences group, the students and a classroom aide independently recorded a specific response based on the presence or absence of a targeted behavior. Tokens were earned based on an 80% agreement with the observer. This study also included a control group in which the students were given their assignments, asked to complete them, and turn them in when completed. The results indicated a statistically significant improvement in both on-task behavior and percentage of assignments completed for all participants in the intervention group with no significant differences between the self-monitoring group and the self-monitoring plus matching group. While not an intended result of the research, the study indicated the group of students accurately self-recording actually performed at higher levels as compared to the group only self-recording. No specifics were given.

Freeman and Dexter-Mazza (2004) extended the research of McLaughlin (1984) to further analyze the effects of self-monitoring and self-monitoring involving some form of adult feedback as a method of establishing accuracy on on-task behavior and assignment completion of students with disruptive behavior in typical classroom settings. The study was conducted in a special education school at a residential facility for youth with conduct problems. Freeman and Dexter-Mazza (2004) attempted a more structured evaluation of the influence of self-monitoring by comparing self-monitoring alone and self-monitoring plus adult feedback for students with significant behavior problems by

implementing a timing process. An interval recording system was used to document the occurrence of specific targeted behaviors. Baseline data were taken prior to the implementation of the intervention, followed by self-monitoring by the student alone, and finally self-monitoring plus matching data gathered by the teacher's aide in the classroom. Results demonstrated self-monitoring plus matching the adult's feedback decreased targeted behavior problems by approximately 50% as compared to self-monitoring alone with a 23.6% decrease. Freeman and Dexter-Mazza (2004) suggested isolating the influence of providing a reward contingent on engaging in the self-monitoring response data, fading out the adult feedback over time, and determining whether self-monitoring plus matching could be useful for targeting academic or social skills and classroom behavior. The later target was mentioned, but not measured.

Gumpel (2007) also compared self-monitoring with non-contingent reinforcement with self-monitoring with contingent reinforcement. This study took place in a special education elementary school setting with children (ages 10-12) who had behavior disorders. The non-contingent reinforcement condition involved self-monitoring of the occurrence or nonoccurrence of the target behavior in a given time frame. The contingent reinforcement condition included positive reinforcement based on the student's data showing an increase in positive behavior or a decrease in negative behavior. Students were also told their behavior would be recorded by the researcher and checked at the end of the period. Self-monitoring with non-contingent reinforcement made an immediate behavior change with one student; however positive behavior was not sustainable over baseline. Self-monitoring with contingent reinforcement improved positive interactions

as well as reduced negative interactions. Again, no academic data were taken to coincide with the behavior changes.

Utilizing an alternating treatment design, Graham-Day, Gardner, and Hsin (2010) sought to determine whether self-monitoring alone was effective in increasing on-task behavior or if self-monitoring with reinforcement was needed. Tenth-grade students with Attention Deficit Hyperactivity Disorder (ADHD), who were in a classroom setting, were asked to indicate yes or no on a checklist based on their behavior at the time when prompted during the baseline and self-monitoring conditions. The self-monitoring with reinforcement involved the same procedure as the self-monitoring condition with an added reinforcer for agreement with the observer. Although this was a class-wide intervention, data were limited to three students within the room. The average on-task behavior for the first student improved from 51% during baseline to 92% during the self-monitoring alone condition; the student's on-task behavior further improved to 93% during the self-monitoring with reinforcement for accuracy condition. The second student's on-task behavior improved from 46% during baseline to 75% during the self-monitoring alone condition; the student's on-task behavior increased to 96% during the self-monitoring with reinforcement for accuracy condition. The third student's on-task behavior also showed improvement, increasing from an average of 47% during the baseline condition to 64% during the self-monitoring alone condition, and finally to 96% during the self-monitoring with reinforcement for accuracy condition. Therefore, all three students showed a marked improvement on the targeted behavior with self-monitoring. While the first student did not show a large improvement in on-task behavior between the self-monitoring alone condition and the self-monitoring with reinforcement for accuracy

condition, there were large improvements for the other two students indicating a functional relationship between self-monitoring with reinforcement for accuracy and the on-task behavior. No direct correlations between on-task behavior and improved grades were made. Academic performance was measured by subject grades. Grades for the three students actually lowered overall from the beginning to the end of the study. No specific academic content area was tracked and academic performance was broadly defined.

In most studies found, the self-management intervention was a self-monitoring technique paired with an adult accuracy condition and the reinforcement being presented at the school level. Lower et al. (2016) investigated the effects of a peer-matching self-management intervention with the reinforcement coming from school and the parent. The target was disruptive behaviors in the general education classroom. The procedures included self-recording and peer-recording of targeted behaviors at given intervals, matching the recordings of paired students, awarding points based on matches, exchanging points for student-selected rewards at school (i.e. computer time, prize box), praise by peer/teacher, daily electronic teacher/parent messaging, and praise/reward from parents (i.e. money, computer time at home, time with parent playing a game). The earlier phases of this study involved Class-wide Function-related Intervention (CW-FIT) introduced in the classes a few days a week (Caldarella, Williams, Hansen, & Wills, 2015) and was not found to be successful in reducing the disruptive behavior of the participants. The first participant's baseline had a mean rate of 32 disruptions per 15-minute interval, decreasing to 21 with the implementation of CW-FIT, and decreased again to a mean of 5 with the implementation of peer-matching self-management final phase. The second participant's baseline had a mean rate of 30 disruptions per 15-minute

interval, decreasing to 23 with the implementation of CW-FIT, and decreased again to a mean of 6 with the implementation of peer-matching on the final phase. When questioned about the intervention, the students had mixed responses about liking the technique or not. Both peer partners, however, liked using the self-management card, earning the rewards, and helping another student. The teachers reacted with positive comments regarding the students resolving their frustrations more calmly and wishing the intervention had come along sooner. It was noted for further research to demonstrate the correlation between effectively managing behavior problems and the increase of academic engagement of students.

Overall, it has been shown that self-monitoring can be an effective behavior management tool without reinforcement for accurate monitoring for some students (Graham-Day et al., 2010) while other students need the addition of contingent reinforcement. Hansen, Wills, Kamps, and Greenwood (2014) questioned the ultimate reason for behavior changes within a self-management program given that there are essentially two variables present. First, students are reinforced for improved behavior such as on-task behavior. Second, students are taught to monitor their own behaviors after functional behavior assessments were completed to include treatment packages with reinforcement designed to meet each students' individual needs. The Hansen et al. (2014) investigation was conducted with students who were diagnosed with an emotional disturbance. Four conditions were included in the study to including baseline, self-monitoring, self-monitoring with reinforcement, and reinforcement with no self-monitoring. The self-monitoring with reinforcement resulted in a substantial decrease in problematic behavior and a substantial increase in on-task behavior. When looking at the

two conditions of self-monitoring alone and reinforcement with no self-monitoring, neither increased the desired behavior nor decreased the disruptive behavior on a consistent basis. The researchers indicated that while self-monitoring alone initially made an impact on targeted behavior, both behaviors returned to baseline within a few sessions. With the addition of reinforcement to self-monitoring, across multiple conditions for all students, there was an increase in the desired behavior and a decrease in the disruptive behavior that maintained, demonstrating a need for the addition of reinforcement to a self-monitoring program for maintenance of targeted behaviors to be achieved. There was no mention of how this behavioral change affected any areas of academics for the students.

In all of the studies comparing self-monitoring alone to self-monitoring with contingent reinforcement, the latter was shown to be more successful with the majority of students. Whether rewarded in tokens (McLaughlin, 1984), stickers (Gumpel, 2007), small treats and adult praise (Freeman & Dexter-Mazza, 2004), or praise by their peers and rewards at home, (Lower et al., 2016) students found the payoff of a reinforcement worth the additional effort to perform. Self-management is a purposeful technique all individuals can use and the contingent reinforcements can be created by those around us or by ourselves. As Graham-Day et al. (2010) pointed out and illustrated through many of the other research examples given (Freeman & Dexter-Mazza, 2004; Gumpel, 2007; Hansen et al., 2014; McLaughlin, 1984), the relationship between self-monitoring and academic achievement is not as apparent in the literature and needs to be explored.

Leveled Programs

The concept of a "level system" was originally presented in 1968 by Hewett within the methodology of what he referred to as an "engineered classroom" (Mastropieri, Jenne, & Scruggs, 1988). The classroom was based pragmatically on behavior modification: the selection of suitable educational tasks for the students to do, a meaningful reward for completing the tasks, and a degree of structure determining the conditions for the reward system. Adaptations of the original leveled system were implemented in treatment centers (Jones, Downing, Latkowski, & Ferre, 1992) and separate school settings (Braaten, 1979). Jones et al. (1992) described the leveled system as a contingency list of responsibilities and privileges, along with automatic behaviors for dropping down a level. They went on to stress that level systems condition appropriate behaviors by fading artificial training prompts, thinning of reinforcement density and transferring stimulus control from treatment/training cues to cues present in the natural environment.

As variations of this original model were replicated, Mastropieri et al. (1988) sought to describe the implementation of a level system within a high school setting for students referred to as socially withdrawn. This group also included students who displayed attention deficits and hyperactivity, abusive language, antisocial behavior, and defiant or aggressive behaviors. The levels created were color coded and each was associated with specific rules and privileges. The students remained in each level for one week before being given an opportunity to request a level change. Results of the behavioral data indicated total class targeted behavior decreased after implementation. Mastropieri et al. (1988) pointed out the goals within the level system parallel those of

Public Law 94-142 in that total mainstreaming typically represented the least restrictive alternative. Mastery of the highest level of performance meant the student was capable of making progress toward independence in the general education setting. Commonalities among the leveled systems were a specific list of expectations, requirements and privileges associated with each level and specific requirements for moving up or down within the level system. An academic result of Mastropieri et al. (1988) indicated before implementation of the level system, students were averaging 76% completion of assignments. When the level system was initiated, the average completion of assignments rose to 96%. Similar results were evident in accuracy of assigned work, averaging from 90% accuracy before to 97% accuracy upon implementation of the level system.

In the training of school psychologists working with students diagnosed with serious emotional disturbance/behavior disorders, Backner (2010) developed *The Step Up to Good Behavior* level system. This point-generating system, based on positive reinforcement, was designed to modify the behavior of an individual student in the classroom who was not responding to existing class-wide strategies. The intervention was based on the identification of target problem behaviors, recognition of appropriate reinforces and privileges to earn, and the establishment of a system of levels and rewards. The system involved increasing levels of privileges that supported student choice. The goal being students learn to manage their own behaviors. Although there are no direct studies validating this specific intervention (Backner, 2010), the components integrated within the level system are evidence based (i.e. level systems, verbal praise) (Hester, Hendrickson, & Gable, 2009), and reinforcement with self-monitoring components (Hansen et al., 2014).

School Wide Positive Behavior Support

An example of a school wide behavior management framework is Positive Behavior Intervention and Supports (PBIS). PBIS is an evidenced-based, multi-tiered systematic approach of interventions and support for students addressing social/emotional development and academic success. The core elements of PBIS are addressed within an organizational system with teams made up of administrators and behavior specialists providing training, policy, and organizational support.

This multi-tier approach focuses on setting school-wide behavioral expectations for the entire student body as a primary level of behavioral intervention. The primary tier (or Tier 1) is intended to prevent social and behavior problems by defining and teaching social and behavioral expectations, establishing a reward system for appropriate behavior, setting clearly defined consequences for problem behavior, collecting and utilizing data for decision-making, and establishing a universal screener for behavior support (Horner et al., 2014). Approximately 80-85% of students respond positively to the primary level of support (Gagnon, Rockwell, & Scott, 2008).

Those students not responding favorably to school-wide prevention systems and who need supplementary secondary support (or Tier 2) represent approximately 5-15% of the student population (Gagnon et al., 2008). Horner et al. (2014) define the strategies at the secondary level as increasing structure and predictability, increasing adult feedback, linking academic and behavioral performance, increasing home/school communication, collection and use of data for decision-making and basic-level function based support. Gagnon et al. (2008) indicated approximately 5-15% of the student population at the

secondary level receive (a) social skills support groups, (b) school counseling programs, (c) peer mediation, and (d) increased monitoring and accountability.

Additional individualized support is needed for 1% to 5% of the student population at the tertiary level (or Tier 3). The tertiary level of support involves individualized programming for students with the most intense behavior issues (Horner et al., 2014). The interventions and strategies involved at the tertiary level include team-based comprehensive assessments and individualized intervention-based assessment information focusing on (a) the prevention of problem contexts, (b) instruction on functionally equivalent skills and instruction on desired performance skills, (c) strategies for placing problem behavior on extinction, (d) strategies for enhancing contingent reward of desired behavior, and (e) use of negative or safety consequences if needed (Horner et al., 2014).

Muscott, Mann and LeBrun (2008) examined the impact of PBIS on student behavior for students in pre-kindergarten through high school in 22 schools over a two year period. Muscott et al. (2008) reported a reduction of 6,010 office discipline referrals and 1,032 reports of suspensions, with the most benefit coming from the middle and high school level. Training was provided to teachers prior to the onset of the implementation, as well as throughout the data collection years. Each school was asked to set up a systematic set of plans and procedures for communicating, teaching, and practicing the features of the elements of the universal PBIS system with school staff, families, students, and community members. The key behaviors associated with the expectations were taught to students in context using effective instructional strategies, preferably by prioritizing one location at a time (e.g., hallways, cafeteria, recess, etc.). The key

behaviors to address were chosen by each individual school based on their need and ranged from self-regulation in the classroom to social development involving peer relationships. Collectively, the 22 schools reduced office discipline referrals by 28% between the first and second years of implementation; with the middle school having 2,635 fewer office referrals (36% reduction) and the high schools having 2,837 fewer office referrals (33% reduction). Data were also collected for in-school (ISS) and out-of-school (OSS) suspensions for the same 22 schools. ISS was defined as a consequence for a referral that results in a period of time spent away from scheduled activities or classes during the school day. OSS was defined as a consequence for a referral that results in a one to three-day period of time when a student was not allowed on campus. Collectively, the 22 schools reduced ISS by 637 (31%) and OSS by 395 (19%); with again, the middle school and high school having the biggest impact. The middle schools reduced their number of ISS days by 643 (37%) and OSS by 279 (35%), while the high schools reduced their ISS by 29 (97%) and OSS by 157 (14%). The researchers estimated a benefit analysis of time recovered at the middle school level alone for learning, teaching, and leadership based on the reduction of office referrals and suspension levels. Between the first and second years of the implementation, the estimation of recovery time was 7,508 hours of instruction, 890 hours of teaching, and 2,010 hours of leadership.

Simonsen et al. (2012) took a different state and examined the effectiveness of implementing a school wide PBIS intervention and how that relates to student behavior and academic outcomes. The schools within the study also served kindergarten to high school with 428 schools participating over a six year time frame. The effectiveness of PBIS implementation was measured by the *Schoolwide Evaluation Tool* (SET). At the

school level, the PBIS team established student social behavior expectations, how these behaviors would be taught, a reward system within the school, as well as how the school would monitor, evaluate, and manage their students' behavior. The SET was completed by trained outside evaluators to determine fidelity. Fidelity was based on a standard metric using a set of seven subscales (a) behavior expectations defined, (b) behavioral expectations taught, (c) reward system, (d) violation system, (e) monitoring and evaluation, (f) management, and (g) district support. Simonsen et al. (2012) set the fidelity criteria at 80% on the overall scale and 80% on each subscale. By the sixth year, fidelity criteria were met by 81% of the elementary schools, 31% of the high schools, and 73% of the middle schools. The results of office discipline referrals (ODR) was reported by the number of ODRs per 100 students and then the square root of these scores were used. The ODR was statistically significant. The average rate of out-of-school suspension did not change significantly over time; however the schools implementing PBIS with fidelity had significantly lower rates of suspension. For all participating schools in the study, the average percentage of students' grade-level mastery on the math and reading test increased significantly over time. In regard to the SET fidelity criteria, there was no statistically significant difference on the reading scores between schools that met criteria and those that did not. However, consistent with the behavioral outcome variables, schools that implemented PBIS with fidelity had significantly higher percentages of students overall who mastered the math test.

Within the PBIS program, schools have the autonomy to establish school-wide incentive programs and target behavioral expectations unique to their clientele. McCrary, Lechtenberger and Wang (2012) demonstrated this in their research on the relationship

between PBIS and discipline referrals, school suspension rates and failure rates within four schools over a two year period. At the elementary level, the focus was based on a self-regulation goal of coming to class prepared with their books and materials. Their PBIS expectations were focused around passing procedure expectations with a good-behavior ticket program followed by weekly drawings to award prizes. The elementary campus saw a decrease in the multiple-day, in-school suspensions from 331 to 11 students and in-school suspensions decreased from 497 to 59. The middle school level's focus was also based on a self-regulation goal of students being tardy to class and the discipline that resulted because of this additional unstructured time. McCrary et al. (2012) reported the middle school decreased their discipline referrals from 203 to 131 by implementing expectations during passing periods, teachers spending time in the hallways, encouraging students to walk and talk, and offering "caught being good" tickets in exchange for prizes. The junior high campus saw significant results in out-of-school suspension, as it decreased from 39 to 22 and expulsions dropped from 6 to 4. Students referred to the District Alternative Education Program decreased from 101 to 74. The junior high faculty began recognizing students for positive behavior and modeling social behavior expectations in the common areas of the school, awarding students for good behavior, and having weekly drawings. The high school campus implemented a tutorial and study hall program for students needing a self-regulation goal of passing and completion of assignments, as well as starting a recognition club for students caught following school expectations in an effort to improve academic performances and reduce discipline referrals. Students' overall failure rates were decreased by 71% within the first year.

Much of the research available on PBIS revealed school-wide behavior management programs particularly aimed to affect the majority of the students within a school. The results of these studies (McCrary et al., 2012; Ögülmüs & Vuran, 2016) present implications on how educators can employ systemic schoolwide management programs to address disruptive incidents to creatively curtail and essentially eliminate disruptive incidents that are detrimental to the learning environment. Hoyle, Marshall, and Yell (2011) conducted a nationwide study analyzing the interventions offered at the Tier 2 level of PBIS at the middle school level. Of the 92% of the states that participated, 24% did not use Tier 2 supports at the middle school level. Of the 68% of states that were utilizing Tier 2 supportive interventions, 15% included only one intervention (check-in/check-out), 12% had two choices of interventions, and 70% used three or more intervention choices. When considering intervention choices at the Tier 2 level, Behavior Education Program (BEP) was chosen by 50% of the states and check-in/check-out was chosen by 25% of the states. Hoyle et al. (2011) concluded that school personnel need more assistance in finding ways to implement Tier 2 successfully. This may help explain the scarcity of Tier 2 and Tier 3 research availability within the middle school level and within the typical school setting.

Tier 2 and Tier 3 supports. The focus of the current research is targeting the most severe behaviors issues. The following research studies targeted students at Tier 2 and Tier 3 levels. According to Lewis, Jones, Horner, and Sugai (2010), the support programs at Tier 2 and Tier 3 levels should focus on teaching social skills, acknowledging student demonstration of pro-social behavior, delivering instructive

responses to problem behavior, and providing the basic logic of applied behavior analysis.

Simonsen and Sugai's (2013) research described how the framework of PBIS is appropriate for most severe behaviors such as physical aggression; disruptive verbal behavior; possession, distribution, or use of controlled substances; chronic academic failure; truancy; possession or use of firearms; and arrests or involvement within the criminal justice system. While not in a typical school setting, Johnson et al. (2013) provided evidence of a reduction in behavior incident reports, an improvement in school attendance and an increase in career and technical industry certificates after implementing PBIS in a male juvenile correctional facility. Students within the study were 10 to 17 years of age, had been adjudicated of felony offenses, and were committed to the correctional facility by the juvenile court until their 19th birthdays. PBIS training involved an internal coach and the hiring of two external coaches. The Tier 3 intervention included functional behavior-based support plans with social skills training, individual check-in-check-out sessions, and a point based system with reinforcement incentives. The comparison data of one year without and one year with PBIS implementation resulted in the following (a) 46% reduction in total incidents of minor and major infractions or deviations from the youth expectation matrix, (b) 41% reduction in referrals without a security incident, (c) 56% reduction in incidents with a security incident but no admissions into a security unit or disciplinary segregation, (d) 35% reduction in security referrals with an admission into a security unit or disciplinary segregation, (e) 21% increase in average daily school attendance, and (f) increase of industry certificates earned from 16 to 147. Other improvements noted were overall perception of increased

safety within the facility, staff attendance, and instructional time for students. Johnson et al. (2013) suggested their findings support the conclusion linking PBIS with more in classroom instructional time. A limitation of this study was the non-random assignment of the youth involved in the study (i.e., higher risk of behavior problems, academic underachievement with approximately half identified with educational disabilities) and high turnover rates among the students dictated by their sentence in the facility.

Simonsen, Briton, and Young (2010) examined the impact of PBIS on the number of serious incidents in which physical management (i.e. physical restraint) was used to maintain the safety of students and staff within a private, nonsectarian school enrolling individuals with exceptional needs pursuant to an individualized educational program over a three year period. Students typically had a history of physically aggressive behavior that endangered the safety of the student or others. Outside consultants provided staff training on PBIS, as well as assisting teachers to develop a plan for implementing social skills instruction in their individual classrooms. Results for serious incidents were computed by the total number of incident reports with physical management divided by the number of school days, divided by the number of students enrolled at the end of the month. Simonsen et al. (2010) reported an immediate decline in serious incidents for the first three months of implementation of PBIS. There was a move in facilities in the fourth month of implementation, associated with an increase in the index of serious incidents for the next few months. Overall the downward trend continued over the next year of implementation to account for a drop from .04 (index of serious incidents) to below a .01. According to their data, the percentage of students who received six or more serious incident reports per month was reduced from 30% the first year to 17% the third year.

Campbell and Anderson's (2008) study involved students who had explicitly been taught self-regulation, emotional development behavioral expectations and rules for specific settings (including the classroom). The students also participated in a reward system for appropriate behavior. Despite these efforts, the students were still exhibiting behaviors resulting in office discipline referrals, detention, and suspension. The behaviors were described as physical aggression, noncompliance of an adult request and stealing. The interventions included a check-in/check-out intervention and a point system for appropriate behavior tied to a tangible reward system. The behavior expectations for the check-in/check-out intervention were derived from the school's universal program expectations that initially decreased the occurrences of disruptive behavior; however, these lowered disruptions did not maintain over time. Therefore, the check-in/check system was altered to a more targeted intervention based on the function of the problem behavior for each student. When the function-based adaptation was implemented, reductions in problem behavior were observed almost immediately for the participants and were sustained over time. Despite the concept of functional behavior assessments being typically a tertiary level intervention (Horner et al., 2014), Campbell and Anderson (2008) recommend educators gather behavioral function data preliminarily on disciplinary referral forms before implementing any Tier 2 or Tier 3 interventions.

Iovannone et al. (2009) described a school-based tertiary intervention Prevent-Teach-Reinforce (PTR) for problem behaviors such as specific social skills, self-management and problem-solving strategies. PTR model is aligned with the principles of applied behavior analysis (Skinner, 1953) and the procedures of individual behavior support (Horner et al., 2014). Iovannone et al. (2009) addressed a group of kindergarten

through eighth grade students at the tertiary level seeking to improve their social skills and engagement in learning time. Individual goals were defined for social, behavioral, and academic targets including at least one problem behavior to be reduced and one prosocial and/or proacademic replacement behavior to be taught. A functional behavior assessment (FBA) was completed with a behavior plan developed to include training, coaching, interventions and strategies to be implemented. For the children in the PTR group, social skills had increased by approximately 7.5 standard score points and problem behaviors had decreased by approximately 5.5 standard score points as compared to the children in the comparison group.

All studies collected implementing Tier 2 and Tier 3 intervention strategies (Campbell & Anderson, 2008; Iovannone et al., 2009; Johnson et al., 2013) agree that the use of a behavior intervention must address antecedent events, teach new skills to replace problem behavior, have an individual time to discuss progress with students on their individual goals, and provide a desired reinforcement. These components increase the likelihood of appropriate behavior being repeated and problem behavior being extinguished. As interventions increase to the tertiary level, more focus is placed on the desired outcome of behavior rather than academic success. However, one concept not specifically mentioned or measured within any of the schoolwide PBIS presented was the part parents played in the intervention process.

Parent Education

Eyberg et al. (2008) stressed choosing a school-based program that focused on teaching parents basic behavior principles for modifying child behavior, encouraging parents to monitor child behaviors, and assisting parents in developing and implementing

behavior modification interventions to improve student behavior problems. Pelham and Fabiano (2008) reviewed and synthesized research on the science of behavior treatment for students with attention deficit disorders and how that relates to academic functioning. These students displayed difficulties with family functioning and peer social development. The researchers concluded that students with these concerns were typically referred for a behavioral intervention that included parental training. Twenty-two studies of behavior parent training were included in the review. These trainings were typically group based and had 8 to 16 sessions with the treatment packages including combinations of behavior parent training, behavior contingency management, and behavior peer interventions.

Spoth, Trudeau, Guyll, Shin, and Redmond (2009) examined whether family-focused interventions directed at sixth-grade students in middle school could reduce problematic substance use during young adulthood. Two universal intervention programs (i.e., *Iowa Strengthening Families Program [ISFP]* and *Preparing for the Drug Free Years [PDFY])* administered during early adolescence across a 10-year time span were tested to determine their effects on several types of substance use in young adulthood. Both family-based intervention programs showed significant direct effects on various areas of abuse. There was a slight difference in the two programs with ISFP having two additional sessions and having all intervention sessions attended by the targeted adolescents, whereas PDFY focused primarily on the parents, with adolescents attending only one of the sessions. With either program, Spoth et al. (2009) demonstrated that involving parents in interventions at critical junctures in children's lives can have a meaningful impact on future outcomes.

The pilot program conducted by Molina et al. (2008) for students in an after-school program was directed at educational performance, social development skills, homework completion, and school and home behavior. The program yielded improvements in all areas, as well as some unexpected results. Utilizing the program, *Challenging Horizons Program*, students received a 10-week intervention for two hours after school two times a week. An individual counselor, overseen by a Ph.D. level clinician, was assigned to each student. The counselor monitored behaviors associated with aggression, conduct disorder, and oppositional defiant disorders. Behaviors were identified, academic targets set, and positive reinforcements provided toward goals. During the training sessions, students were taught problem solving and social skills (e.g., starting conversations, giving compliments), study skills, test-taking strategies, and note-taking skills. Students also had a recreational time to practice social skills and a dedicated time for homework completion. An individual and group level-based behavioral point system for good behavior was integrated within the program. Parents of participants in the treatment group attended three separate two-hour group parent meetings to review individual student's progress in the program and learn skills for managing home behavior. A Ph.D. or MD-level clinician led parent groups. Parent participation was nearly 100%. It was noted the provision of food and supervision of youth and younger siblings on parent training nights were contributing factors for the success and satisfaction of parents. The unexpectedly strong results were in the domain of internalizing symptoms or self-esteem measured by parental survey. Effect sizes of .55 (parent report) and .59 (adolescent report) indicated medium effects of treatment on variables such as anxiety, depression, self-esteem, and attitude toward school. When the

participants ranked the preferred treatments at the end of the study, the highest results were parent training, family therapy, mediation, adolescent skills groups, behavioral plan in school, and tutoring (in rank order). Parent ratings revealed more than 70% of parents indicated a positive reaction including benefits gained from the program and a desire for continued participation.

Positive results were also noted in a study by Connell, Dishion, Yasui, and Kavanagh (2007) involving sixth-grade students in a public school setting. The family interventions were part of a multi-level intervention addressing rates of substance use and antisocial behaviors. A family resource center was made available with one-on-one consultations with parents, telephone consultations, feedback to parents on their students' behavior at school and access to videotapes and books. The specific videotapes and books available were not described in the study. Along with the family resource center being available, six in-class lessons were conducted with the students. The lessons focused on school success, health decisions, building positive peer groups, respect, coping with stress and anger, and solving problems peacefully. The lessons included parent-student activities designed to motivate family involvement and to support positive parenting practices. Another component of the intervention was a family check up that was open to all families but specifically offered to families of high-risk youth. The family check-up consisted of an initial interview, assessment session, and feedback session offering targeted services specific to the student needs. Twenty-five percent of the intervention group engaged in the family and behavior intervention. The engagement of the family intervention reduced the risk for problem behaviors from early to late adolescence,

including antisocial behavior, rate of arrest, and tobacco, alcohol, and marijuana use as measured by yearly self-report surveys, teacher questionnaires, and court arrest records.

A parent within the study (Lower et al., 2016) stated she learned the importance of giving her son quality attention, on-going and immediate attentiveness with the school system, and a reinforcement system at home. The results of many of these studies, including Connell et al. (2007), suggest that parental engagement in a program designed to improve parent management practices and parent–adolescent relationships result in collateral benefits to youth in multiple domains at a critical transition period of social and emotional development.

Behavior Response and Intervention Navigation

Like many other school districts (Harrison et al., 2012; Theriot, 2008) mentioned in the literature review, the school district in this research study was experiencing students with challenging anti-social behavior resulting in aggressive behavior threatening classroom environments and physical harm to students and staff. The typical response to this behavior had been in-school suspensions, out-of-school suspensions, or short-term stays in in-patient facilities (Dupper et al., 2009; Morrissey et al., 2010). Unfortunately, these strategies did not receive positive results and the middle school was considering an alternative for these students.

Ultimately in the summer of 2015, the Behavior Response and Intervention Navigation (BRAIN) program was developed by a district team in response to the identified need to provide focused instruction on positive behavior for students with Tier 2 and Tier 3 behaviors that would promote academic success. Following the research literature, the district team needed several basic elements (Chen, 2008; Davis et al., 2014,

Eyberg et al., 2008: U.S. Department of Health and Human Services, 2001) to be in place for the intervention they chose. Behavior monitoring and self-management techniques with reinforcement (Davis et al., 2014) were to be a part of their planned intervention. Teaching appropriate replacement behaviors and coping strategies to create lifelong skills for students to be successful contributing members of society were focuses and were consistent with those stressed by Harrison et al. (2012). The school's plan included a leveled reinforcement system to pair with the self-management system (Backner, 2010; Jones et al., 1992) with goals in the areas of social development, self-regulation, and emotional development (Djambazova-Popordanoska, 2016; Garner, 2010). The final component involved teaching parents basic behavior principles for modifying child behavior and encouraging parents in developing and implementing evidence-based behavior techniques as outlined by Eyberg et al. (2008) and Pelham and Fabiano (2008).

The district's development of the Behavior Response and Intervention Navigation (BRAIN) program for this group of students needing a Tier 3 behavior intervention program began with the establishment of a BRAIN district team to support the implementation of the program within the school. This team consisted of the building principal, BRAIN teacher, school psychologist, district Coordinator of Student Assistance Programs, and Assistant Director of Special Education. The school site administration, along with the district team, sought to create an organized, systematic intervention for the four students determined at Tier 3 level. Two challenges facing the district at that time were the time frame (the course of the summer months to prepare for the students in the fall) and funds (with no added teacher allocations or additional funds beyond what the school site budget could provide).

The team knew from the research base that effective school-based programs needed to focus on increasing positive student behavior through teaching appropriate replacement behavior (Harrison et al., 2012; U.S. Department of Health and Human Services, 2001). The district team considered research-based classroom management for special education programs (Office of Special Education Programs, n.d.) as well as training and resources on preventing and de-escalating of difficult behavior (Time to teach; A source for classroom management, n.d.; Crisis Prevention Institute, n.d.). With the research indicating that behavior monitoring and self-management techniques with reinforcement to be effective in improving school behavior (Chen, 2008; Davis et al., 2014), the district team also visited a residential treatment center housed within the community where techniques and methods were shared on the leveled system utilized within the local center. Curriculum programs were researched for students (Brainwise, n.d.; Sternberg, 2001) and parents (Fennell & Fishel, 2001; Systematic Training for Effective Parenting, n.d.) following the research finding that indicated teaching appropriate behavior, replacement behaviors, and coping strategies create lifelong skills for students to be successful contributing members of society (Harrison et al., 2012).

Based on the already established district Tiered Intervention Support flowchart (see appendix A), research on various components needed for behavior intervention and knowledge of the four students entering the program, the BRAIN team developed the paperwork components needed for the BRAIN program. Introductory parent contracts, student scorecards, sample leveling choices, and examples of behavior goals and objectives were all needed for implementation and included in Appendices B-E, respectively. This same team determined if BRAIN placement was appropriate for each

student being referred to the program based on previous behavior interventions having been tried and not successful, parental consent, willingness to participate, and student's ability to comprehend the leveled system and behavior curriculum.

The district desired a team-based approach that allowed all members of the school community to be involved in the BRAIN program. Students participating in the BRAIN program also slowly transition back into their typical classroom environments. Therefore, the entire school staff was trained by certified counselors licensed in Crisis Prevention Institute (CPI) behavior management training. CPI provided de-escalation training and replacement behavior methods. The concepts were based on the understanding there is a safe, respectful, noninvasive method for managing disruptive and assaultive behavior. These proven strategies are considered to be proactive and focus on the prevention of inappropriate student behaviors that interfere with the classroom learning environment. All adults in a school environment provide numerous opportunities for children to engage in positive activities and build skills and motivation, as well as consistently and fairly give corrective consequences for rule infractions. The teachers who would have students involved in BRAIN in their classroom were also required to do professional development on the social emotional curriculum tracking system to record student progress.

While in their early months of BRAIN, prior to leveling out into the general education classroom, students were taught the typical core curriculum covered by the general education classroom teachers and followed the same pacing guides for the district. This rigor was important to ensure that when students returned to their general education classroom they were at the same place in the curriculum as the remainder of the class. Each student began the program spending six 55- minute periods per day in the

self-contained BRAIN program with one of these periods being a morning meeting time. A seventh hour at the end of the day was an elective period in the general education classroom.

The overall BRAIN program focused on students' learning responsibility for their own behavior through the teaching of appropriate school and social behaviors, self-monitoring of goals for social development, self-regulation, and emotional development depending on their individual needs, and being rewarded on a leveled system. Each student's behaviors were addressed with these specific individual goals to help them be successful in the general education classroom. Identification and goal setting stressed that a series of behaviors "placed you in the situation you are in and behaviors can also help you work your way out." The goals were based on three areas (a) social development, (b) self-regulation, and (c) emotional development. Each student's individual goals were chosen based on a conference with the student and a review of records (i.e. past IEP goals, reports of past incidents, previous suspensions). Each of these goals was separated into observable objectives and assessed hourly in the BRAIN program (see Appendix E for an example of goals separated into observable objectives).

As students progressively leveled their way out of the self-contained BRAIN classroom, all teachers scored the students on their three personal goals to determine their privileges each day via the hourly scoring system utilized by the BRAIN classroom. Each of the three personal goals was divided into above average, average, and below average behaviors coinciding with a point level of three, two, or one (see Appendix C for BRAIN Daily Scorecard Explanation and Example). Teachers used Google documents so the student did not see their scores until the next morning during a review and reflection

meeting. Students also scored themselves on the goals every hour. This score sheet was turned in at the end of the day to the BRAIN teacher to be compared during the next morning's meeting with the teacher ratings. The BRAIN teacher averaged the staff scores from the previous day as a starting point for the coming day. During the first hour BRAIN class, students reviewed and reflected on their scores in an effort to compare and contrast with the staff numbers from the previous day with the BRAIN teacher. Any score below the student's current level caused the student to be on "Refocus" until the score was raised back to the appropriate level. Refocus is a suspension of privileges for a minimum of two days. During this time of refocus the student is returned to the BRAIN classroom for all class periods, except for the elective hour. During these two days, the BRAIN teacher will address the negative behavior and work with the student on alternative behaviors in the same situation. The weekly averages were used to determine if a student was eligible for a "level advancement" and the addition of more privileges. This scoring system was based on the concept that a student who displays below average, average, or above average behavior throughout the day should receive the appropriate score.

Another vital component of BRAIN was the leveled system of privileges. The leveled system was designed to give students greater independence and more privileges as they demonstrated increased behavioral control (see Appendix D for Level Privileges). Many of the leveled privileges were designed based on items or privileges the students requested for working toward during the school day (e.g. access to a locker, carry a cell phone, participate in library time). The students aided in the design of the specific criteria for advancement to the next level. Each level progressed with more time in the general

education classroom and more time with peers outside of the BRAIN program. The minimum time at any given level was two weeks. After that time, a student could request to advance to the next level (see Appendix F for Level Advancement Request Form). Students were required to state what they had learned about controlling their behavior and state the expectation within the next level. These level advancements were examined by the district BRAIN team at a monthly meeting.

The students were taught social emotional curriculum using *BrainWise* (Brainwise, n.d.; Sternberg, 2001) during their first hour meeting time. *BrainWise* was used to teach students to take ownership and responsibility for their behavior. The intent of *BrainWise* was to help students solve problems, think critically, and make good decisions. The lessons showed them how to apply thinking skills to solve interpersonal problems (Barry & Welsh, 2007; Sternberg, 2001; Sternberg, Reznitskaya and Jarvin, 2007).

Each school day began with a morning meeting with all BRAIN students attending. The meeting included *BrainWise* specific lessons (Barry & Welsh, 2007) created for teaching the "ten wise ways" or a series of identified thinking skills. The lessons merged knowledge about the brain with cognitive concepts and practice scenarios, and students developed problem-solving behaviors that were discussed and practiced in the morning meetings. The morning meetings were also a time for review and reflection on their self-management scores on individual behavior goals from the day before. Time was spent on comparing and contrasting between teacher and student scores and a discussion on the differences, if any.

A de-escalation room (or "Blue Room" as the middle school students referred to it) was available to all students participating in the BRAIN program. If the student was unable to maintain control in the classroom, the student had access to the de-escalation room. "Unable to maintain control" was defined as needing a place to yell, scream, or display antisocial behavior not appropriate for the classroom setting. The de-escalation room was an empty room students could voluntarily go to in order to regain their composure or were placed into due to their behavior posing an imminent danger of serious physical harm to themselves or others. When in this room, points could not be deducted from a student's overall points for the day. State protocol was followed in the room requirements, as well as notification of parents, when students were involuntarily placed in the Blue room. Teachers were directed to allow students to express frustration within the room with no consequences as long as they did not attempt to harm themselves or staff. As the student regained composure, the teacher followed-up with the student and addressed what went wrong in the classroom which caused them to enter the de-escalation room. Rectification, in the form of apologies or cleaning up, was also discussed at the end of the de-escalation time.

Because of the psycho-emotional component of moving from a small educational environment back into the general educational environment, students were also offered psycho-educational group counseling provided by an outside counseling agency. The focus was on helping students cope with feelings and emotions that could be barriers to their success as a part of the program. This counseling took place within the BRAIN classroom with the teacher and teacher's assistant present. Students were encouraged to address topics directly related to BRAIN and the process of leveling up and increasing

their time back into the general education environment. Additional consent by the parents was given for this counseling.

The BRAIN program's parent component involved an eight-week educational curriculum. The parents agreed to this required parent education program. The school utilized a purchased program entitled *Systematic Training for Effective Parenting (STEP)* (Fennell & Fishel, 2001). The topics of the meetings included: (a) Understanding yourself and your teen; (b) Changing your response to your teen; (c) Communicating respect and encouragement; (d) Encouraging cooperation and solving problems; (e) Using consequences to build responsibility; (f) Deciding what to do: Part 1; and (g) Deciding what to do: Part 2. The parent meetings were scheduled once a week in the evenings where *STEP* videos were viewed, followed by discussions led by a staff member. Each week different district and school staff members attended the parent meetings to be a part of the discussion with parents and to help build a working relationship with them.

The BRAIN teacher was the direct liaison with the parents and communicated daily with them by email. She would send parents a narrative of the day's activities with positive and negative occurrences. If a student was involuntarily placed in the Blue room, documentation would be sent to the parent outlining the incident, per State protocol.

With each of the components stressed in the literature review, the BRAIN team implemented a theory of planned change. The program was created to teach students how to control their own behavior through goal setting and self-regulation aided by a leveled privilege system, create a school-wide proactive environment to prevent inappropriate student behavior, and regain parent trust. The expectation was for improvements in social, behavioral, and academic progress for students who had a history of anti-social

behaviors, suspensions and/or time away from school. These expectations would be evidenced by regular attendance in a typical school setting, low to no behavior referrals, and academic progress in core subject areas. This study sought to find out how stakeholders such as students, teachers, parents, and administration responded to the BRAIN program. This research sought to discover if any of the program's intended goals were successful or not during the intervention of the BRAIN program or in the year following the intervention.

Purpose

The research base provides the evidence that effective school-based Tier 3 intervention programs focusing on increasing positive student behavior need to (a) monitor behavior and teach self-management techniques with reinforcement (Gumpel, 2007; Freeman & Dexter-Mazza, 2004; Lower et al., 2016); (b) teach appropriate replacement behavior (Horner et al., 2014); (c) teach social/life skills (Simonsen et al., 2012); (d) establish individual goals (McCrary et al., 2012); (e) implement behavior modification (Chen, 2008; Davis et al., 2014, Harrison et al., 2012); and (f) offer a parent component (Eyberg et al., 2008; Molina et al., 2008; Pelham & Fabiano, 2008; Spoth et al., 2009). However, very few individual studies link the improvement of student behaviors to student success in the school environment (Mastropieri et al., 1988; Simonsen et al., 2012; Simonsen & Sugai, 2013). The BRAIN program was intended to promote improvement in regular attendance in a typical school setting, low to no behavior referrals, and academic progress in core subject areas. This study sought to describe the impact the BRAIN program had on the overall quality of the educational experience for the participants within the program. Was the BRAIN program associated

with measurable changes on behavioral indicators (e.g. school absences and number of discipline referrals resulting in suspension days, in and out of school) and academic indicators (e.g. testing level on state mandated testing and grade point averages) for the participants within the program and were they able to generalize their academic success beyond the presence of the intervention itself?

The specific research questions addressed were:

1. How did stakeholders respond to the BRAIN program?
2. Based on data gathered from school records pre-intervention, during the intervention, and post-intervention, was the implementation of the BRAIN program followed by changes in:
    a. school attendance?
    b. number of office referrals resulting in suspensions (in and out-of-school)?
    c. grade point averages?
3. Based on data gathered from school records pre-intervention and during the intervention, was the implementation of the BRAIN program followed by changes in:
    a. Oklahoma criterion-referenced reading test scores?
    b. Oklahoma criterion-referenced math test scores?
4. Based on data gathered from school records pre-intervention, during the intervention, and post-intervention, do types of incidents and log entries change?

Method

This outcomes-based program evaluation was designed to present a research foundation for the school and other educational leaders who strive to create and improve

intervention programs to assist students whose behavior had become their most detrimental barrier to academic success and who are seeking additional interventions at the Tier 2 and Tier 3 level. McNaughton-Cassill (2013) indicated that "managing behavior in the classroom can be one of the most challenging tasks a faculty member undertakes" (p. 104). Teachers, and ultimately the school, bear the responsibility for responding to students appropriately, getting them the help they need if necessary, all the while continuing to provide a cohesive learning environment for all other students.

Research Design

The evaluation of a program is a "systematic process of collecting and analyzing data on the quality or effectiveness of programs, products, or practices for purposes of making decisions" (Martella et al., 2013, p. 501). Evaluating ourselves, each other, products, and resources occur constantly in our lives. Within the realm of educational services, the evaluation of programs increased in importance with the passage of the Individuals with Disabilities Education Act (IDEA) and No Child Left Behind Act (NCLB) introducing the phrase "evidence-based practice." This phrase became a guiding principle for determining whether a practice should be implemented or maintained within educational settings. While the phrase may be relatively new, the concept itself is not. As emphasized by Baer, Wolf, and Risley (1968), practice by professionals such as psychologists, educators, speech/language pathologists, and occupational therapists should all be driven by quantitative research-based decisions. Horner, Sugai, Todd, & Lewis-Palmer (2005) defined the word "practice" as "a curriculum, behavioral intervention, systems change, or educational approach designed to be used by families, educators, or students with the express expectation that implementation will result in

measurable educational, social, behavioral, or physical benefit" (p. 175). Martella et al. (2013) refers to a specific type of program evaluation as an outcome evaluation. An outcome evaluation is summative because of the emphasis on the end results and the program's value. The levels of complexity that can be brought out through an outcome evaluation include: (a) determining whether program participants have improved, (b) determining whether program participants have improved compared to a similar group not receiving the same services, and (c) determining whether a cause and effect relationship exists between the program services and the outcomes produced by the program (Martella et al., 2013).

Case study. The current study sought to utilize the first of the summary levels suggested for a program evaluation (Martella et al., 2013) through a case study design. Case study research, according to Creswell (2007), is a qualitative approach to explore an issue or problem over time through one or more chosen specific systems. This exploration takes place through detailed, in-depth data collection and reports a case description. The case study approach has played an important role in special education research because of the emphasis on individual and small groups (Brantlinger, Jiminez, Klingner, Pugach, & Richardson, 2005). This type of research is conducted to produce evidence on the exploration of particular individuals within the context of a program. According to Brantlinger et al. (2005), qualitative research creates rich research projects which contribute to the field of education. These research projects help policymakers and practitioners see similarities in their situations and judge the relevance of the information for their own situations.

Since the current research is focused on a small number of student (n=4), the type of qualitative case study chosen is a single instrumental case study. In a single instrumental case study (Stake, 1995), the researcher focuses on an issue or concern and then chooses a bounded system to illustrate the issue. In the current research, the single issue is the program evaluation of the BRAIN program and the different data elements drawn from to focus on the outcomes of the case. Therefore, a single instrumental case study (Baxter & Jack, 2008; Stake, 1995) will focus on the bounded system of the intervention (Creswell, 2007) to understand and describe the impact the BRAIN program has on the overall quality of the educational experience for the participants within intervention and whether these changes were sustainable in the year following their participation.

School Setting

The participants of this research study were located in a suburban community in the Midwestern United States with a town population of 20,211. For the 2015-16 school year, the school district served 10,756 students. The district had six elementary schools (pre-kindergarten through fourth grade), two intermediate schools (fifth and sixth grades), two middle schools (seventh and eighth grades), and one high school. The middle school where the BRAIN program was located had an average enrollment of 725 students for the school year 2015-16. The ethnicity of the students within the district was 67.9% White, 9.7% Hispanic, 8.3% two or more races (not Hispanic), 5.8% American Indian, 4.9% Asian, and 3.2% African American. The ethnicity within the middle school where the BRAIN program was located was 80.0% White, 9.0% American Indian, 7.2% two or more races (not Hispanic), 2.0% African American, and 1.6% Asian. Free and reduced

lunch rates for the district were approximately 37%, with the middle school at 38%. The school district's percentage of students with special education needs is approximately 12%, while the middle school's percentage is 12.4%.

In anticipation of serving four students attending the middle school in the coming year who needed a Tier 3 behavior intervention, the school site administration reached out to a team of district administrators for assistance. The team of district administrators consisted of (a) Assistant Director of Special Education Services, (b) Coordinator of Student Assistance Programs, and (c) a District Psychologist. This team was tasked with the development of the intervention program.

Participants

Four students were identified for the BRAIN program. These students were in need of behavior interventions at the Tier 3 level based on the district Tiered Intervention Support flow chart (see Appendix A). These students were entering middle school in the 2015-16 school year with a history of anti-social behaviors, which had become their most detrimental barrier to academic success. Acker (2007) defined antisocial behavior as "recurrent violations of socially prescribed patterns of behavior usually involving aggression, vandalism, rule infraction, defiance of adult authority, and violation of social norms and more" (p. 5). The antisocial behaviors of the students could be specifically defined as recurring violations of socially inappropriate patterns of behavior displayed as aggression towards other students and teachers, stealing, defiance of adult authority, and violation of social norms. According to the background information provided in the district student management archived system, the behaviors resulted in suspensions, out-

of-district day treatment program participation, and short stays in mental health hospital treatment programs.

Dependent Variables

The extant data collected for this research study were gathered from the public school's student data management systems. Student demographic information was gathered on BRAIN participants to include gender, race/ethnicity, and identified disability. Students' test scores, grade point averages, attendance records, and disciplinary referrals were gathered from the student data management systems before, during, and after their involvement in the BRAIN program. Log entries and incident data were also gathered from the student data management systems. Video interview data were gathered from archived Google files.

Video transcripts. An informative video was created at the end of the 2015-16 school year to educate the school district, as a whole, on the progress and response of the stakeholders involved in the BRAIN program. The researcher was given access to the transcripts of the uncut, raw footage of this video. The video included interviews conducted with the principal, teacher, a parent, students, and members of the BRAIN administrative team. Appendix G presents the code book created following transcription of the recorded interviews.

School attendance. Extant data were gathered from the school's student data management system to record the number of absences for each BRAIN participant over the course of the 2015-16 and 2016-2017 school years, as well as two previous years and one year after for comparison. Student attendance included number of days absent, as well as number of days tardy. When a recorded number of 10 absences in consecutive

order occur, the student was dropped from the school district. The reason for lengthy absences and subsequent drops was recorded in the student data management system. This information was of particular importance to the program to determine if the student had entered a treatment facility, juvenile facility, or whether the student and parent had chosen not to continue to pursue their education. Appendix H shows the collection of school attendance data.

Discipline information. Extant data were gathered from the school's student data management system under the headings of "Incidents" and "Log Entries". A variety of information was collected from these headings to include visits to the health office, discipline information, general health information, suspension information, etc. These data were used to determine the number of office referrals resulting in in-school suspensions and out-of-school suspensions for the BRAIN over the course of the 2015-16 and 2016-17 school years, as well as the years prior and one year after intervention for comparison. Since the students' previous years' experience with discipline referrals and suspensions was a major influence in their participation in the BRAIN program, these data were of particular importance to determine a comparison correlation between pre and post intervention. Appendix I shows the collection of all incidents and log entry data. Office referrals were extracted from the data collected and Appendix J specifically depicts discipline referral data.

Standardized achievement tests. Oklahoma Criterion-Referenced Tests (CRT) was utilized as testing level proficiency on state standardized achievement tests for the 2015-16 and 2016-17 school years. The research participants took both the reading and math assessment during these years, as well as the two years prior and these scores were

used for comparison purposes. The CRTs were used to describe an individual student's performance in terms of levels of proficiency on core academic standards. The purpose of these assessments was to obtain information about the student's progress toward learning the Oklahoma Academic Standards for the subjects of reading and math. The students' performance is reported with a scaled score, as well as in one of four performance level indicators: Advanced, Proficient, Limited Knowledge, or Unsatisfactory. A comparable scaled score was not available for the year following the program, as the State of Oklahoma did not require grade level proficiency tests for ninth grade students for the school year 2017-18. The state did provide; however the performance level indicator for the score that year.

Each grade level subject assessment was given as an online assessment, unless otherwise stated on a student's Individualized Educational Program (IEP) to be given by paper and pencil. The assessments are divided into separate sections that may be administered on the same day with a break given between sections or on consecutive instructional days. The format of the assessments was multiple-choice questions for reading and multiple-choice and technology enhanced questions for the math assessment. Students were expected to have enough time to complete all sections; however, additional time was given for any student as an automatic extension of the same testing period. Students were given the assessment as a classroom group, unless accommodations within the student's IEP are stated to be given individually or as a small group.

Grade point average (GPA). Extant data on GPA were gathered from the school's student data management system for the BRAIN participants, over the course of the 2015-16 and 2016-17 school years, as well as the two years prior and one year after.

GPAs are used as an indicator of school achievement over a broad range of subject matter, as opposed to specific subject grades. When discussing the intricate makeup of GPA and the scores contributing to them, Steward, Hill, Neil, Pritchett, and Wabaunsee (2008) examined the influence of teacher perception, students behaving in a socially acceptable manner (termed honorability in the study), and academic preparedness on GPA. Steward et al. (2008) stressed that the notion of grading practices is multidimensional and influenced by a number of variables and may not accurately reflect actual academic competence. While educational scholars agree grading can be a highly subjective aspect of public school (Schinske & Tanner, 2014; Schneider & Hutt, 2013) because of the concept of a student receiving an "A" for the same equivalency of work in one class as the student receiving a "B" in the classroom down the hall; the fact remains that these averages are used along with standardized test scores for a measure of college readiness (Atkinson & Geiser, 2009). In an attempt to reduce error variance in GPA and similar to other studies (Steward et al., 2008), the current study is calculating GPA on core required courses only: English, science, mathematics, and history. GPA will be calculated and collected on a semester basis. Appendix K shows the collection of data for GPA.

Procedures

Extant data from the participants who originally signed up for the BRAIN program at the middle school were available in the public schools' student data management systems. The time frame of the study was the two years prior to the intervention program, the two years during their participation in the BRAIN program (2015-2017 school years), as well as one year following BRAIN participation. The uncut,

raw footage of the video was available on the school's Google doc archived data system. After seeking internal review board (IRB) approval from the University of Oklahoma and permission from the School District's Superintendent, the researcher proceeded with contacting the Assistant Director of Special Education, along with the Coordinator of Student Assistance (Director of the BRAIN program) to provide the researcher information from the original students who participated during the 2015-2017 school years. See Appendix L for the University of Oklahoma IRB Human Research Determination Review Outcome letter and Appendix M for the Informed Consent Form with the school district. The researcher had access to de-identified data from the Coordinator of Student Assistance and the Assistant Director of Special Education. These District Administrators supplied the de-identified extant data to the researcher. This collection was completed in a secure room at the administrative offices. After participants were assigned pseudonyms on an excel spreadsheet and the participant information was recorded and all identifying information had been removed, data were shared with the researcher. The data key and original data were maintained by the Student Assistance Coordinator and the Assistant Director of Special Education and password protected where it was only accessible to the two of them. The data key used for this study was destroyed at the conclusion of the study by the District Administrators. The de-identified data, which utilizes pseudonyms, was stored on the researcher's laptop.

Data Analysis

This case study (Baxter & Jack, 2008; Stake, 1995) focusing on a bounded system of an intervention (Creswell, 2007) was to understand and describe the impact the BRAIN program had on the program participants utilizing extant data. Simon and Goes

(2013) referred to this type of research as ex post facto research, which can be reviewed as an experimental research in reverse. Their reference was explained as conducting social research when it was not possible or acceptable to manipulate the characteristics of human participants; however, the research was needed to gain insight into a particular case. While Merriam (1988) reminds us "there is no standard format for reporting case study research" (p. 193), it is proposed by several (Creswell, 2007; Stake, 1995; Yin, 2003), that data collection within a case study research contain rich, multiple sources of information to draw from to triangulate supporting data.

Participant backgrounds. A description of each student (disability, race/ethnicity, gender) will be given with any other background information provided by the district administrators. Any information will be included that is gained from log entries or incident notes derived from the student data management systems. The descriptions will help the reader develop an understanding of each students' context and setting within their education and provide a description of transitions each student experienced prior to the intervention (Creswell, 2007).

Video interview analysis. The researcher was not the interviewer and was not involved in helping to create the interview questions. The questions revolved around the major theme of 'what is your experience with the BRAIN program', 'what do you think of the BRAIN program', or 'what would you like to share about the BRAIN program'. These transcripts were reviewed for similarities, differences, categories, themes, concepts, and ideas. Charmaz (2006) describes the step between collecting data and developing theory to explain the data as the coding phase. This phase is defined as "what is happening in the data and when the researcher begins to grapple with what it means"

(pg 46). In order to accomplish this, an inductive analysis was done on the interview transcripts. The first coding identified key words and statements that captured the significance of what was being expressed. Recurring word choices, as well as in vivo codes were saved verbatim for clarity and depiction of unique perspective. Focused coding around the recurring themes helped categorize data incisively and completely (Charmaz, 2006). Following categorizing the data, theoretical coding was developed within several of the categories to help explain logical chains of evidence and establish linked relationships. Charmaz (2006) discusses creating a diagram to create the vision the researcher has for the categories. Glaser (1978) describes this as 'weaving the fractured story back together" (p. 72). It is the hope of the researcher to create such a diagram depicting the participants' portrayal of the impact of the BRAIN program on their lives.

Graphical representation. The researcher used a graph or table representation to record data collected for each individual student on each dependent variable following the design notation often used for single subject research designs (Gast, 2010). Within this design notation, the effects of the intervention on participants was noted by graphing data in three periods: pre-intervention or baseline (four semesters prior to introduction of the intervention), the intervention period (four semesters), and post-intervention (two semesters following intervention).

Pre-intervention or baseline is a condition of naturally occurring contingencies for problem behavior for students within the school district. The students were on individualized educational programs and their behavior was being addressed through these documents. The district tiered behavior interventions flowchart (see Appendix A) was applied for all students needing behavior addressed. Data collection from the

dependent variables (standardized assessment tests, grade point averages, school attendance and discipline) were recorded in Appendices H-K. The intervention period is the time period the participating students were voluntarily involved in the BRAIN program. The only fidelity check provided during the intervention condition was the District Team meeting on a weekly basis with the teacher to discuss individual student progress and students wanting to "level up" within the BRAIN program. The post-intervention period was the year following the intervention. The participating students were no longer involved in the BRAIN program and were no longer students at the middle school. Their educational environment had changed to the high school setting.

Visual analysis. Gast (2010) discusses the visual analysis of graphed represented data. One comparison is level change between two adjacent conditions. Level change is the comparison of the values of the last data point in one phase with the first data point value of the next phase. Describing these values as improving or deteriorating relative to the objective of the intervention gives the researcher an idea of how immediately powerful or abrupt a change the intervention had on the subject. This comparison of values could be noted at the beginning of the BRAIN intervention and at the first of the year following the intervention on the variables of GPA, school attendance, and number of referrals.

Another visual aspect of results that could be noted for overall change is trend direction. Trend, or lines of progress, can also be referred to as slope. According to Gast (2010), trend is figured by dividing the data within a phase into half, then within these halves finding the mid-rate and draw a line to connect these two points. Trend lines can either be decelerating, accelerating, or zero celerating. Individual students' trend lines

could be determined for GPA, school attendance, and number of referrals for the baseline, intervention, and follow-up years.

Descriptive analysis. A descriptive analysis of pre- and post-test data will be made on the four factors (attendance in school, disciplinary referrals, proficiency levels on standardized testing, and grade point averages) to analyze individual student changes and overall group comparisons in the selected outcomes. The overall question to be addressed as to whether the implementation of the BRAIN program can be associated with measurable results on: (a) school attendance, (b) number of discipline referrals resulting in suspension days (in and out of school), (c) testing level on state mandated testing, and (d) grade point averages for the participants within the program and were they able to generalize their academic success beyond the presence of the intervention itself?

Results

Participants' Profiles

Each of the four participants in the BRAIN program is unique and was chosen for the program based on specific behavioral needs. Each of their background information, as much as the student data management system provided, is presented.

Iris. Iris was identified on the student data management system as a white female, not Hispanic. She attended school within the same district beginning in the first grade, with a short removal on two separate occasions in the early elementary years due to Department of Human Services (DHS) removal from the home. The DHS removal resulted in a gap in her records for the second semester of her third grade year through the first semester of her fourth grade year. According to health information forms

completed and returned to school, the student had a diagnosis of attention deficit hyperactivity disorder (ADHD) and Asperger Syndrome. Iris took daily medication at school.

Health comments indicate Iris passed her hearing and vision screenings when offered by the school district. Health information forms noted at the end of her fifth grade year student began wearing glasses. Records indicate student was also immunization compliant through eighth grade documentation. There was a notation in the health records during the first semester of her ninth grade year, Iris indicated being hungry and she was enrolled in the school food backpack program. This food distribution program is by parent or student request to obtain a backpack of food items to take home over the weekend or when school is not in session.

Iris was referred for an initial evaluation in kindergarten at the age of six for a multidisciplinary evaluation to determine identification of a possible disability and to determine any special educational needs Iris may have had at that time. The concerns noted in the records were "struggles following multiple step directions, understanding concepts, and recalling objects. …does not understand what the teacher is asking her to do. …is easily distracted by sounds and appears to need movement." The school records indicate she was served through an Individualized Education Program (IEP) beginning in kindergarten under the disability category of developmentally delayed with a suspected category of speech language impairment. She received direct instruction services from a speech/language pathologist.

Iris was referred again in the fifth grade for an updated psychological educational evaluation to determine present levels of functioning and dismissed from her

speech/language services. School records at that time indicated she was experiencing significant behavioral difficulties, including multiple suspensions. Paperwork indicated she was struggling with appropriate social behavior with peers and adults. Inappropriate social behavior defined as hissing, spitting, non-compliance, tearing assignments up, and eating inappropriate items. Psychological testing was conducted by an outside agency and provided to the school district. A multi-educational team within the school district provided psychological, adaptive, and achievement assessments to assist the multidisciplinary evaluation group with their summary. The team determined Iris was eligible for special education services under the eligibility category of emotional disturbance toward the end of her first semester fifth grade year. At that time, Iris demonstrated average levels of expressive and receptive language scores and cognitive abilities with a conduct disorder diagnosis demonstrating anxiety and depression (internalizing behaviors), as well as hyperactivity and aggression (external behaviors). The services provided to her were changed to include monitoring for a mild discrepancy in math and a behavior intervention plan. The IEP team changed Iris's placement to an in-district day treatment program where she would receive half day of academics and half day of intense therapeutic counseling. This placement continued through the beginning of her sixth grade year.

The behavior intervention plan (BIP) accompanying the IEP addressed the identified target behaviors of stealing and defiance/non-compliance. Stealing defined as the illegal taking of another person's property without their consent. Defiance/non-compliance defined as any instance or response (including both verbal statements and non-verbal non-compliance) that does not match the instruction or direction given within

10 seconds. The identified goals were (a) student will be safe at all times while at school-safe body, safe mouth, and safe space (e.g. no aggression or stealing of property); (b) when given a task/demand, student will comply (with fewer than two prompts) within 10 seconds with 90% accuracy. Various supports implemented were (a) speaking and interacting in a neutral manner using a calm voice; (b) student given choice when asking her to accomplish a task/demand; (c) state directives, expectations and directions in a clear and concise manner and then withdraw; (d) student will wait until after passing time to change classes; (e) belongings (coat and backpack) will be checked in at the beginning of the day with teacher and check out at the end of the day; (f) reward student for putting forth good effort, attempting assignments, task completion, and positive attitude; (g) verbal positive feedback; and (h) positive notes to student and parents.

In the middle of the first semester sixth grade year, the services provided through the IEP were changed to co-teaching in the English language arts area, along with the monitoring in math, following her return from an in-district day treatment program. Paperwork indicates the school district using a BIP and checking in with special education teacher with minimal improvements in behavior.

At the beginning of Iris's seventh grade year, as she was transitioning back into the typical school environment from the in-district day treatment program again, a meeting was held with the parents to introduce the BRAIN program. A Tier 3 program was needed for Iris to address behaviors and keep her in school full-time to be able to consistently address academics. As indicated by one of the BRAIN developers speaking generally about the students,

> (They) are not able to function socially in a typical classroom setting. They need to be taught those behaviors…at some point and time they developed habits and things that were sabotaging their ability to be successful. And so in this program we go back to the basics. (Coordinator of Student Assistance, taped interview, spring, 2016)

IEP services were outlined as direct instruction by a special education teacher in all core subject areas, including a life skills hour to cover *BrainWise* curriculum and daily morning meetings to cover daily review on daily progress of goals. Documentation was indicated on the IEP as the student progressed through the BRAIN leveled program, the services would be changed to reflect more time in general education settings.

Iris completed a career interest inventory beginning her eighth grade year indicating her top three career choices respectively were (1) clerical, (2) social/helping, and (3) outdoor. When questioned about a job following high school, Iris would like to be employed at a zoo as a zookeeper.

Jeremy. Jeremy was identified on the student data management system as a twin who is a white male and American Indian, not Hispanic. He attended school within the same district since he turned three years of age. According to health information forms completed and returned to school, student had a diagnosis of Celiac disease and needed a gluten free diet beginning as early as first grade through the end of sixth grade, when no allergies indicated on forms returned from seventh through ninth grade. Student had no daily medication given at school. Health comments indicated Jeremy passed hearing and vision screenings when offered by the school district.

Jeremy was referred to the school district as a two year old receiving therapy from an agency other than the school district. He had received approximately 10 months of private speech therapy before turning three. An initial evaluation was conducted by the school district prior to this third birthday with a multidisciplinary evaluation to determine identification of a possible disability and to determine any special education Jeremy needed. The concerns noted in the records were "…not minding, aggressive, overactive, easily frustrated, tends to resolve conflicts with aggression, and often plugs ears to escape stress." The school records indicated he was served through an IEP beginning at age three under the disability category of developmentally delayed with a suspected category of speech language impairment. He received speech/language therapy services at the age of three on a weekly basis. Shortly thereafter, in the same year, his services were increased to include time in the developmentally delayed classroom on a daily basis to improve overall communication skills and prepare him for pre-kindergarten the coming year.

During Jeremy's kindergarten year, occupational therapy services were added to his IEP due to difficulty processing stimuli he experienced. Sensory input for him seemed confusing, upsetting, or not meaningful to him. For Jeremy's first grade year, time in the resource room was also added to his IEP.

As Jeremy neared the age of 10, a multidisciplinary evaluation was conducted with the added information from an outside source giving Jeremy a diagnosis of Asperger's Disorder. With this diagnosis, the review of previous evaluations, classroom performance, and team input, it was determined that Jeremy met the eligibility criteria for the category placement under Autism towards the end of this third grade year. The services within the IEP did not change based on the change in his category.

Jeremy's parents requested a re-evaluation of his IEP towards the end of his fifth grade year to specifically include a functional behavior assessment and behavior intervention plan (BIP). School records at that time indicated he struggled with appropriate social skills. Teachers reported Jeremy becoming stressed and engaged in emotional meltdowns where he would withdraw, refuse to work or escalate to being verbally disruptive. Jeremy demonstrated average intellectual functioning with a full scale intellectual quotient of 106. Academically, he performed average in reading and math skills, but worked very slowly when asked to quickly solve math facts. Spelling was a weakness. When writing sentences with provided words, Jeremy performed within average range; however, when asked to generate his own words, his performance declined significantly. Following the assessment during the first of his sixth grade year, a functional behavior assessment and BIP were included as a part of his IEP addressing the identified target behaviors of emotional regulation and non-compliance/defiance. Emotional regulation defined as withdrawal, anxiety, and inability to move past whatever had upset him. Non-compliance/defiance defined as any instance or response (including both verbal statements and non-verbal non-compliance) that did not match the instruction or direction given to him. The identified goals were (a) student will control his emotions and indicate to the teacher when feeling overwhelmed or stressed with happy face/sad face indicator; (b) student will stay on task and complete work in a timely manner and ask for a sensory break if needed; and (c) student will work to maintain positive interactions with peers during the school day.

Services on Jeremy's IEP during his fifth grade year were changed to include co-teaching within a language arts classroom for 85 minutes of every school day. He also

had access to a teacher assistant to assist him in following his visual schedule at the beginning of each class period and to help facilitate sensory breaks as needed. The speech language pathologist indicated his pragmatic skills were average for his age/gender, his eye contract was good and he made relevant contributions to topics during conversation. The IEP team determined he no longer met eligibility criteria as a student with speech impairment.

For Jeremy's sixth grade year the addition of co-teaching during a math class was included on his IEP. He also continued to have a BIP included with his IEP. Records also indicated the parent was utilizing outside-of-school services for one-on-one counseling to help with Jeremy's anger.

Looking forward to the seventh grade year, a transition meeting was held to discuss the type of program and services Jeremy would need moving into the middle school setting. As Jeremy's mother stated:

> …it was always me going into the school for IEPs saying ok, can we take him out of this because maybe that will reduce the stress…if we reduce him to one room. This kid doesn't need to be in the whole student body, so I was working with them to reduce him down to the smallest setting possible, which ideally is not the best for him, not the best for anybody, but it is what he needed, I think at that time because there were so many other stressors at school. (Parent, taped interview, spring 2016)

A Tier 3 program was needed to address Jeremy's behavior needs. Educators sought to provide a program to give him control in stressful situations in an educational setting that would help teach him confidence and independence. Paperwork indicates a team meeting

was held at the beginning of his seventh grade year, introducing the BRAIN program to Jeremy and his parent. IEP services were outlined as direct instruction by a special education teacher in all core subject areas, including a life skills hour to cover *BrainWise* curriculum and daily morning meetings to cover daily review on progress of individual goals. Documentation was indicated on the IEP as Jeremy progressed through the BRAIN program. The services would later be changed to reflect more time in the general education settings.

Jeremy completed a career interest inventory beginning at the end of his eighth grade year indicating his top three career choices respectively were (1) arts and communication, (2) clerical and administrative, (3) technology. When questioned about a job following high school, Jeremy stated he would like to attend college for a career in computer technology.

Billy. Billy was identified on the student data management system as a white, Hispanic male. He began attending the identified school district as a four year old student in the pre-kindergarten half-day program, with sporadic attendance within the district during his elementary school years. Attendance records indicate steady attendance within the district for three years; pre-kindergarten, kindergarten and his first grade year. During the remainder of his early elementary years withdrawals are noted for short stays in out-of-district day treatment facilities and hospital facilities. After Billy's first grade year, he was enrolled in a transitional first grade class based on an educational team decision made on his preparedness for the second grade level curriculum. Billy's transitional first grade year indicates a nine week withdrawal for a hospital stay and a ten week withdrawal for a hospital stay. The first semester of his second grade year was spent in a

day treatment program. Billy returned to the school district for four weeks before returning to a hospital setting for the remainder of his second grade year. School records do not indicate the location for third or fourth grade attendance. Billy missed two weeks during his fifth grade year due to a hospital in-patient stay. He also attended an in-district day treatment program during his fifth grade year. Billy's sixth grade year began with attendance within the regular education program classes on a shortened schedule from 8-11am. He attended until two weeks prior to Christmas when he left for an out-of-district day treatment program. Billy did not return to the school district until the beginning of his seventh grade year, when he entered the BRAIN program.

According to health information forms completed and returned to school, Billy had a diagnosis of Asthma triggered by seasonal allergies, ADHD, and gastro-esophageal reflux disease (GERD). The mother also indicated sleeping concerns. Student took daily medication at school. Beginning in the fifth grade, mother added bipolar to the health information form. Heart condition with bicuspid aortic valve was added in the seventh grade, as well as student wearing glasses. A diabetic medical management plan was filed in the health office stating Billy had a diagnosis of Type 2 Diabetes during his eighth grade year. Health information form returned for his eighth grade year added bowel concerns and changed to his diabetic management plan. Health comments indicated Billy passed his hearing and vision screenings when offered by the school district.

Billy was referred for an initial evaluation during his transitional first grade year at the age of seven for a multidisciplinary evaluation team to determine identification of a possible disability and to determine any special educational needs he may have had at that time. The concerns noted in the records were angry outbursts and he often had to be

removed from the classroom. Also noted was defiance and inappropriate comments (sometimes profanity). At the time of initial evaluation, Billy's mother indicated he could be very sweet; however, that could change in a second and he would be mad or sad. Mother also indicated he hated school. The psycho-educational evaluation indicated Billy had an overall measure of intellectual functioning of 87, which placed him within the low average range of intellectual ability. He demonstrated strength in his ability to analyze, synthesize, and discriminate auditory stimuli in order to process; while he demonstrated a weakness in his abilities concerning visual auditory associations, visual patterns, and visual discriminations. Billy's academic functioning, when compared with others his age, revealed average in math reasoning and oral language. His performance was low average in listening comprehension and low in brief writing and math calculation skills. Billy's performance was in the low average range in broad reading, reading fluency, and reading comprehension. Behavior assessment scales for Billy resulted in significant concern in the areas of internalizing problems, externalizing problems, and adaptive skills. These indicated he may be hyperactive, aggressive, angry, and lack self-control when faced with stress and adversity. It also stated he might also have difficulty making friends as he could be threatening towards others and may act sad, anxious or withdrawn. Lastly, the assessment indicated he may become easily upset in response to environmental changes and have difficulty maintaining his behavior and mood. Based on these evaluative results the team determined Billy qualified for special education services under the category of developmentally delayed with the suspected category of emotionally disturbed and other health impairment.

The school records indicate he was served through an IEP beginning his transitional first grade year receiving direct instruction services from a qualified special education teacher on a daily basis through collaboration with the general education teacher in the areas of language arts and math. The Behavior Intervention Plan (BIP) accompanying the IEP addressed the identified target behaviors of inappropriate language and aggression. Inappropriate language defined as the use of inappropriate comments and profanity aimed toward peers and teachers. Aggression defined as kicking, screaming, and throwing things towards peers and teachers when student does not get his way. The identified goals were (a) student will use appropriate language (with fewer than two prompts) 100% of the time while at school and (b) student will learn to use a cool down area (with no more than two reminders). Various supports implemented were (a) verbal cues given to student to use appropriate language when frustrated; (b) prompting student to use self-management or cool down area; (c) positive reinforcement (such as computer time and office visits for kind words); (d) teaching student appropriate words to use in school; and (e) use of behavior chart to help student self monitor behavior on a daily basis.

Upon returning to the district after approximately two years away, an updated psycho-educational evaluation was conducted at the beginning of Billy's sixth grade year to determine functional placement and confirm category. He was being served by a special education teacher direct instruction for the subjects of English Language Arts and math with a monitoring service for social studies and science. At that time he was on a half day attendance schedule for core subjects only. Billy's average intellectual ability was confirmed. Academically, most scores he demonstrated were in the low average or

low range, except for math problem solving in the average range. All of Billy's reading and writing scores fell approximately three years behind his peers. A classroom observation revealed a student that was mentally disorganized, consistently slow to respond to tasks, and mumbled to himself. When an adult was not individually assisting him, Billy became rude and defiant with verbal outbursts towards peers and teachers with the function noted as attention seeking and task avoidance. With Billy's current diagnosis at that time of bipolar disorder, anxiety, and ADHD, he qualified under the category of emotionally disturbed. An updated BIP was developed to accompany the IEP addressing the identified behaviors of aggression and defiance/non-compliance. Aggression was defined as any instance of actual or attempted kicking, hitting, pinching, biting, or pushing of another person. This included any instance of throwing items at or in the direction of another person. Defiance and non-compliance were defined as any instance or response that does not match the instruction or direction given within 10 seconds. Billy's identified goals were determined to be (a) he will be safe at all times while at school – safe body, safe mouth, and safe space (e.g. no aggression or property destruction) and (b) when given a task/demand, he will comply (with fewer than 2 prompts) within 10 seconds with 90% accuracy. He may have to remove himself to a safe place in order to calm himself effectively. Various strategies / interventions included (a) posting a visual schedule; (b) post rules and expectations; (c) three "cool down" passes per class per semester; (d) offer choices when possible (materials, etc, assignment); (e) positive reinforcement for appropriate behavior; (f) mentor for check-in-connect-out process to give feedback and encouragement on social emotional goal setting and self-

management; and (g) small group with counselor on anger management skills. Data collection was recommended for each teacher to monitor specific behaviors.

As transition meetings were held at the beginning of Billy's seventh grade year, discussion was held about the type of program and services needed moving forward for Billy as he was transitioning back into the district from an out-of-district day treatment program again. A Tier 3 program was needed to address behaviors and keep Billy in school full-time to be able to address academics on a consistent basis. As stated by the middle school principal, none of the students benefit from not being in attendance at school on a regular basis. She stated "they (students) often become so angry that they do not know how to control their anger and so they become violent." (Principal, taped interview, spring 2016). Paperwork indicates a team meeting was held at the beginning of his seventh grade year, introducing the BRAIN program to Billy and his parents. IEP services were outlined as direct instruction by a special education teacher in all core subject areas, including a life skills hour to cover *BrainWise* curriculum and daily morning meetings to cover review on progress of individual goals. Documentation was indicated on the IEP as Billy progressed through the BRAIN program. The services would be changed to reflect more time in general education settings.

Billy completed a career interest inventory beginning at the end of his eighth grade year indicating his top three career choices respectively were (1) arts and communication, (2) protective and military service, (3) social and helping. When questioned about a job following high school, Billy stated he would like to attend a career vocational technology center to pursue a career in woodworking.

Jonathan. Jonathan was identified on the student data management system as a white male, not Hispanic. Jonathan's mother is a certified teacher and is employed for the school district where he attends. He attended school within the same district beginning with pre-kindergarten at the age of four. Jonathan attended the same school where his mother taught from his kindergarten year through fourth grade. During Jonathan's fifth grade year, he was out for 20 school days attending an out-of-district hospital facility, attended the district for 22 days, and then returned to the out-of-district hospital facility for 15 days. He did return for the last 11 days of his fifth grade year of school in the district. During Jonathan's sixth grade year (second semester), he spent 67 days in an out-of-district day treatment facility. He did return for the last 18 days of his sixth grade year.

According to health information forms completed and returned to school, Jonathan had a diagnosis of ADHD and an atrial septal defect (heart defect). Manic depression and aggression was added to the health information form returned at the end of his fourth grade year; however only mentioned that one year. Student took daily medication at school. Health information forms beginning at the end of his seventh grade year indicated student wears glasses. Health comments indicate Jonathan passed his hearing and vision screenings when offered by the school district.

During Jonathan's pre-kindergarten year, significant behaviors were identified to interfere with his education and the education of his peers. Documentation included disruptive behaviors such as walking away from assigned areas, running around the room, jumping on tables, being argumentative with staff and peers and stimulation seeking behavior (crashing blocks, throwing toys and spontaneous noises). The school

implemented an informal behavior plan with counseling group session to address Jonathan's behavior. The behavior plan included (a) sitting in close proximity to the teacher, (b) breaking down of tasks, (c) timer to show length of tasks, (d) body movement breaks, (e) systematic behavior chart to include visual cues, (f) consistency between home and school environment, (g) immediate feedback to encourage self-regulation, and (h) use of small group instruction.

Another behavior observation was conducted during his kindergarten year, noting Jonathan demonstrating aggressive behavior toward peers, not to be mean to them, but simply achieve what he was after. He was also very intent on pointing out the mistakes of others, but not accepting of correction to himself. Again, suggestions were made for counseling groups to role play appropriate interactions with others and the use of a behavior chart.

Jonathan was referred for an initial evaluation in second grade at the age of eight for a multidisciplinary evaluation to determine identification of a possible disability and to determine any special educational needs he may have had at that time. The concerns noted in the records were suspensions due to aggression; specifically fighting, hitting, kicking and name calling. Parent indicated student is not overly concerned when he does poorly on school performance and has a "hot/cold personality". This was elaborated as "when he is on, he is on, when he isn't, it can be extreme." The psycho-educational evaluation indicated Jonathan had an overall measure of intellectual functioning of 91, which places him within the average range of intellectual ability. He demonstrated strength in his verbal comprehension, visual-spatial thinking, and auditory processing; while he demonstrated a weakness in his processing speech and short-term memory.

Jonathan's academic functioning, when compared with others his age, revealed high average in math applied problems and math reasoning. He scored average in reading fluency, writing, and math calculation. His performance was low average in math calculation and passage comprehension. Behavior assessment scales for Jonathan resulted in significant concern in the areas of difficulty engaging in social interactions with peers, unaware of social expectations, poor empathy, lacked subtlety in expression of emotion, quickly frustrated and expressed frustration inappropriately, requiring specific instructions to begin tasks, exhibiting uncoordinated motor movements, talked about single topic excessively, difficulty understanding jokes, difficulty understanding what caused people to dislike him, and failure to predict probable consequences in social events. The assessment indicated behaviors often associated with Asperger's Disorder, but no confirmed psychological basis. Also noted was Jonathan's diagnosis and symptoms of ADHD mimicking a spectrum disorder. The recommendation by the district multidisciplinary team was a qualification for special education services under the category of developmentally delayed with a suspected category of Other Health Impairment.

The school records indicate Jonathan was served through an IEP beginning in second grade receiving direct instruction services from a qualified special education teacher for social skills, behavior, and written expression. He was monitored in the area of reading. The IEP also included a BIP identifying the target behaviors of aggression towards others with emotional outbursts and noncompliance on academic tasks. Aggression was defined as the display of anger, attention, control, avoidance, frustration, and anxiety. Noncompliance on academic tasks was defined as any instance or response

that does not match the instruction or direction given communicating need for attention, control, avoidance, frustration, or anxiety. Jonathan's identified goals were determined to be (a) he will use appropriate words and actions when becoming upset with others four out of five opportunities, (b) he will successfully complete work on grade level four out of five opportunities, (c) he will follow verbal/visual directions with no more than two verbal/visual clues 80% of the time, and (d) he will comply with classroom procedures with no more than two verbal/visual reminders 80% of the time. Various strategies and interventions included (a) Receive instruction and guidance through social stories, role playing, reinforcements and checklists; (b) Give a list of appropriate choices when becoming upset; (c) positive feedback paired with verbal praise; (d) visual schedule; and (e) a safe place in and out of the classroom.

During Jonathan's fourth grade year his behavior continued to be of significant concern, as he continued to be non-compliant, oppositional, and aggressive towards others. He was referred for a reevaluation to determine his current levels of functioning in order to assist the multidisciplinary evaluation team in planning an appropriate educational program for him. On the basis of the evaluation, Jonathan was reported to demonstrate emotional reactions and behaviors that were inappropriate, regardless of the setting or situation. He appeared to be capable of showing responsibility or remorse for his negative behavior, evidenced by crying and apologizing; however, these challenging behaviors continued to occur. The function of Jonathan's behaviors appeared to be related to frustration and/or not getting the attention from others that he felt he needed. The behaviors were also perceived to be a result of Jonathan's perception of what was occurring in his environment. It was determined by the team during the second semester

of Jonathan's fourth grade year to change his category to emotional disturbance. His IEP services were also changed at that time to monitoring services, as his placement was changed to the in-district day treatment program for his fifth grade school year.

The first semester of Jonathan's fifth grade year he attended the in-district day treatment program until he was placed in a psychiatric facility at the beginning of the second semester. He returned to the in-district day treatment program and then back to the psychiatric facility before returning to the district school at the end of the second semester. For the last 11 days of his fifth grade year, he attended school for a half day placement.

Jonathan was referred again in the sixth grade for an updated psychological educational evaluation to determine present levels of functioning. School records at that time reflected significant behavioral difficulties, including multiple suspensions, time spent in in-district day treatment program, time spent in an out-of-district day treatment facility, as well as an in-patient psychiatric hospital setting. Psychological testing was conducted by an outside agency and provided to the school district. A multi-educational team within the school district provided psychological, adaptive, and achievement assessments to assist the multidisciplinary evaluation group with their summary. The team determined Jonathan's continued eligibility for special education services under the eligibility category of Emotional Disturbance. Data provided indicated diagnosis of ADHD, mood disorder, and oppositional defiant disorder with a pattern of impairment in social interaction, as well as restricted, repetitive behaviors consistent with an Autism Spectrum Disorder. The services on his IEP provided to him were changed to include co-

teaching setting for English and Math with regular class instruction for science and social students with a teacher's assistant assigned to him.

The Behavior Intervention and Support Plan (BISP) accompanying the IEP addressed the identified target behavior of anger or physical aggression. Physical aggression defined as showing physical signs of anger, threatening others or showing self-harming actions. Physical signs of anger were further described as punching walls, kicking chairs/table/wall, and making descriptive threats of harming others. The identified goal was: When angry, student will calm down before returning to the activity or situation. He may have to remove himself to a safe place in order to calm himself effectively. Various strategies and supports implemented were (a) small group with counselor for teaching social emotional and anger management skills, (b) sensory breaks built into student's schedule, (c) snack opportunity, (d) reminder for student to go to office for medication, (e) calm down strategies on a chart to provide as reminder, (f) working for reinforcers with check-in person, and (g) preferred incentive free-time activities.

Jonathan attended school until December of his sixth grade year, when he was admitted to a psychiatric in-patient facility. He was taken out of this facility at parents request and placed in an out-of-district day treatment program until the last month of his sixth grade year. Upon returning to school, Jonathan's IEP listed services as co-teaching for English language arts and math instruction. His science and social studies classes he would attend with a teacher's assistant. An assistant would also accompany him to elective classes, lunch, and recess.

Looking forward to the seventh grade year, a meeting was held to discuss the type of program and services Jonathan would need moving into the middle school setting. A Tier 3 program was needed to teach Jonathan anger management, self-regulation, and coping skills. The principal of the middle school stated on the taped interview in the spring of 2016, "Nobody wants to suspend kids over and over and over. It's doing nobody any good! That's why we worked to create this (BRAIN) program." IEP services for Jonathan's seventh grade year were outlined as direct instruction by a special education teacher in all core subject areas, including a life skills hour to cover *BrainWise* curriculum and daily morning meetings to cover daily review on progress of individual goals. Documentation was indicated on the IEP as Jonathan progressed through the BRAIN program. The services would be changed to reflect more time in general education settings.

Jonathan completed a career interest inventory beginning with his eighth grade year indicating his top three career choices respectively were (1) technology, (2) arts and communication, (3) business management. When questioned about a job following high school, Jonathan stated he would like to complete the graphic design program at a career technology center to prepare for a career in graphic design.

Taped Video Interviews

The interviews provided to the researcher were uncut, raw footage of taped video interview segments used to produce a district-wide informative video for the BRAIN program. These segments were taped in the spring of 2016 toward the end of the first year of the intervention with the participants. Those individuals being interviewed were the principal of the school, teacher, two individuals who helped create the BRAIN

program (psychologist and Student Assistance Coordinator), one of the parents of a BRAIN participant, and two BRAIN participants. The researcher was not the interviewer and was not involved in the creation of the interview questions.

The interview questions varied slightly depending on who was being interviewed. The major theme of the questions was experience with the BRAIN program. Some of the questions were:

1. What is your experience with the BRAIN program?
2. What do you think of the BRAIN program?
3. What would you like to share or tell about the BRAIN program?
4. What role did you play in the BRAIN program?
5. What do you see happening?
6. What changes or differences have you seen?

Clarification questions were asked from the interviewer if an answer was not clear or if more detail was needed on a specific answer.

After word-for-word transcription of the interview segments, several readings of each segment was necessary, as well as repeated viewings of the videos, to gain insight into the overall impression the individual was providing regarding their description of their experience with the BRAIN program. Charmaz (2006) stresses looking at data in a way as to being open to discovering the subtle meanings and insights. The transcripts were then reviewed for similarities, differences, categories, themes, concepts, and ideas following the focused coding procedures outlined by Charmaz, 2006, to develop theoretical coding to help explain logical chains of evidence and establish linked relationships.

Analysis of the interviews resulted in five themes related to the understanding and description of the impact the BRAIN program had on the overall quality of the educational experience for the participants, as well as their families, within the program. These themes are (a) prior student behavior, (b) prior parental needs, (c) responses by building staff, (d) what parent success looks like, and (e) what student success looks like. Coding themes were presented, as well as direct quotes where appropriate for collaboration and where an individual directly is describing the phenomenon being presented. See Appendix G for details of the Code Book.

Prior student behavior. Student behavior that existed before coming into BRAIN, the first theme, was an important component considered by the district team in the creation of the intervention program, as well as criteria that placed the students on Tier 3 of the district behavior intervention flowchart. All interviewees described and defined prior student behavior, some in greater detail than others. Half of the interviewees noted violence and anger, not only towards others, but also towards themselves was a part of these students' lives from early in their education years. The students' description of their behavior and experience prior to BRAIN was very short and concise, mentioning only the anger and the lack of suspensions. One student indicated he didn't want to discuss the years prior to BRAIN. The principal's description was the most detailed

> …angry…autism…oppositional defiance disorder…behavior type issues and so what they were having is complete meltdowns where they would throw chairs in a classroom. They would threaten people, threaten teachers, self-harming type behaviors…out of control behaviors. (Principal, taped interview, spring, 2016)

In three out of the six interviews, the students' prior behavior was related to environmental concerns and a need for behavioral and social education. The environmental concerns were clarified as a need for consistency, routine, and structure. These points were brought out by the coordinator, parent, and psychologist.

Prior parental needs. Parental needs was the second theme. Parents were present at meetings with documentation showing as far back as three years old with one of the participants. The need for support was expressed as a missing component by all three of the interviewees that mentioned this component prior to the BRAIN program. The parent described support in two ways. The first support was from the educational realm of the staff that supported her son. The second was the school support that evolved from the parent education piece. The other part of the prior parental needs was a parental educational piece. Educational terms, behavioral techniques, and effective parenting skills were all mentioned as suggested topics by both the principal and the coordinator. As a part of the Coordinator's interview she stated

> We wanted to make sure that we were working with the group as a whole so we could all support ourselves and be a team. So I was asked to help with the parent side. So we worked on developing and looking for a curriculum for our parents… (Student Assistance Coordinator, taped interview, spring, 2016)

Responses by building staff. The third theme, response by building staff, indicated that the staff at the middle school views the BRAIN program as positive and successful. Three of the six interviewees discussed this theme: teacher, psychologist, and principal. The staff was viewed as a problem solving entity for students, while working out realistic concerns they were confronted with along the path of setting up a new

intervention program. The principal mentioned that communication and education were key elements to helping the staff understand the concepts and purpose behind the BRAIN program. These elements also ensured that the students in the BRAIN program had support from all stakeholders. In her interview, the principal indicated when there was a concern expressed from teachers about the students being "coddled" or "enabling their behavior", she said explanation was needed.

> Our goal is to teach these students to regulate their behavior, that they do have that control. And they need a more structured way to do it. They need those skills every day, practicing every single day….they need to self-regulate their own behavior. So that, that has been an on-going education of the whole staff about the purpose of the program and so now I think we have, we have a lot of support for it here. (Taped interview, spring, 2016)

P**arent success.** Parent success and what that looked like to the interviewees was the fourth theme mentioned by half of the interviewees. Educational benefits provided to the parents was one component of parent success. The principal, parent, and coordinator mentioned the curriculum offered to the parents in their interviews. The parent commented that while she saw the curriculum as an "educational benefit for me" (Taped interview, spring 2016), it also evolved into discussions with other parents. Comments were made such as "yes, this is the material they provided, but this is how it might pertain to us" (Parent, taped interview, spring 2016). The parents also started sharing among themselves, developing relationships with other families, and found a common bond that lasted beyond the required number of parent education classes. As the parent expressed in her interview, "…a benefit, kind-of in a way I didn't expect was the additional support

coming from other parents" (Parent, taped interview, spring, 2016). The principal shared in her interview that the parents created a closed Facebook page for them to communicate and even asked her to schedule meetings once a month after the parent educational piece was over. The principal interpreted this as the parents needing additional, on-going support from each other. Another parent success involved the relationship between parents and the school personnel. Parents experienced a greater trust and connection with the staff at the school after participation in these classes. The coordinator was quoted as saying,

> And I have actually had parents tell me they feel connected to the school again. They feel like they can trust the school again. So the biggest reward on the parent's side is that these parents that felt very isolated and disconnect now feel like they can come back to a school and we are all here together for them. They get that same experience that a, all parents, deserve when they come, when their kids are coming to school. (Student Assistance Coordinator, taped interview, spring 2016).

Student success. The fifth and final theme was student success mentioned by all interviewees. The interviewees viewed student success as behavioral, emotional, and academic improvements. Behavioral success, specifically mentioned by all interviewees, came in the form of students having control over their own behavior. In the parent interview, she discussed her son having the opportunity to watch someone else's behavior develop among "unique peers having all been down a certain path" (Taped interview, spring 2016) and being able to sit back, observe, learn, and give an objective view of how her son would handle that situation. Both students interviewed discussed no suspensions,

detentions or time in ISI during the school year. When asked to make reference to last year, the students did not want to talk about previous years. The principal comments regarding behavior were "…to start to learn how to regulate their own behavior gives them a sense of control and a sense of power that they've never had before" (Taped interview, spring, 2016). The emotional benefits, mentioned by four of the interviewees, go along with the behavioral control. The psychologist was quoted as saying, "They (students) are getting to try on new behaviors because the anxiety is not there. The risk is less for them. So therefore they get to try and they get to venture out" (Taped interview, spring, 2016). The parent described her son as "…more mature…a greater sense of responsibility, definitely. And he is much quicker to calm himself down in a situation, much quicker. So and I think that the only thing that has changed is the program" (Taped interview, spring, 2016). One of the students being interviewed described what they learned as "whenever somebody is mad and you're mad, stay on a lower level than them" (Taped interview, spring 2016). In another instance, the student described what the class taught him as "take a deep breath and walk away" (Taped interview, spring, 2016). The teacher described the other students in the classroom as having positive interactions with the BRAIN students when in her classroom. The principal stated "I think the very best part about the whole program is to watch them to see how happy they are when they get to level up. Just that excitement!" (Taped interview, spring 2016). Academic benefits are best said in another quote by the psychologist,

> I think these students are being educated, not only is it behavior management, not only is it attending school and no truancy and no suspensions but they're being

> educated, so I think of the warm fuzzies of seeing them successful. (Taped interview, spring, 2016)

She goes on to describe the students' engagement in the classroom as "consistent success", "everyday routine" and "knowing the expectations" (Psychologist, taped interview, spring, 2016). The teacher describes them as students that are different from the beginning of the year in that they are less apprehensive, less fearful, and now are more secure in themselves.

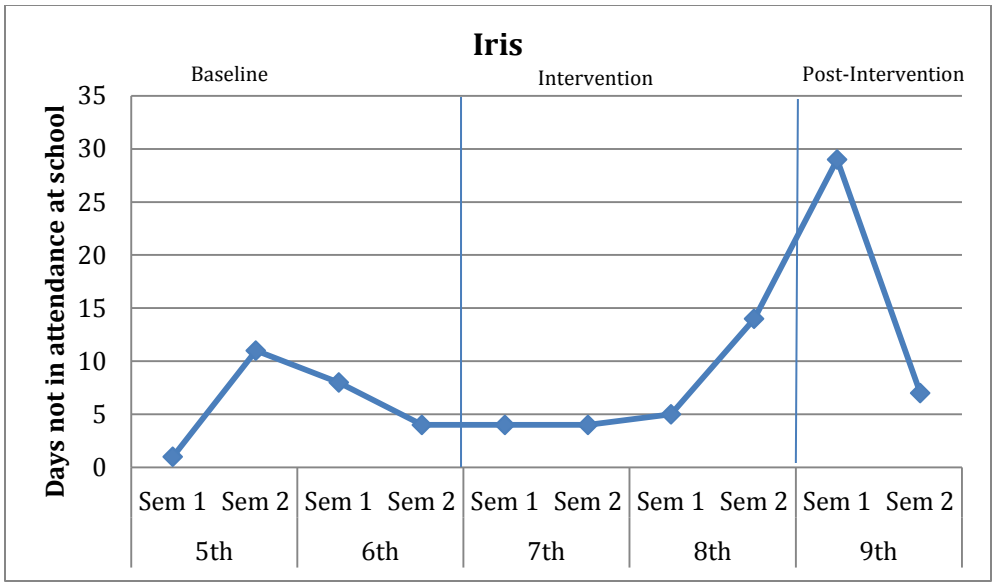
Behavioral Results

Understanding and describing the impact of the BRAIN program must be looked at from many different views. Behavior and academic results must be reviewed when looking at the overall quality of the educational experience for the participants and determining if the BRAIN program was associated with measurable changes for the participants. The researcher looked at the behavioral indicators such as school attendance, discipline referrals resulting in suspension days (both in and out of school), and incidents and log entries for the participants within the program. The researcher was given access to the above data through the school district's data management system. The results will be notated in three periods: pre-intervention or baseline, intervention period, and post-intervention. Each of the three periods is broken into semester increments. A visual analysis will be discussed for each variable.

Attendance. Being physically present regularly and on a consistent basis is considered to be an accepted definition of attendance. Attendance was a targeted variable because the BRAIN developers purposely intended it to be an outcome that students be physically present at school more time than in their previous years at school. In the taped

interviews recorded the spring of BRAIN's first year, comments were made "…I think we will keep kids in school and we know if we keep kids in school, they will be more productive down the line" (Student Assistance Coordinator). "…not only is it attending school and no truancy and no suspension, but they're being educated…seeing them successful" (School Psychologist). "…nobody wants to suspend kids over and over and over. It's doing nobody any good. It's not doing the kids any good" (Principal). The language in the BRAIN contract presented to parents stated "Designed to be an alternative to suspension in certain situations." See Appendix B for parent contract. As stated in Algozzine, Wang, and Violette (2011), "It is difficult to learn when you are spending more time in discipline-related interactions than in those related to learning academic content" (p 3). A basic concept for schools is being able to teach students replacement behaviors and self-management interventions. Students have to physically be present on a regular and consistent basis for this to take place.

Each of the participants' attendance for the school years fifth through ninth grade was summarized in the graphs in Figure 1. A graph of more in-depth details drawn from the extant data given to the researcher is given in Appendix H.


Iris
Baseline
Intervention
Post-Intervention
Days not in attendance at school
35
30
25
20
15
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5th
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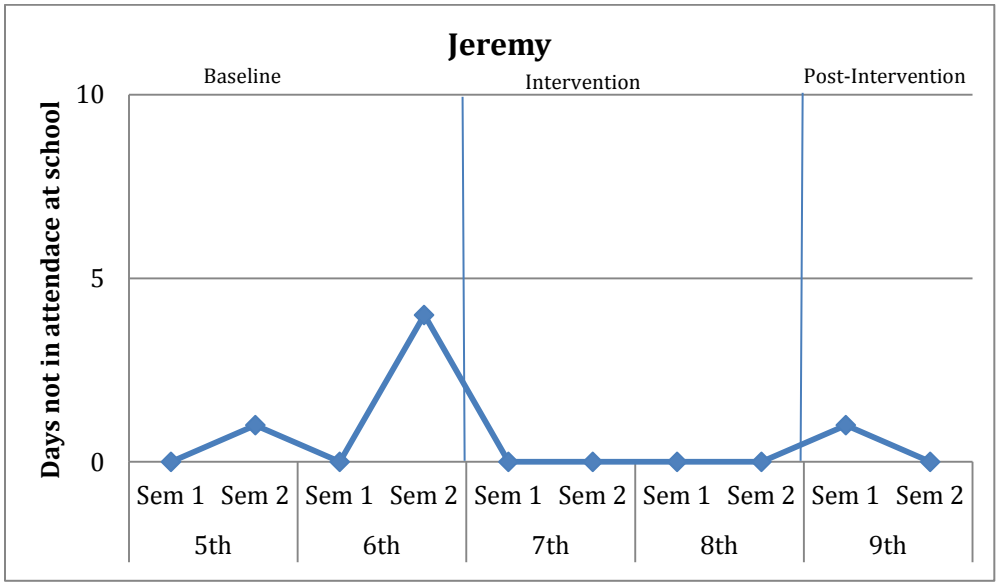
Jeremy
Baseline
Intervention
Post-Intervention
Days not in attendace at school
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5
0
Sem 1 Sem 2 Sem 1 Sem 2 Sem 1 Sem 2 Sem 1 Sem 2 Sem 1 Sem 2
5th
6th
7th
8th
9th

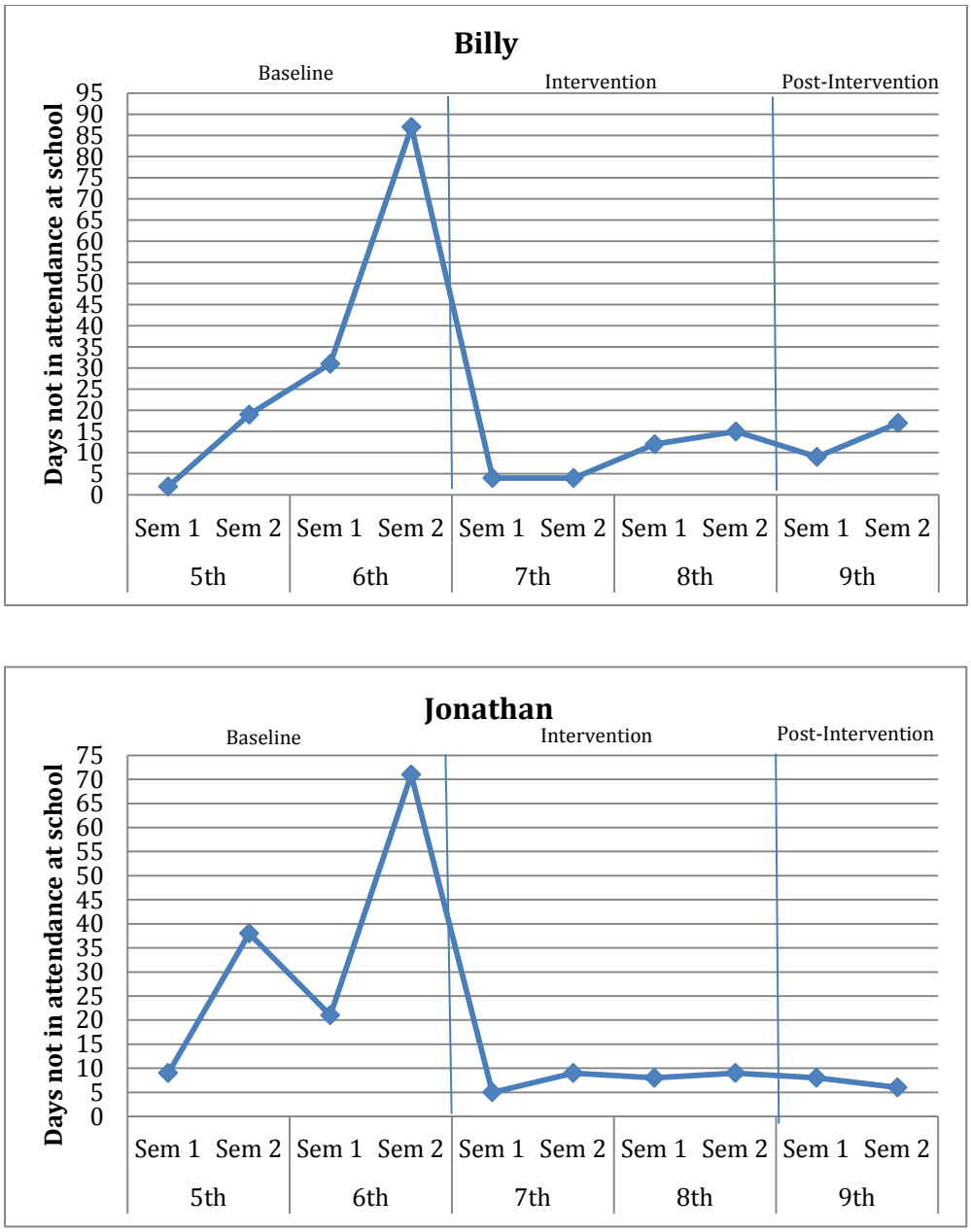


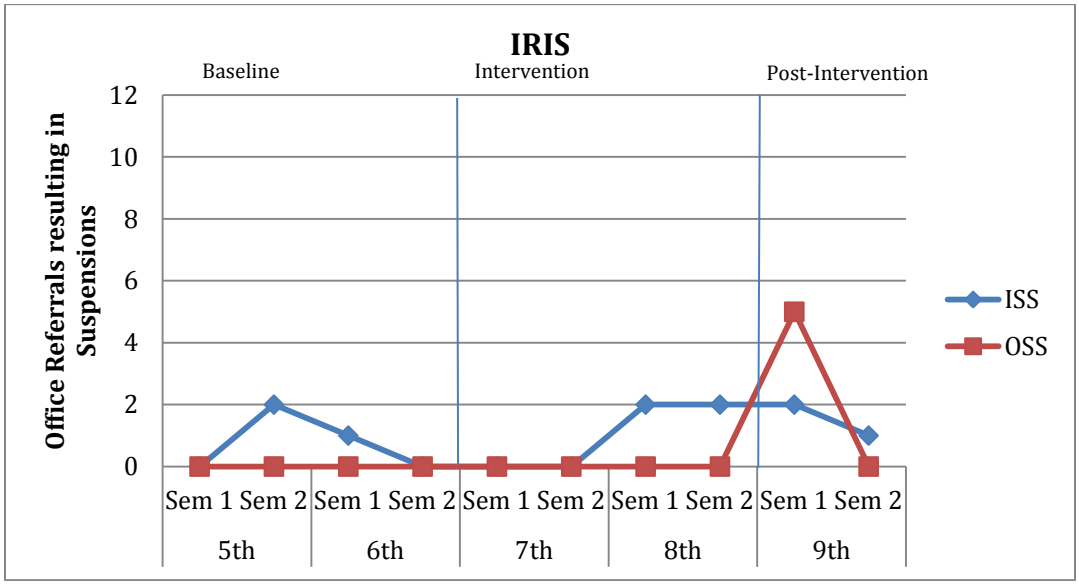
Figure 1. The days not in attendance at school are representative of full days absent at their typical school setting due to discipline, days attending a day treatment program, days hospitalized or days recorded absent with no disclosed reason. See Appendix H for breakdown of total number of days not in attendance for each student.

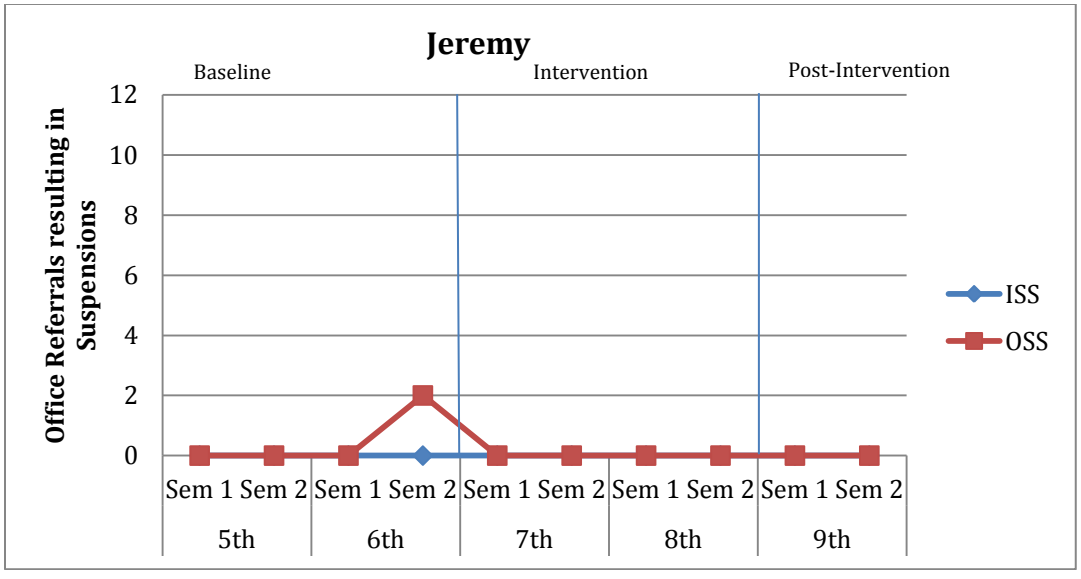
Gast's (2010) visual analysis of graphic data general guidelines for inspecting and interpreting line graphed research data were again utilized for the attendance analysis.

Trend or lines of progress or slope is analyzed for the steepness of the data path across time. Gast (2010) explained that trend can be described as decelerating, accelerating, or zero celerating. In the case of attendance; however, a shift in thinking must occur. Deceleration puts the student in school more and would be a positive and acceleration puts the student out of school more making it a negative. In looking at the participants' baseline years of fifth and sixth grade, all of them experienced an accelerating trend in number of days missed from school. The level of change from the semester before entering BRAIN and the first semester in BRAIN depicted no change in attendance for Iris and yet a significant drop for the other three. Jeremy's level in attendance was the least drop from 4 to 0, Billy dropped from 87 to 4, and Jonathan dropped from 71 to 5. Within the intervention of BRAIN, Iris, Billy, and Jonathan all experienced an acceleration of absences, while Jeremy had a zero celeration. The level change following BRAIN depicted a rise for Iris and Jeremy and a deceleration for Billy and Jonathan. The post-intervention ninth grade semesters brought about a deceleration for Iris, Jeremy, and Jonathan; while Billy experienced acceleration in his absences.

Office referrals. The data received by the researcher and charted in Appendix I were all referrals recorded for each of the participants from their fifth grade year through their ninth grade year. Some comments were made regarding background information, if available, on years prior to the targeted years. Figure 2 records the total number of referrals resulting in in-school or out-of-school suspension days for each participant. The number of referrals recorded in Figure 2 does not include the discipline referrals resulting in no discipline, conferences with the student and/or parent, or lunch detention. These lesser incidents did not result in the disruption of instructional time to the degree of an

entire school day; thus they were not included in the total number of referrals recorded in Figure 2. The in-school suspension still provides the student with assignments and services provided on their IEP. The out-of-school suspension does not provide the student with assignments, nor services on their IEP as all are five days or below.





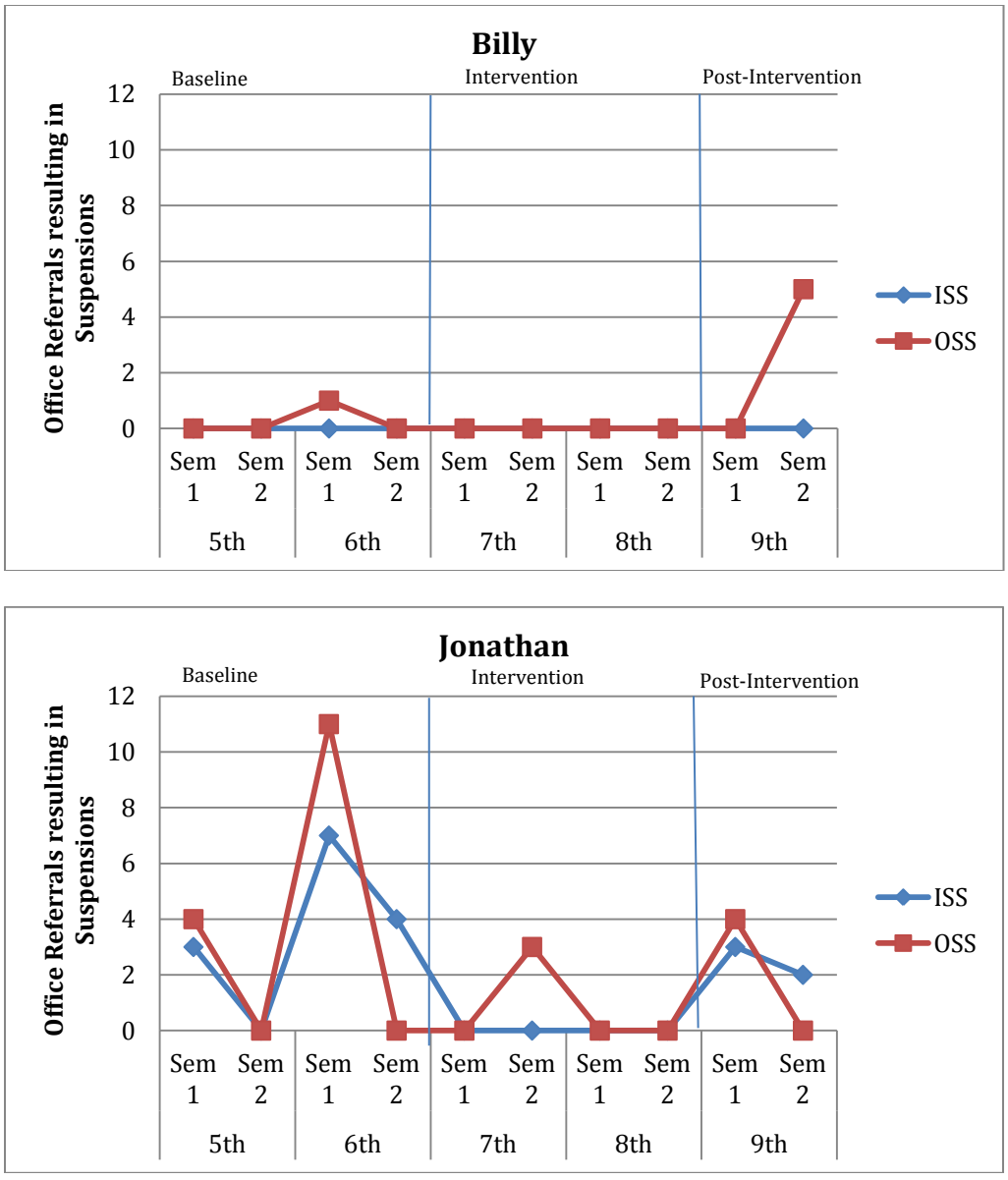


Figure 2. Only referrals resulting in in-school or out-of-school suspension days are recorded for the students on the graphs. The graphs are divided by semesters for their fifth grade through ninth grade years. Each participant has a separate graph.

As in previous graphical analysis, Gast's (2010) visual analysis for inspecting and interpreting line graphed research data were utilized for specifically the out-of-school suspension. Trend or lines of progress or slope is analyzed for the steepness of the data path across time for the same. Gast (2010) explained that trend can be described as

decelerating, accelerating, or zero celerating. Only one student, Iris, demonstrated a zero celeration of no out-of-school suspensions in the two years prior to coming into the BRAIN program. The other three participants (Jeremy, Billy, and Jonathan) experienced an acceleration of out-of-school suspensions during their fifth and sixth grade years. However, looking at the number of suspensions Billy and Jeremy experienced for their highest semester (2 and 1, respectively) neither of them would be considered alarming. This could be due to attendance in another setting and this will be covered in the discussion section. Since three of the students had no days of out-of-school suspensions coming into the semester prior to the BRAIN program, their level was demonstrated at zero celeration, as the first semester in BRAIN also demonstrated no days of suspension. Jeremy did demonstration a drop in level from two suspensions to zero coming into the BRAIN program. Within the intervention of the BRAIN program, no out-of-school suspensions were issued for any of the students except for three days for Jonathan during the second semester of the first year. Therefore, the other three (Iris, Jeremy, and Billy) demonstrated a zero celeration on trend within the BRAIN program for suspensions. In their transition out of BRAIN, Iris and Jonathan showed acceleration in the number of out-of-school suspensions; while Jeremy and Billy showed a zero celeration level at zero. In the two semesters following the BRAIN program during their ninth grade year, Iris and Jonathan demonstration a deceleration in out-of-school suspensions. Jeremy maintained a zero celeration trend at zero and Billy demonstrated acceleration after the first semester of out-of-school suspensions.

Incidents and log entries. The school district's student data management system is divided up into many different divisions, two of those being incidents and log entries.

In the early years of the school's implementation of the student data management system, the log entry division was utilized for all discipline entries, nursing visits, classroom disruptions, as well as principals and counselor notations. Beginning in school year 2014-15, the district began utilizing the division of the system called incidents to record only suspensions for state reporting purposes. Therefore, it was necessary during the collection of data for the researcher to request information from both incidents and log entry divisions of the student data management system on the students participating in BRAIN in order to collect all data. Because of the dual purpose of the log entry division, some overlap of data resulted in the suspension data reported in the previous section, as seen in Appendix I. When charting the data for reporting here, however, the suspension data was not included in Figure 3.

Participant	Type of Entry	5th		6th		7th		8th		9th	
		1st Sem	2nd Sem	1st Sem	2nd Sem	1st Sem	2nd Sem	1st Sem	2nd Sem	1st Sem	2nd Sem
Iris	Health visit, NOS	0	7	0	1	1	0	0	0	0	0
	Heath visit w symptoms	0	0	4	0	0	1	0	2	6	8
	Reported hungry	0	0	1	0	0	0	0	0	1	0
Jeremy	Health visit, NOS	3	2	6	4	0	0	1	0	0	0
	Heath visit w symptoms	2	1	1	0	1	0	0	1	1	0
	Reported hungry	0	0	0	0	0	0	0	0	0	0
	Injury	1	0	1	0	0	0	0	0	0	0
	Self-harm threat	1	0	1	0	0	0	0	0	0	0
	Behavior w no formal discipline	0	1	3	1	0	0	0	0	0	0
Billy	Health visit, NOS	0	0	6	0	1	1	2	0	5	2
	Heath visit w symptoms	0	0	0	0	0	0	0	4	5	4
	Reported hungry	0	0	0	0	0	0	0	0	1	
	Glucose monitoring	0	0	0	0	0	0	0	0	7	
	Injury	0	0	0	0	0	0	0	0	7	5
Jonathan	Health visit, NOS	0	0	0	0	0	0	2	0	1	0
	Heath visit w symptoms	0	0	1	0	0	0	0	0	0	1
	Reported hungry	0	0	0	0	0	0	0	0	0	0
	Injury	1	0	0	0	0	0	1	0	0	0
	Aggression w/ no formal discipline	34	0	0	0	0	0	0	0	2	0

Figure 3. Number of incidents represented the number of times each of the types of entries was recorded in the log entries division of the student data management system. Data are separated by semester collected. NOS stands for no other symptoms indicated in the log entry when coming to the health office. A complete recording of incidents with detail is available in Appendix I.

In the years prior to BRAIN, it was apparent from the numerical values provided in Figure 3 that Iris and Jeremy utilized the school health office frequently. While Iris was on a decelerating trend during her years prior to BRAIN (going from seven visits to one visit) and only four total visits the two years of BRAIN, in the post-intervention year she saw a definite acceleration of nursing visits (six and eight respectively for semesters one and two).The eight visits were also recorded during the second semester in which she only attended until February before being assigned a homebound education placement. The other student visiting the health office frequently during his baseline years, Jeremy, actually had an accelerating trend during those years. Jeremy also had two incidents of

self-harm threats during the two years prior to BRAIN. During his two years in BRAIN, Jeremy totaled three health visits with no reports of self harm threats. The only baseline semester Billy demonstrated any health office visits was his first semester of sixth grade. During this semester, he had six visits to the health office with reports of not feeling well with no other symptoms apparent. That was a semester he attended most in the typical school setting before attending an out-of-district treatment center at the beginning of December and not returning for the remainder of his six grade year. During the two years in BRAIN, Billy had a total of eight health office visits. He demonstrated an accelerating trend of visits toward the last semester within the intervention. It was noted by the researcher that his visits took on a more purposeful intent, as the second semester of his eighth grade year he had a rash on his arm for one visit and the other three times he reported to not feeling well with symptoms confirmed by the nurse. Following the intervention, Billy demonstrated a spiked acceleration in health office visits during his ninth grade year. Billy was recorded as having 25 visits his first semester and 11 his second semester. Some of these visits could be attributed to him being a newly diagnosed diabetic. Jonathan's health office visits totaled two during the two years prior to BRAIN, three during his years in the intervention, and two during the post-intervention year. Jonathan's health office visits were not the notable occurrences within the incidents, but rather the notations of his aggression not resulting in formal discipline. During Jonathan's fifth grade year, he had 34 incidents of aggression towards students with a refusal to work, aggression towards himself with a refusal to work, or inappropriate gestures. These incidents were recorded as having no formal discipline. Two more incidents, not resulting

in formal discipline, were recorded post-intervention. One of these incidents giving no detail and the other saying he was making fun of another student.

Academic Results

In an effort to understand and describe the impact of the BRAIN program has on the overall quality of the educational experience for the participants and determining if the BRAIN program was associated with measurable changes on academic indicators such as state mandated test indicators, the researcher gathered data in the following areas: Oklahoma CRT reading scores, Oklahoma CRT math scores and grade point averages. The results will be notated in three periods: pre-intervention or baseline, intervention period, and post-intervention. Each of the three periods is broken into semester increments. A visual analysis will be discussed for each variable.

Oklahoma CRT reading. Each student's Oklahoma CRT reading score was given in numerical value (scaled score), as well as what the state refers to as performance level indicators as determined on the scale set by the State Department. The performance level indicators are unsatisfactory, limited knowledge, proficient, and advanced. The performance level indicates the student can perform the majority of skills described for that level and the skills described for the level(s) below. The student may also be capable of some of the skills at the level above, but not enough to have reached the higher level. The performance level indicator for each year of the CRT reading assessment are given for all students in Figure 4. Two of the students are missing their sixth grade scores due to non-enrollment within the school district during the time of assessment.

	Prior to Intervention		During Intervention	
Participants	5th	6th	7th	8th
Iris	Unsatisfactory	Limited Knowledge	Limited Knowledge	Limited Knowledge
Jeremy	Unsatisfactory	Limited Knowledge	Proficient	Limited Knowledge
Billy	Unsatisfactory	*unavailable	Unsatisfactory	Unsatisfactory
Jonathan	Unsatisfactory	*unavailable	Unsatisfactory	Unsatisfactory

Figure 4. Performance level indicators on the Oklahoma Criterion Reference Reading Test for Grades fifth through eighth for each participant.

It must be noted that during the school year 2016-17 (students' eighth grade year), the State Department changed the state mandated assessments causing the scaled scores to be calibrated with a different scale than in previous years. This resulted in scaled scores that cannot be compared numerically to any previous year. However, the performance level indicators are comparable since they indicate the student can perform the majority of skills described for the indicated level and the level below. All of the students' performance level descriptors remained the same during the intervention year, except for Jeremy. Jeremy's indicator went from Proficient his seventh grade year, during the first year of the BRAIN intervention to limited knowledge during his eighth grade year or the second year of the BRAIN intervention.

Oklahoma CRT math. Each student's Oklahoma CRT math score was also given in numerical value (scaled score), as well as what the state refers to as performance level descriptors as determined on the scale set by the State Department. The performance level indicators are unsatisfactory, limited knowledge, proficient, and advanced. The performance level indicates the student can perform the majority of skills described for that level and the skills described for the level(s) below. The student may also be capable of some of the skills at the level above, but not enough to have reached the higher level. The performance level indicator for each year of the CRT reading assessment are given for all students in Figure 5. Two of the students are missing math

indicators during their sixth grade year due to non-enrollment within the school district during the time of assessment.

	Prior to Intervention		During Intervention	
Participants	5th	6th	7th	8th
Iris	Unsatisfactory	Unsatisfactory	Unsatisfactory	Unsatisfactory
Jeremy	Limited Knowledge	Unsatisfactory	Proficient	Limited Knowledge
Billy	Limited Knowledge	*unavailable	Unsatisfactory	Unsatisfactory
Jonathan	Unsatisfactory	*unavailable	Proficient	Unsatisfactory

Figure 5. Performance level indicators on the Oklahoma Criterion Reference Math Test for Grades fifth through eighth for each participant.

It again, must be noted that during the school year 2016-17 (students' eighth grade year), the State Department changed the state mandated test assessments causing the scores to be calibrated with a different scaled score than in previous years. This resulted in scaled scores that cannot be compared numerically to any previous year. However, the performance level indicators are comparable since they indicate the student can perform the majority of skills described for the indicated level and the level below.

Two of the students' performance level descriptors remained the same during the intervention year, while two of the students changed. Jeremy moved from proficient his seventh grade year (first year of the BRAIN intervention) to limited knowledge his eighth grade year (second year of the BRAIN intervention). Jonathan moved from proficient his seventh grade year (first year of the BRAIN intervention) to unsatisfactory his eighth grade year (second year of the BRAIN intervention).

Grade point averages. The grades presented to the researcher were all letter grades received by the four students each semester from their fifth grade year to their ninth grade year. These grades included core as well as elective courses. To enhance comparability, only English, science, mathematics, and history grades at each grade level

were used to calculate GPA. GPA was calculated and collected on a semester basis. Appendix K shows the collection of data for GPA. A graphical representation of the students' GPA is presented in Figure 6.

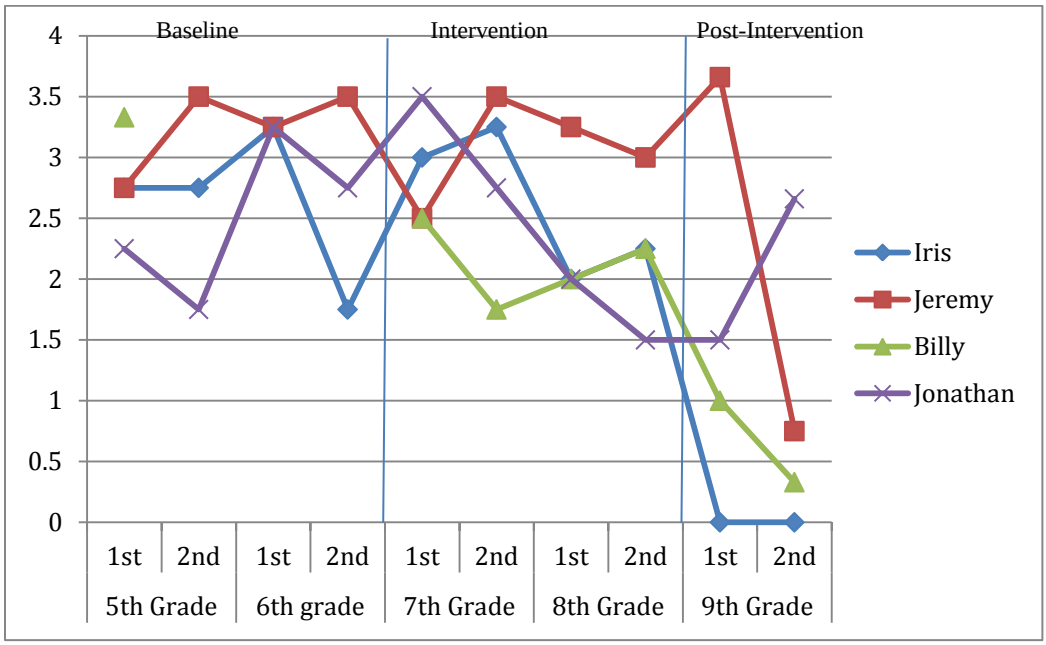


Figure 6. Grade point average (GPA) for all students were figured on core subjects only within each given semester of each grade. The core subjects utilized were math, English, science, and social studies. The scale used to figure each GPA was A=4, B=3, C=2, D=1, F=0 and an average taken of the total.

Gast's (2010) visual analysis of graphic data general guidelines for inspecting and interpreting line graphed research data were again utilized for the GPA analysis. Trend or lines of progress or slope is analyzed for the steepness of the data path across time. Gast (2010) explained that trend can be described as decelerating, accelerating, or zero celerating. Prior to participating in the BRAIN program, Iris demonstrated a decelerating trend with her GPA, whereas Jeremy and Jonathan both had accelerating trends during their fifth and sixth grade years. Due to Billy's lack of stability in a facility giving

educational grades, only one semester yielded a grade point average in core subjects, thus not giving trend data.

During the intervention of BRAIN semesters, two students demonstrated a decelerating trend in GPA (Iris and Jonathan). This downward trend in GPA during the intervention was despite both of them having an increase in GPA the first semester of entering the BRAIN program. Iris increased from a 1.75 to a 3.0 and Jonathan from a 2.75 to 3.5. Jeremy and Billy's GPA during the intervention both yielded an accelerating trend line. Both of these boys dropped the level of their last recorded baseline GPA before coming into the BRAIN program.

Post-intervention demonstrated a drop in level of GPA for the first semester out of the BRAIN program for Iris and Billy, an increase for Jeremy, and stabilization for Jonathan. The trend for the students following BRAIN in the area of GPA has been Iris with zero celeration, Jeremy and Billy with deceleration, and Jonathan with acceleration.

Discussion

This research study was conducted to examine the impact the BRAIN program had on the participants within the program on behavioral indicators (e.g. school absences and number of discipline referrals resulting in suspension days, in and out of school) and academic indicators (e.g. testing level on state mandated testing and grade point averages). It follows the Martella et al. (2013) summative outcome evaluation model with a concentration on the level of determining whether program participants have improved. The expectation was for positive improvements in the areas of attendance in the typical school setting, low to no referrals resulting in suspensions, an increase in test scores and grade point average in core academic subjects. This study also looked at one year beyond

the implementation years to examine if participants were able to generalize their behavioral and academic success beyond the presence of the intervention itself. This section provides a summary of the findings for each participant, as well as the researcher's generalization of the results. Limitations are discussed pertaining to the study, as well as implications for moving forward with the BRAIN program and other Tier 3 behavior programs. Recommendations for future studies related to the BRAIN or Tier 3 behavior program will also be discussed.

The BRAIN program was created to teach students how to control their own behavior through goal setting and self-regulation aided by a leveled privilege system, creating a school-wide proactive environment to prevent inappropriate student behavior, and regaining parent trust. The expectation was for positive improvements in behavioral and academic indicators for students who had a history of anti-social behaviors, suspensions and/or time away from school.

Iris

Iris was the only female participant for the BRAIN intervention program the first year. Previous school records indicate that Iris had several DHS home placements. She was placed on an IEP under the category of Speech and Language Impairment during her first grade year with an outside diagnosis of ADHD and Asperger Syndrome. This category was later changed during her fifth grade year to Emotional Disturbance. The IEP created during her fifth grade year contained a BIP to address identified target behaviors.

Her participation in the BRAIN program was based on her need for a Tier 3 behavior program. In the years prior to the formal documentation collected for this study, notes indicated incidents of stealing, defacing property and violence towards other

students. These behaviors continue to be her nemesis, as these are the same she was suspended for in her ninth grade year. The behaviors noted in her fifth grade paperwork (inappropriate social behavior, stealing, and defiance/non-compliance) were the actions that placed her at an in-district day treatment program two separate occasions during her fifth and sixth grade years. The day treatment program is a half day educational and half day therapeutic counseling facility; therefore students do not receive a full day of education while there. During these two pre-intervention years, Iris's CRT reading scores improved enough to move her from one performance level indicator to another (unsatisfactory to limited knowledge); however her CRT math scores declined from 556 to 424, staying within the unsatisfactory performance level indicator range. Her grades also showed a declining trend during her fifth and sixth grade years, with the lowest point being the second semester of her sixth grade year. She did end that year at the in-district day treatment center. Overall, during the pre-intervention years, formal referrals were not an issue. She had no out-of-school suspension and only two in-school suspensions during those years. Again, the low number of suspensions could be a result of her attendance in the day treatment center. These treatment centers do not typically suspend students. Incident logs showed one semester of seven visits to the nurse her fifth grade year with no apparent symptoms. That semester she attended all semester with no in-patient breaks in service. The only other increase in her nurse visits noted were during her ninth grade year, following the BRAIN intervention.

Iris's participation years in the BRAIN program brought about a mixed level of successes. Looking at the areas of success themed from the taped videos (behavioral and academic) and comparing them to Iris's experience during her first year of BRAIN, she

had no increase in her absences from the semester prior to coming into the intervention and no in-school or out-of –school suspensions. Her CRT scores on both reading and math indicated no performance level change; however she had an increase in her GPA. During the second year of BRAIN, her GPA dropped 1.0 full average point, her absences increased both of her eighth grade semesters to as many as 14 days the second semester, and she had two in-school suspensions both semesters for disruptive behavior and violation of school rules. Her performance level indicators on the CRT math and reading remained the same as the previous year. Reading was limited knowledge and math was unsatisfactory. This was the year the state changed the standards; thus the numeric scores were not comparable with the previous years. The overall success for Iris was that she had spent two full academic years with no removals for day treatment programs or out-of-school suspension days.

Another aspect of this research was to determine if the participants were able to generalize successes beyond the presence of the intervention years. Data were collected for the year following the BRAIN intervention, or the ninth grade year for Iris. Behaviorally, Iris again spent two days in in-school suspension her first semester out of the BRAIN program and also had five days of out-of-school suspension that semester for theft and physical threat to another student. Could it be the asperger syndrome perseveration tendency targeted on stealing that keeps that behavior repetitive or perhaps the early trauma in her life causing an underlying need for this behavior? Academically, Iris did not pass any of her classes either semester of her ninth grade year, resulting in a GPA of 0.0 both semesters. Another observation within the incident logs was an increase in visits to the nurse's office for health related visits with symptoms, from an average of

1 per semester during BRAIN to an average of 7.5 during her ninth grade semesters. Second semester after twenty days of school, missing 6 of those due to absences and 1 due to another suspension for making a "kill list", Iris had a change of placement to virtual education on a homebound setting. Her IEP indicated all core classes on-line with a teacher available 3 days a week for 1.5 hours each day. She continued on this placement for the remainder of her ninth grade year. Iris was unable to maintain control of her behavior, nor continue academic success whether enrolled within the typical school setting or while enrolled in a virtual homebound setting. It is the opinion of the researcher that this student was unable to generalize any academic or behavioral success beyond the BRAIN program.

Jeremy

Jeremy's uniqueness among the participants is that he is a twin and an American Indian. Both Jeremy and his mother volunteered to participate in the district filming of a taped video at the end of the first year of participation of the BRAIN program. Prior to beginning school at three years old, Jeremy received speech therapy services. Therefore, at age three he began services with the school district on an IEP under the category of Speech and Language Impairment. This category was later changed during his third grade year to Autism with an outside diagnosis of Asperger Disorder. Iris and Jeremy shared this diagnosis, but had different categories as defined under the U.S. Department of Education's Individuals with Disabilities Education Act. A BIP was added to his IEP beginning in fifth grade to address emotional regulation and non-compliance/defiance.

Jeremy's participation in the BRAIN program was based on his need for a Tier 3 behavior program. According to Jeremy's mom on the taped interview in the spring of 2016,

> We feel really, really lucky, that (student's name) has landed here where this program is because this is where he is suppose to be for seventh grade. If this were to happen at another school, we wouldn't be aware of it, we wouldn't be exposed to it, we wouldn't benefit from it and I just want it to go on.

When examining Jeremy's specific incidents that may have placed him in need of BRAIN, there were two incidents of self-harm threats during his fifth and sixth grade years and seven incidents of disruptive behavior recorded as having no discipline recorded. These incidents ranged from refusal to comply, threatening others, and throwing equipment to hitting students and adults. He only had two days of out-of-school suspension for assault to a student during his sixth grade year. During the two pre-intervention years, Jeremy's CRT reading scores improved enough to move him from one performance level indicator to another (unsatisfactory to limited knowledge); however his CRT math scores declined from 666 to 630, moving him from limited knowledge to unsatisfactory on the performance level indicator. These scores were consistent with Iris's as well. Jeremy's grades showed an accelerating trend during his fifth and sixth grade years, with the highest average being 3.5 both of the second semesters. Incident logs showed an average of six visits to the health office with the majority of these with no symptoms.

Jeremy's participation years in the BRAIN program brought about progress in all of the themed areas of successes mentioned in the district taped video. Behaviorally,

Jeremy had no self-harm threats, no in-school or out-of-school suspensions, and no days absent. Jeremy was quoted in the district taped video to describe what you think of the BRAIN program, "It has helped me a lot from not getting into trouble" (Taped interview, spring 2016). Then later to clarify what this class teaches you, Jeremy responded, "Take a deep breath or ask for a break" (Taped interview, spring 2016). Academically, Jeremy experienced an increase in his CRT math and reading scores, both moving to the proficient performance level indicators. Despite an initial dip in his GPA the first semester, Jeremy's overall GPA demonstrated acceleration over the two years of BRAIN. Another themed area of success mentioned in the district taped video was emotional success. Data were not collected in this area; however, there were comments mentioned by Jeremy's mother that the researcher feels appropriate under this theme. Jeremy's mother made various comments such as "…he is a calmer kid because of it. He is a lot happier to go to school. Even when he knows that he's had a setback…he still pulls himself together and off he goes" (Parent, taped interview, spring, 2016). When discussing the benefits of the program, Jeremy's mother was explaining the opportunity her son had when other students were having meltdowns or behavior problems, similar to ones he was inclined to have had in the past,

> He could listen in and learn and observe. He's not the one feeling defensive and trying to make a choice to get out of this uncomfortable moment. He is watching it develop for somebody else and to have him exposed to that over and over through many, many weeks, in so many different situations with so many different personalities…He is able to say 'ok, so here is what I would do, if that were happening to me'. (Parent, taped interview, spring 2016)

While the BRAIN program does not ask students to peer record targeted behavior as in Lower et al. (2016) research study, the comments were similar from participants about enjoying helping other students with their behavior.

The last aspect was to determine if Jeremy was able to generalize successes beyond the presence of the intervention years. Data was collected for the year following the BRAIN intervention, or the ninth grade year for Jeremy. Behaviorally, Jeremy continued with his trend of no in-school or out-of-school suspensions and had only one absence at the very beginning of his ninth grade year. The incident log also did not document any office referrals resulting in any incidents with no discipline, as were documented during his fifth and sixth grade years. Academically his GPA continued to accelerate on an upward trend from his years in BRAIN, with the highest being his second semester of this ninth grade year at 3.75. He also had only one logged visit to the health office his ninth grade year for a health concern with symptoms. Jeremy's behavioral and academic data indicate successes during BRAIN, as well as maintaining beyond the intervention program.

Billy

Billy is a Hispanic male that participated with the BRAIN program. Billy's early elementary years reveal he entered the school district as a four year old pre-kindergarten student and attended regularly up to his first grade year. His first and second grade years included gaps in attendance due to hospital stays and day treatment facility attendance. The school district does not list a school attendance for the third and fourth grade years. Billy was identified under the category of Developmentally Delayed with a suspected category of Emotionally Disturbed and Other Health Impaired at the age of seven and

served through an IEP. A BIP was a part of his IEP to address aggression and inappropriate language. Iris and Billy shared the same category as defined under the U.S. Department of Education's Individuals with Disabilities Education Act. Health information indicated Billy started school with diagnosis of asthma, ADHD, and GERD. Later years the diagnosis of bipolar (fifth grade), heart condition (seventh grade), and diabetes, as well as bowel concerns (eighth grade) were added.

Billy's participation in the BRAIN program was based on his need for a Tier 3 behavior program that would address his behaviors, as well as keep Billy in school full-time to address academics on a consistent basis. During his fifth and sixth grade school years, he missed an average of 35 days per semester attending hospitals or day treatment programs. The longest absence of these two years was during the second semester of his sixth grade year when he was out 87 days. During these two school years, only one recorded GPA is available and one recorded CRT in math and reading. Incident logs showed one semester of six visits to the nurse his sixth grade year with no apparent symptoms. Only one formal office referral was recorded during those years for leaving class and refusal to comply. This low number could be a result of low attendance as a whole.

Billy's participation years in the BRAIN program brought about a mixed level of successes, much like Iris. Then, also much like Iris, looking at the first year of BRAIN, he had a steady attendance of only missing four days and no in-school or out-of school suspensions. His CRT reading presented a consistent indicator level, while his math dropped a performance indicator level from limited knowledge to unsatisfactory. His GPA was a 2.25 the first semester of BRAIN, which was a drop from the last recorded

GPA (first semester of the fifth grade year). Considering the amount of school Billy missed the semester prior, this might seem understandable. The second year of BRAIN, the GPA was on an accelerated trend, but the absences increased to 5 and 14 respectively. Most of these were one day incidents due to undisclosed reasons. Billy continued to have no out-of-school or in-school suspensions during BRAIN. He did participate in the CRT math and reading, however this is the year the state changed the standards; thus the scaled scores were not comparable with the previous years. Both CRT math and reading did stay at the same unsatisfactory performance level as the previous years. The overall success for Billy (and Iris) was that they had spent two full academic years with no removals for day treatment programs or out-of-school suspension days. Billy also received school records for GPA in core academic classes, which were steadily increasing, and scores for CRT math and reading.

The last aspect was to determine if Billy was able to generalize any successes beyond the presence of the intervention years with BRAIN into his ninth grade year. Behaviorally, during the second semester he received a five day out-of-school suspension due to battery and assault towards another student. Academically, his GPA fell from a 2.25 to a 1.0 and .33 respectively in semesters following BRAIN into his ninth grade year. He has maintained attending school with absences averaging 13 a semester with most absences for undisclosed reasons on a one day basis. One major change noted were his visits to the nurse during his ninth grade year, jumping to an average of 18 visits per semester. His new diagnosis of diabetes and bowel concerns could account for this unusually high number of visits. While Billy is maintaining success behaviorally in being

present at school and having a low number of official referrals, the success in academics have not proven to be maintained beyond the BRAIN program.

Jonathan

Jonathan is the third male participant for the BRAIN intervention program the first year. He began with this school district in pre-kindergarten and was shortly thereafter placed on an informal behavior plan for disruptive behavior that lasted through his first grade year. He was place on an IEP during his second grade year under the category of Developmentally Delayed with a suspected category of Other Health Impairment due to a reported medical diagnosis of ADHD, heart defect, and manic depression. This category was later changed during his sixth grade year to Emotionally Disturbed. This category was the same as Billy and Iris.

His participation in the BRAIN program was suggested to the parents to teach him anger management, self-regulation and coping skills as a part of a Tier 3 behavior intervention program. In the year prior to the formal documentation collection for this study, behavioral incidents included violence with students, threatening students, disrespect towards adults, angry outbursts, a report of parental abuse to the student, and incidents of violence towards adults. These were not logged with formal out-of-school or in-school suspensions and took place at the same school the mother was an educator. These behaviors continued into the fifth grade year. During the first semester of his fifth grade year, he experienced 34 behavioral incidents which did not result in formal in-school suspensions. Jonathan did have an accelerating trend of in-school and out-of-school suspensions during his fifth and sixth grade years. His attendance during those years also represented numerous days out due to out-of-district day treatment facilities

and hospital stays. The longest absence was 67 days the second semester of his sixth grade year to attend a day treatment facility out-of-district. Due to this last stay, no CRT reading or math scores were made available for the sixth grade year. Despite the time away from the traditional school setting, Jonathan's grades showed an accelerating trend during these pre-intervention years.

During Jonathan's participation years in the BRAIN program, he showed a drop in absences to eight per semester and an initial drop in in-school and out-of –school suspensions. Despite not having a sixth grade CRT in reading or math to compare with, Jonathan increased his performance level indicator from unsatisfactory to proficient in math and maintained at the unsatisfactory performance indicator level in reading despite raising his score from 559 to 658. The initial increase of GPA from a 2.75 to 3.5 steadily decelerated during the BRAIN semesters to the last semester of the eighth grade year. Behaviorally during the intervention semesters, Jonathan had only one semester with three days of out-of-school suspension for attacking a student. As with Billy and Iris, the success for Jonathan was two full academic years of education within the traditional school setting with Jonathan showing an increase in reading and math skills, as well as, the ability to self-regulate behavior enough to keep his referrals to a minimum.

The last aspect was to determine if Jonathan was able to generalize any successes beyond the presence of the intervention years with BRAIN into his ninth grade year. Behaviorally, Jonathan spiked at the beginning of his ninth grade year with four out-of-school suspension and three in-school suspension days for making threats and obscene language, respectively. The second semester this dropped to two days of in-school suspension for an inappropriate racial joke. Jonathan had a deceleration in overall

attendance during the ninth grade year with an average of seven days each semester (including the suspension days). Academically, Jonathan's GPA was level with his last semester of BRAIN of his eighth grade year and demonstrated an accelerated trend from there. Jonathan has shown that he is capable of maintaining control of his behavior, attending school regularly, and increasing his grades in the core academic classes. Therefore, it is the opinion of the researcher that this student is able to generalize behavioral and academic successes beyond the BRAIN intervention.

Conclusion

The expectation for the BRAIN program was for positive improvements in social, behavioral, and academic progress for students who had a history of anti-social behaviors, suspensions and/or time away from school. The authors of the program anticipated seeing evidence of these expectations by regular attendance in a typical school setting, low to no behavior referrals, and academic progress in core subject areas. Looking therefore at all four participants during their BRAIN intervention years and the behavioral indicator information collected within the study, it is apparent that all achieved positive changes, as compared to previous years, in both attendance in the typical school setting and number of referrals. Each participant attended the BRAIN program with no day-treatment or hospital setting interruptions. The number of referrals was lower during the BRAIN intervention years as compared to the two years prior, in most cases dropping to zero. Academically, when looking at improvement to each participant's CRT math and reading performance and comparing pre-intervention level to the level achieved during the BRAIN program, all four participants maintained or improved their performance level indicator levels. The only indicator during BRAIN that

did not show a positive change during the intervention was GPA for two of the four participants, Iris and Jonathan. Both Iris and Jonathan have a category of Emotionally Disturbed and a medical diagnosis of ADHD; however, so does Billy. This suggests that the category and diagnosis did not necessarily contribute to the decrease in GPA for Iris and Jonathan. Both Iris and Jonathan also spent pre-intervention time in hospital and day-treatment programs; however, so did Billy. Again, this suggests that time spent away in a non-traditional educational setting did not necessarily influence a lower academic performance when re-entering a typical school setting. No other patterns in the data suggest why only Iris and Jonathan showed a deceleration in GPA during the BRAIN intervention years.

The BRAIN program provided a daily, consistent support system for these students. Throughout both years, the students had the same BRAIN teacher meeting with them on a daily basis during their first hour to debrief the day before, even if the students had leveled out to the highest level and were in all general education classes. The students had the accommodation of a de-escalation room available to them, the "blue room", to utilize if they were unable to maintain control in the classroom. All of their teachers in the general education setting had a better understanding of de-escalation techniques in order to assist them behaviorally and their parents had a daily, ongoing communication with the school district. Despite their disability category, medical diagnosis, or past history of stays in day treatment or hospital settings, the BRAIN program kept them attending school on a regular basis, lowered the number of referrals, and gave them the ability to gain more skills toward math and reading objectives that

assisted them in maintaining or achieving a higher performance indicator level on the state mandated assessments.

During the post-intervention year, the ninth grade year for the participants, they moved from the middle school campus to the high school and were no longer participants in the BRAIN program. Looking at the behavioral indicator information, namely attendance, three of the four participants continued on a positive trend in attending the typical school on a regular basis. Iris was not able to continue on a positive trend after 30 days into the second semester of her ninth grade year before a change of placement was determined necessary by the IEP team. On the other behavioral indicator, the only student to maintain a positive trend on the number of referrals was Jeremy. He is also the only student that pre-intervention had no day-treatment or hospital stays and the only one that has a category of Autism. Perhaps with Jeremy, once a routine was established with behavior, he was able to continue a pattern of consistency. The other three participants either had an increase level of suspensions coming out of BRAIN or acceleration in the semesters of their ninth grade year of suspensions. Iris and Jonathan had an increase in level of suspensions coming out of BRAIN and Billy maintained until the second semester before receiving his first suspension. All three of the students receiving suspensions during their ninth grade year have a category of Emotionally Disturbed, a medical diagnosis of Attention Deficit Hyperactive Disorder, and all have a BIP on their IEPs.

Academically, the only comparison was GPA in core subject areas during the post-intervention year. Iris and Billy both took a drop in level coming into the ninth grade year and continued a deceleration in GPA, with Iris not receiving credit for any

core subjects and Billy only receiving credit for one core class. Jeremy and Jonathan both have accelerated levels in GPA during their ninth grade year. Since all students maintained or raised their CRT performance level indicators in math and reading during the intervention years, no specific indicators point to why Jeremy and Jonathan achieved academically over Billy and Iris. Iris did demonstrate a deceleration in GPA during the intervention years; however so did Jonathan. This drop does not coincide with the same students who decelerated during their ninth grade years.

The students' physical move to the high school not only caused a change in environment, but support personnel as well. Each student received a new case manager in charge of their IEP paperwork, a new set of classroom teachers, and new administrators. The students also did not have the support of the de-escalation room. A comment made by a parent in the taped interviews during the spring of 2016 is interesting to note:

> …I just want it to go on, in maybe different shades as the kids mature and live through, um, high school. It wouldn't have to be the same as it is right now, for an 11th grader, but um, I just wish it could continue.

The researcher believes the parent was asking for something that the school district should have followed through on for the success of the students. Only one of the four students was able to maintain behavioral and academic success in all measured areas beyond the presence of the intervention (Chafouleas et al., 2012). Therefore, if the BRAIN program is to be successful in both behavior and academic areas beyond the actual intervention years, the school system must implement some similar carryover measures beyond the program.

Implications

As stressed by Martella et al. (2013), the purpose of collecting and analyzing data on the effectiveness of programs is to make decisions. There are two notable implications moving forward from this program evaluation. One of the implications is a few suggested changes to the structure within the BRAIN program. The other notable implication is an increase in assistance to students, during the post-intervention period. This assistance would encourage the generalization of skills taught throughout the BRAIN program continue to be implemented in the students' lives. The decisions being considered should be looked at for the participants in the research study, students currently enrolled in the BRAIN program, and for those districts considering other intervention behavior programs for students at the Tier 3 behavior level.

The first suggestion within the BRAIN program would be to add a formal referral checklist for students being considered for the program. The BRAIN program utilized only the school district's Tiered Intervention Flowchart (Appendix A). A more comprehensive checklist would document data leading a student through the tiers implemented by the school district. Documented data (i.e. attendance records, discipline referrals, behavior support plans, copies of IEP and/or Section 504 plans) would give vital information for the district team to consider making informed decisions on the likelihood of success for students recommended for the BRAIN program. The second suggestion for the BRAIN program would be a fidelity checklist for administrators consisting of a checklist and rubric to check for consistency within the BRAIN elements. McIntosh, Bennett, and Price (2011), as well as Horner et al. (2005), mention the ongoing need for evaluative tools which would allow school personnel to determine if a program

is being implemented with fidelity during implementation. These tools need to provide reliable measures and present frequent, comprehensible feedback. The checklist would include all areas of the program a) environment, b) intervention components, c) data collection, d) social/emotional development, and e) communication. The third and final suggestion and another potentially valuable evaluative tool would be a yearly survey. This tool would provide meaningful feedback on the program from a variety of stakeholders. It could be completed by students, educators, and parents who participated on a yearly basis in the BRAIN program. A parent survey has been sent out since the inception of the program with no response.

The most striking result of the research study was the inability for most of the participants to generalize and maintain the BRAIN academic objectives beyond the actual participation in the program. Many Tier 3 intervention studies did not even mention the concept of retention of objectives beyond the intervention (Campbell & Anderson, 2008; Johnson et al., 2013; Simonsen, et al., 2010). Some research studies like Simonsen & Sugai (2013) and Iovannone (2009) did not make it a part of their research, but mentioned it in the limitations as a sustainability issue that needed to be addressed. In the current study, while it is not feasible for the same support personnel the students had within the BRAIN program to follow them through their high school years, the level of support could be replicated within their new environment. Also, while trauma was not a focus of this research study, a support element discussed by Perry and Szalavitz (2017) indicates "Relationships help buffer present stressors…" (p. 338). Stressed in the literature is the need for an individual time to discuss progress with students on their individual goals and provide desired reinforcement (Campbell & Anderson, 2018;

Iovannone et al., 2009; Johnson et al., 2013). One element of support that could easily continue are first hour meetings with one support staff person who knows the students and the BRAIN curriculum presented to help reiterate what they have learned from previous years. Another possible element of support post-intervention would be for all of the staff at the new location to take similar de-escalation training in order to emphasize both the type of program these students have been involved in as well as what to expect moving forward. A more student-specific suggestion is an implementation of a meeting prior to their ninth grade year with the intention of (a) discussing weaknesses and behaviors from previous years, (b) going over specific goals each student has been working on, and (c) developing goals for students to achieve in the coming year with all stakeholders involved in the new environment.

Limitations

The current research was based on a single instrument case study requiring rich, multiple sources of information to draw from to triangulate data (Baxter & Jack, 2008; Stake, 1995). Several limitations are noteworthy regarding this research study. The first limitation was the small number (n=4) of participants within the BRAIN program during the first year of its inception. Another limitation was that all of the data collected for this study were based on extant information already present within the school district's data management systems. Therefore, all information collected for this study was historical in nature and the researcher could not manipulate the data in any way. A representative of this was the questions posed to the interviewees, which were already determined ahead of time and could not be expanded upon by the researcher as suggested by Creswell (2007) to obtain deeper, more thorough information. Additionally, not all the students, or

educators involved in the BRAIN program participated in the interviews. The last limitation noted was the timeliness of the research study. If this study could have taken place while the participants were involved in the BRAIN program and data taken at that time, changes could have been made to the program as these students were involved.

These limitations did not suppress the numerous insights gleaned from this study. The interviews provided raw, uncut footage of a representative from each stakeholder class being free to share any information they wanted to in regards to the BRAIN program they had experienced. In addition to the behavioral and academic areas collected, emotional aspects were also discussed. Academic data were collected from CRT scores, both math and reading, and GPA. Behavioral data provided attendance and office referrals. Additional data were collected from special education paperwork and incident and log entries within the district management systems. Despite the limitations, the researcher felt the representation of the sources of information given through the avenues of interviews, academic, and behavioral aspects provided an in-depth picture of the case elements (Creswell, 2007).

Future Studies

While research has provided evidence that school-based programs addressing student behavior need to focus on teaching appropriate replacement behavior and social/life skills, a leveled incentive program, and parental support entity (Chen, 2008; Davis et al., 2014; Harrison et al., 2012), the current study has added to that research. After implementation of the specific suggestions noted in the implications section, future studies for the BRAIN program could take on several different forms. As fidelity data is collected on an on-going basis with individual student goals and counseling topics

needed, social/emotional progress and development could be measured as compared to behavior and academic progress. After student data progress is collected on the timeline for intervention components, the length of time a student needs to matriculate through the BRAIN program could be tracked. These time elements could then be compared with students that are receiving other program interventions or a controlled student group. Survey results collected from students, educators and parents could help pinpoint areas of successes and reveal areas of need that do not show themselves in the collection of scores, referral numbers, or attendance.

Looking at the post-intervention of these Tier 3 students, additional studies are needed on the specific longevity of the BRAIN participants through their high school graduation years. Future studies would include all of the BRAIN participants that have been included in the program from its inception through their post-intervention phase. The collection of data would include several of the variables from the current study: standardized achievement tests, GPA, school attendance, and discipline referrals. As time progresses, the research information could also include whether the students were able to follow through with a high school diploma and then to obtain a post-secondary job following graduation.

Another future study would be the question of what impact past trauma has on whether a Tier 3 intervention program is successful or able to be generalized. Research involving understanding trauma, identifying types of potential traumatic experiences these students have experienced, as well as examining how it manifests itself in their behavior is worth investigation. Trauma impacts students, parents, staff and schools as whole environments (Buxton, 2018; Frydman & Mayor, 2017; Guarino & Chagnon,

2018). Understanding trauma and its impact on behavior programs such as the BRAIN and other Tier 3 behavior intervention programs can compromise a school's fundamental mission to promote academic achievement and is worth investigating as part of future research.

References

Acker, R. (2007). Antisocial, aggressive, and violent behavior in children and adolescents within alternative education settings: Prevention and intervention. *Preventing School Failure, 51*(2), 5-12.

Algozzine, B., Wang. C., & Violette, A. S. (2011). Reexamining the relationship between academic achievement and social behavior. *Journal of Positive Behavior Interventions, 13*(1), 3-16.

Atkinson, R. C., & Geiser, S. (2009). Reflections on a century of college admissions tests. *Educational Researcher, 38*(9), 665-676, doi: 10.3102/0013189X09351981

Backner, W. (2010). *Training school psychologists to be experts in evidence based practices for tertiary students with serious emotional disturbance/behavior disorders.* Presentation presented at University of Utah, Utah.

Baer, D.M., Wolf, M.M., & Risley, T.R. (1968). Some current dimension of applied behavior analysis. *Journal of Applied Behavior Analysis, 1*, 91-97.

Barry, P., & Welsh, M. (2007). The BrainWise curriculum: Neurocognitive development intervention program. In D. Romer & E.F. Walker (Eds.), *Adolescent Psychopathology and the Developing Brain* (pp. 420-440). New York, NY: Oxford University Press.

Balfanz, R., Byrnes, V., & Fox, J. H. (2015). Sent home and put off track: The antecedents, disproportionalities, and consequences of being suspended in the 9th grade, In D. Losen (Eds.), *Closing the school discipline gap: Equitable remedies for excessive exclusion*, New York: Teachers College Press.

Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for notice researchers. *The Qualitative Report, 13,* 544-559.

Braaten, S. (1979). The Madison School Program: Programming for secondary level severely emotionally disturbed youth. *Behavioral Disorders, 4,* 153-162.

Brainwise CPR a Foundation for MCM – Mindfulness, contemplation and mediation. (n.d.). Retrieved from: https://www.brainwise-plc.org/.

Brantlinger, E., Jiminez, R., Klingner, J., Pugach, M., & Richardson, V. (2005). Qualitative studies in special education. *Exceptional Children, 71,* 195-207.

Briesch, A. M., & Chafouleas, S. M. (2009). Review and analysis of literature on self-management interventions to promote appropriate classroom behaviors (1988 – 2008). *School Psychology Quarterly, 24*, 106-118.

Buxton, P.S. (2018). Viewing the behavioral responses of ED children from a trauma-informed perspective. *Educational Research Quarterly, 41*(4), 30-49.

Caldarella, P., Williams, L., Hansen, B.D., & Wills, H.P. (2015). Managing student behavior in early elementary classrooms with class-wide function-related intervention teams: An observational study in early elementary classrooms. *Early Childhood Education Journal, 43,* 357-365.

Campbell, A., & Anderson, C. M. (2008). Enhancing effects of check-in/check-out with function-based support. *Behavioral Disorders, 33*(4), 233-245.

Chafouleas, S. M., Hagermoser-Sanetti, L.M., Jaffery, R., & Fallon, L. M. (2012). An evaluation of a classwide intervention package involving self-management and a group contingency on classroom behavior of middle school students. *Journal of Behavioral Education, 21*, 34-57.

Charmaz, E. (2006). *Constructing grounded theory: Practical guide through qualitative analysis*. Thousand Oaks, CA: Sage.

Chen, G. (2008). Communities, students, schools, and school crime: A confirmatory study of crime in U.S. high schools. *Urban Education, 43*(3), 301-318.

Connell, A. M., Dishion, T. J., Yasui, M., & Kavanagh, K. (2007). An adaptive approach to family intervention: Linking engagement in family-centered intervention to reductions in adolescent problem behavior. *Journal of Consulting and Clinical Psychology, 75*(4), 568-579.

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing Among Five Approaches* (2nd ed). Thousand Oaks, CA: Sage.

Crisis Prevention Institute. (n.d.) Retrieved from https://www.crisisprevention.com/.

Cubukcu, Z., & Donmez, A. (2012). Primary school administrators views about types of violence and methods coping with violence introduction. *Educational Administration: Theory and Practice, 18*(1), 37-64.

Davis, T. N., Dacus, S., Bankhead, J., Haupert, M., Fuentes, L., Zoch, T., & ... Lang, R. (2014). A comparison of self-monitoring with and without reinforcement to improve on-task classroom behavior. *Journal of School Counseling, 12*(12), 1-23.

Demissie, Z., & Brener, N. (2017). Demographic differences in district-level policies related to school mental health and social services-United States, 2012. *Journal of School Health, 87*(4), 227-235.

Djambazova-Popordanoska, S. (2016). Implications of emotion regulation on young children's emotional wellbeing and educational achievement. *Educational Review*, 68(4), 497–515.

Dupper, D. R., Theriot, M. T., & Craun, S. W. (2009). Reducing out-of-school suspensions: Practice guidelines for school social workers. *Children & Schools, 31*(1), 6-14.

Eyberg, S. M., Nelson, M. M., & Boggs, S. R. (2008). Evidence-based psychosocial treatments for children and adolescents with disruptive behavior. *Journal of Clinical Child and Adolescent Psychology, 37*(1), 215-237.

Faust, H., & Scior, K. (2008). Mental health problems in young people with intellectual disabilities: The impact on parents. *Journal of Applied Research in Intellectual Disabilities*, 21(5), 414-424.

Fennell, D. C., & Fishel, A. H. (2001). Parent education: An evaluation of *Step* on abusive parents' perceptions and abuse potential. *Journal of Child and Adolescent Psychiatric Nursing, 11*(3), 107-120.

Fisher, W., Piazza, C., & Roane, H. (2011). *Handbook of Applied Behavior Analysis*. New York: Guilford Press.

Freeman, K.A., & Dexter-Mazza, E.T. (2004). Using self-monitoring with an adolescent with disruptive classroom behavior: Preliminary analysis of the role of adult feedback. *Behavior Modification, 28*(3), 402-419. DOI: 10.1177/0145445503258982

Frydman, J.S. & Mayor, C. (2017). Trauma and early adolescent development: Case examples from a trauma-informed public health middle school program. *Children & Schools, 39*(4), 238-247.

Gagnon, J. C., Rockwell, S. B., & Scott, T. M. (2008). Positive behavior supports in exclusionary schools: A practical approach based on what we know. *Focus on Exceptional Children, 41*(1), 1.

Gast, D. L. (2010). *Single subject research methodology in behavioral sciences.* New York: Routledge.

Garner, P. W. (2010). Emotional competence and its influences on teaching and learning. *Educational Psychology Review, 22*(3), 297–321.

Glaser, B.G. (1978). *Theoretical sensitivity*. Mill Valley, CA: Sociology Press.

Gould, S. R., Beals-Erickson, S. E., & Roberts, M. C. (2012). Gaps and barriers in services for children in state mental health plans. *Journal of Child and Family Studies, 21*(5), 767-774.

Graham-Day, K. J., Gardner, R. I., & Hsin, Y. (2010). Increasing on-task behaviors of high school students with attention deficit hyperactivity disorder: Is it enough? *Education and Treatment of Children, 33*(3), 205-221.

Guarino, K & Chagnon, E. (2018). *Trauma-sensitive schools package*. Washington, DC: National Center on Safe Supportive Learning Environments.

Gumpel, T.P. (2007). Are social competence difficulties caused by performance or acquisition deficits? The importance of self-regulatory mechanisms. *Psychology in the Schools, 44*(4), 351-372.

Hansen, B. D., Wills, H. P., Kamps, D. M., & Greenwood, C. R. (2014). The effects of function-based self-management interventions on student behavior. *Journal of Emotional and Behavioral Disorders, 22*(3), 149-159.

Harrison, J. R., Vannest, K., Davis, J., & Reynolds, C. (2012). Common problem behaviors of children and adolescents in general education classrooms in the United States. *Journal of Emotional and Behavioral Disorders, 20*(1), 55-64.

Hemphill, S., & Hargreaves, J. (2009). The impact of school suspensions: A Student wellbeing issue. *ACHPER Australia Healthy Lifestyles Journal, 56*(3), 5-11.

Hester, P., Hendrickson, J., & Gable, R. (2009). Forty years later – The value of praise, ignoring, and rules for preschoolers at risk for behavior disorders. *Education & Treatment of Children, 32*(4), 513-535.

Hewett, F. (1968). *The emotionally disturbed student in the classroom.* Boston, MA: Allyn & Bacon.

Horner, R. H., Carr, E.G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Council of Exceptional Children, 71*(2), 165-179.

Horner, R. H., Kincaid, D., Sugai, G., Lewis, T., Eber, L., Barrett, S., & ... Johnson, N. (2014). Scaling up school-wide positive behavioral interventions and supports: Experiences of seven states with documented success. *Journal of Positive Behavior Interventions, 16*(4), 197-208.

Horner, R. H., Sugai, G., Todd, A.W., & Lewis-Palmer, T. (2005). School-wide positive behavior support: An alternative approach to discipline in schools, In L. Bambara & L. Kern (Eds.), *Positive behavior support*, New York, NY: Guilford Press.

Hoyle, C. G., Marshall, K. J., & Yell, M. L. (2011). Positive behavior supports: Tier 2 interventions in middle Schools. *Preventing School Failure, 55*(3), 164-170.

Iovannone, R., Greenbaum, P., Wang, W., Kincaid, D., Dunlap, G., & Strain, P. (2009). Randomized controlled trail of the prevent-teach-reinforce (PTR) tertiary intervention for students with problem behaviors: Preliminary outcomes. *Journal of Emotional and Behavioral Disorders, 17*(4), 213 – 225.

Jacobs, M., Downie, H., Kidd, G., Fitzsimmons, L., Gibbs, S., & Melville, C. (2016). Mental health services for children and adolescents with learning disabilities: A review of research on experiences of service users and providers. *British Journal of Learning Disabilities, 44*(3), 225-232.

Johnson, L. E., Wang, E. W., Gilinsky, N., He, Z., Carpenter, C., Nelson, C. M., & Scheuermann, B. K. (2013). Youth outcomes following implementation of universal SW-PBIS strategies in a Texas secure juvenile facility. *Education and Treatment of Children, 36*(3), 135-145.

Jones, R., Downing, R., Latkowski, M., & Ferre, R. (1992). Levels systems as shaping and fading procedures: Use in a child inpatient psychiatry setting. *Child & Family Behavior Therapy, 14(*2), 5-37.

Lassen, S. R., Steele, M. M., & Sailor, W. (2006). The relationship of school-wide positive behavior support to academic achievement in an urban middle school. *Psychology in the Schools, 43*(6), 701-712.

Lewis, T. J., Jones, S. E., Horner, R. H., & Sugai, G. (2010). School-wide positive behavior support and students with emotional/behavioral disorders: Implications for prevention, identification and intervention. *Exceptionality, 18*(2), 82-93.

Lower, A., Young, K. R., Christensen, L., Caldarella, P., Williams, L., & Wills, H. (2016). Effects of a Tier 3 self-management intervention implemented with and

without treatment integrity. *Education and Treatment of Children, 39*(4), 493-520.

Marchbanks III, M. P., Blake, J. J., Booth, E. A., Carmichael, D., Seibert, A. L., & Fabelo, T. (2015). The economic effects of exclusionary discipline on grade retention and high school non-graduate. In D. J. Losen (Ed.), *Closing the school discipline gap: Equitable remedies for excessive exclusion.* New York: Teachers College Press.

Martella, R. C., Nelson, J. R., Morgan, R. L., & Marchand-Martella, N. E. (2013). *Understanding and interpreting educational research*, New York, NY: Guilford Press.

Martella, R. C., Nelson, J. R., Marchand-Martella, N. E., & O'Reilly, M. (2011). *Comprehensive Behavior Management: Individualized, Classroom, and Schoolwide Approaches* (2nd ed.). CA: SAGE Publications.

Mastropieri, M. A., Jenne, T. & Scruggs, T. E. (1988). A level system for managing problem behaviors in a high school resource program. *Behavioral Disorders, 13*(3), 202-208.

McCrary, D., Lechtenberger, D., & Wang, E. (2012). The effect of schoolwide positive behavioral supports on children in impoverished rural community schools. *Preventing School Failure, 56*(1), 1-7.

McGill, P., Papachristoforou, E., & Cooper, V. (2006). Support for family careers of children and young people with developmental disabilities and challenging behavior. *Child: Care, Health, and Development, 32*(2), 159-165.

McIntosh, K., Bennett, J. L. & Price, K. (2011). Evaluation of social and academic effects of school-wide positive behavior support in a Canadian school district. *Exceptionality Education International, 21*(1), 46-60.

McLaughlin, T. F. (1984) A comparison of self-recording and self-recording plus consequences for on-task and assignment completion. *Contemporary Educational Psychology, 9,* 185-192.

McNaughton-Cassill, M. E. (2013). Is it incivility or mental illness? Understanding and coping with disruptive student behavior in the college classroom. Journal of Effective Teaching, 13(2), 94–108.

Merriam, S. (1988). *Case study research in education: A qualitative approach*. San Francisco: Jossey-Bass.

Molina, B. G., Flory, K., Bukstein, O. G., Greiner, A. R., Baker, J. L., Krug, V., & Evans, S. W. (2008). Feasibility and preliminary efficacy of an after-school program for middle schoolers with ADHD: A randomized trial in a large public middle school. *Journal of Attention Disorders, 12*(3), 207-217.

Morrissey, K. L., Bohanon, H., & Fenning, P. (2010). Positive behavior support: Teaching and acknowledging expected behaviors in an urban high school. *TEACHING Exceptional Children, 42*(5), 26-35.

Muscott, H. S., Mann, E. L., LeBrun, M. R. (2008). Positive behavioral interventions and supports in New Hampshire: Effects of large-scale implementation of schoolwide positive behavior support on student discipline and academic achievement. *The Journal of Positive Behavior Interventions, 10*(3), 190-205.

Noltemeyer, A. L., Ward, R. M., & Mcloughlin, C. (2015). Relationship between school suspension and student outcomes: A meta-analysis. *School Psychology Review, 44*(2), 224-240.

Office of Special Education Programs. (n.d.). Ideas that work. Retrieved from https://www.osepideasthatwork.org.

Oklahoma State Department of Education. (2016). *Annual incident & suspension report*. Retrieved from http://www.sde.ok.gov/sde/documents/2017-05-02/2016-annual-incident-and-suspension-report.

Ögülmüs, K., & Vuran, S. (2016). Schoolwide positive behavioral interventions and support practices: Review of studies in the "Journal of Positive Behavior Interventions." *Educational Sciences: Theory and Practice, 16*(5), 1693-1710.

Pelham, W. J., & Fabiano, G. A. (2008). Evidence-based psychosocial treatments for attention-deficit/hyperactivity disorder. *Journal of Clinical Child and Adolescent Psychology, 37*(1), 184-214.

Perry, B. D., & Szalavitz, M. (2017). *The Boy Who was Raised as a Dog: And Other Stories from a Child Psychiatrist's Notebook*. New York, NY: Basic Books.

Polvere, L. (2011). Youth perspectives on restrictive mental health placement: Unearthing a counter narrative. *Journal of Adolescent Research, 26*(3), 318-343.

Rafferty, L. A. (2010). Step-by-Step: Teaching students to self-monitor. *TEACHING Exceptional Children, 43*(2), 50-58.

Schinske, J., & Tanner, K. (2014). Teaching more by grading less (or differently), *CBE-Life Sciences Education, 13*, 159-166.

Schneider, J., & Hutt, E. (2013). Making the grade: A history of the A-F marking scheme. *Journal of Curriculum Studies, 46*(2), 1-24.

Simon, M. K., & Goes, J. (2013). *Dissertation and Scholarly Research: Recipes for Success*. Seattle, WA: Dissertation Success LLC.

Simonsen, B., Britton, L., & Young, D. (2010). School-wide positive behavior support in an alternative school setting: A case study. *Journal of Positive Behavior Interventions, 12*(3), 180-191.

Simonsen, B., Eber, L., Black, A. C., Sugai, G., Lewandowski, H., Sims, B., & Myers, D. (2012). Illinois statewide positive behavioral interventions and supports: Evolution and impact on student outcomes across years. *Journal of Positive Behavior Interventions, 14*(1), 5-16.

Simonsen, B., & Sugai, G. (2013). PBIS in alternative education settings: Positive support for youth with high-risk. *Behavior Education and Treatment of Children, 36*(3), 3-14.

Skinner, B. F. (1953). *Science and human behavior*. New York, NY: Macmillan.

Spoth, R., Trudeau, L., Guyll, M., Shin, C., & Redmond, C. (2009). Universal intervention effects on substance use among young adults mediated by delayed adolescent substance initiation. *Journal of Consulting and Clinical Psychology, 77*(4), 620-632.

Stake, R.E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.

Sternberg, R. (2001). Why schools should teach for wisdom: The balance theory for wisdom in educational settings. *The Educational Psychologist, 36*(4), 27-245.

Sternberg, R.J., Reznitskaya, A., & Jarvin, L. (2007). Teaching for wisdom: What matters is not just what students know, but how they use it. *London Review of Education, 5*(2), 143-158.

Steward, R. J., Hill, M., Neil, D. M., Pritchett, T., & Wabaunsee, A. (2008). What does GPA in an urban high school actually mean? *Educational Consideration, 36*(1), 11-16.

Sugai, G., & Horner, R. (2002). The evolution of discipline practices: School-wide positive behavior supports. *Child and Family Behavior Therapy, 24*, 23-50.

Systematic Training for Effective Parenting. (n.d.). Retrieved from http://www.parenting-resources.com/systematic-training-effective-parenting.htm.

Theriot, M. T. (2008). Conceptual and methodological considerations for assessment and prevention of adolescent dating violence and stalking at school. *Children and Schools, 30*(4), 223-233.

Time to Teach; A source for classroom management. (n.d.). Retrieved from http://www.timetoteach.com.

U.S. Department of Health and Human Services. (2001) *Youth Violence: A report of the Surgeon General*. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; Substance Abuse and Mental Health Services Administration, Center for Mental Health Services; and National Institutes of Health, National Institute of Mental Health. Rockville, MD.

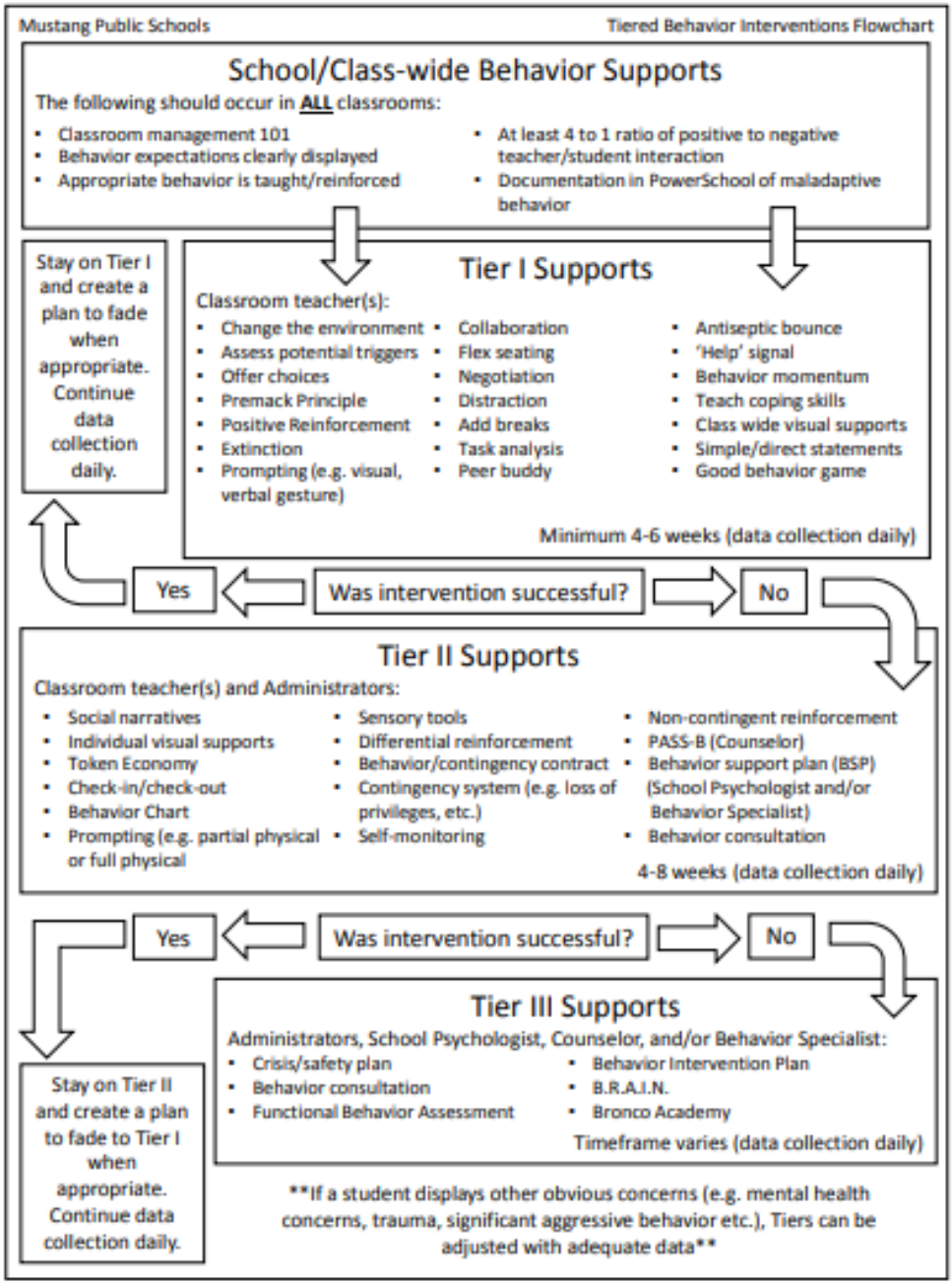
Utley, C. A., Kozleski, E., Smith, A., & Draper, I. L. (2002). Positive behavior support: A proactive strategy for minimizing behavior problems in urban multicultural youth. *Journal of Positive Behavior Interventions, 4*, 196-207.

Wodehouse, G. & McGill, P. (2009). Support for family careers of children and young people with developmental disabilities and challenging behavior: What stops it being helpful? *Journal of Intellectual Disability Research, 53*(7), 644-653.

Yin, R. K. (2003). Case study research: Design and methods (3rd ed.). Thousand Oaks, CA: Sage.

Appendix A

Tiered Behavior Interventions Flowchart



Appendix B

Parent Contract for BRAIN

BRAIN

Behavior **R**esponse and **I**ntervention **N**avigation

Parent Contract (Initial)

BRAIN is a leveled program provided to students at who have demonstrated a need for focused instruction on behaviors that will promote academic success. Teachers are trained in de-escalation and replacement behaviors. ***Parents are a vital part and required part of this program.***

Student Name_____ Grade _____

School Year _____ Home Site _____

BRAIN Site _____

Referred to the **BRAIN** program due to:

_____

The **BRAIN** Classroom involves the following:

_____ 5 leveled program designed to add privileges as the student demonstrates mastery of goals and objectives. All students will start the day in the BRAIN classroom until dismissed from the program. Minimum time at each level is 2 weeks. Students will be responsible for requesting to level up with additional privileges.

_____ All students participating in the **BRAIN** program will receive psychoeducational support group counseling.

Confidentiality release forms and permission slip to be completed with contract.

_____ Students not demonstrating appropriate goal and objective performances will be allowed to Refocus and return to full days in the **BRAIN** classroom. If after 2 days of refocusing the student has not been able to maintain the goals and objectives as needed for the level they were on, the student will be leveled back to the appropriate level based on current goal and objective performance. A scorecard is utilized to determine this standing. Students will have access to timeout locations in the **BRAIN** room and a refocus room.

_____ Students will be evaluated each 9 weeks for program success. Students not improving within the BRAIN program may be removed after a conference between the BRAIN team and family. It shall be the decision of the BRAIN team to determine if BRAIN placement is most appropriate.

_____ Designed to be an alternative to suspension in certain situations. Behaviors will be redirected and refocused in alignment with goals and objectives.

Behaviors involving violence to self or others, violation of the district drug policy or weapons policy or recurring with no progress will be exempt from this alternative.

_____ Required 8 week Parent Education Program

_____ Parent communication and engagement is critical. The **BRAIN** teacher will be the direct liaison with parents and will communicate early and often to promote a team support system.

I _____ have read and understand the information provided and have received the BRAIN parent handbook. I agree to be engaged in the support and implementation of this program with my child. I agree/disagree with my child receiving the **BRAIN** program support services. If I have concerns or questions I will immediately contact the **BRAIN** teacher.

Date of Meeting: _____

Parent/Guardian signature_____

COPY TO BRAIN SITE AND ASSISTANT DIRECTOR OF SPECIAL EDUCATION

Appendix C

B.R.A.I.N. Daily Scorecard Explanation

The BRAIN classroom employs an hourly scoring system for all students. Students are scored on their 3 personal goals to determine their available privileges each day. There are 3 areas that the student will have goals - Social Development, Self-Regulation and Emotional Development. The students will be scored each hour of every school day. Each student will have a score sheet, thus scoring themselves on each goal in each hour. The staff will score each student on each goal in each hour and reflect that on the scorecard that is in the Google Drive Folder for that student. The BRAIN teacher will average the scores from the previous day as a starting point for the upcoming day. During first hour BRAIN class, students will review/compare/contrast their scores with the staff scores. All scores are discussed with the BRAIN teacher. Any score below the student's current level will cause them to be on 'REFOCUS' (see refocus definition/description) until the score is raised back to the appropriate score. Minimum time at each level is two weeks. Students will be responsible for requesting to level up for additional privileges. The weekly averages are used to determine if a student is eligible for a 'Level Advancement', and the addition of more privileges.

This scoring system is based on the idea that a student who displays below average, average, or above average behavior throughout the day should receive the appropriate score. If a student requires multiple verbal redirections for any infractions to the expected average behavior norms then, in theory, that student cannot and should not receive a score reflecting average behavior. Staff must verbally redirect all students for every infraction to the expected average behavior norms and then score according to the student's behavior in order for the leveled system to work as it was designed.

REFOCUS

REFOCUS = Suspension of all privileges
Refocus is assigned as a consequence for students who do not maintain a daily score of their level or above or a student who does not successfully complete the "refocus" originally assigned.

Refocus lasts for a minimum of 2 days. During that time the student is returned to the BRAIN classroom for 100% of their day except for their one elective hour. During these two days the BRAIN teacher will address the negative behavior(s) and work with the student on how to correct those. The student will still be on the leveled system and tracked that way every hour. If during these 2 days they do not score at their current level - they will be 'bumped down' a level and return to the setting for that level.

B.R.A.I.N. Student Scorecard

Student Name: Fred Smith Date: 7/29/15

Goal	1st hr	2nd hr	3rd hr	4th hr	lunch/ recess	5th hr	6th hr	7th hr	Daily Total
S.D. goal- Fred will maintain personal space. • Hands to self • When talking to others keeps proper distance • While standing in line remains in own space	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ 24
S.R. goal – Fred respect others property • Appropriately touches peers' personal things • Appropriately touches school property • Appropriately touches teacher's property	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ 24
E.D. goal- Fred will demonstrate appropriate behavior when angry. • Appropriate volume with voice • Appropriate actions with hands • Remains in classroom	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___	___ 24

___ = no behavior observed **1**= 1 of 3 behavior observed **2**= 2 of 3 observed **3**= 3 of 3 observed

Maintained Level: YES NO (highlight one)

Students NOT maintaining their level will be on REFOCUS for minimum of 2 days.

Levels	Maintain	Advancement
Level 1	50%	60%
Level II	60%	70%
Level III	70%	80%
Level IV	80%	95%
Level V	95%	

Appendix D

Leveled Privileges

Level I
In classroom all but 7th hour elective
Cell Phone after lunch

Level II
Allowed to go to 7th hour elective and ELA

Level III
Allowed to go to 7th hour elective, ELA, science, Math and Social Studies
Allowed to go to onsite service field trip

Level IV
Start with peers in gym prior to start of school day
7th hour elective, ELA, science, Math and Social Studies
Allowed to go to onsite service field trip
Allowed to go through lunch line and choose lunch items or bring lunch
Allowed to eat with friends in cafeteria

Level V
All of the above plus RECESS
Buy any item from vending machine at lunch

Appendix E

BEHAVIOR GOALS & OBJECTIVES

I. Social Development – Building Improved Peer and Adult Relationships

Skill Deficit: Does not understand personal space

GOALS:

- Student will accept correction and process needed changes
- Student will accept correction and makes an effort to implement changes in social interactions
- Student will self identify and maintain appropriate personal space
- Student will identify when non-verbal communication when annoying peers

Skill Deficit: Inappropriate or unnecessary physical contact with others

GOALS:

- Student will use verbal request before making physical contact with adults or peers.
- Student will refrain from contact such as hugging, grabbing, pushing or playful wrestling when interacting with others.
- Student will interact with others in a physically appropriate manner.

Skill Deficit: Agitates and provokes others to a level of verbal/physical assault

GOALS:

- Student will refrain from participating in "horseplay"
- Student will make socially acceptable comments/remarks when interacting with others
- Student will refrain from inappropriately touching other students
- Student will interact with others in a physically appropriate manner

Skill Deficit: Lies, denies, exaggerates and/or distorts the truth

GOALS:

- Student will refrain from providing inaccurate information
- Student will take responsibility for committed inappropriate behaviors
- Student will be truthful
- Student will refrain from denying behaviors
- Student will use socially acceptable language when conversing with the teacher

Skill Deficit: Makes sexually related comments, or engages in behaviors with sexual overtones

GOALS:

- Student will refrain from using obscenities in the classroom.

●Student will refrain from making obscene gestures in the classroom.

●Student will refrain from touching others in a sexually inappropriate manner.

●Student will refrain from exposing and/or touching private parts.

II. Self-Regulation (on-task/work completion) – Building improved classroom performance

Skill Deficit: Easily confused

GOALS:

- Student will improve awareness and attention to information and activities by listening carefully and completing assignments
- Student will solve problems, with assistance
- Student will accept assistance, when offered, for help
- Student will make correct inferences, with assistance of clarification

Skill Deficit: Task refusal

GOALS:

●Student will begin task when assigned.

●Student will complete task in agreed amount of time (ex. 10 minutes of time).

Skill Deficit: Excessive talking

GOALS:

●Student will identify triggers in the environment

●Student will self-monitor and chart off-task behaviors frequency

●Student will accept adult redirection for frequency of off-task behavior

Skill Deficit: Wandering the room

GOALS:

●Student will only leave seat after receiving permission in appropriate manner.

●Student will be given opportunities to move

Skill Deficit: Disorganized

GOALS:

- Student will have necessary materials for assigned activities
- Student will organize materials at the beginning and end of each assignment
- Student will place completed work in a specified location
- Student will complete one step of the before going onto the next
- Student will complete steps of the assignment in sequential order

Skill Deficit: Tired, listless, unmotivated, not interested in school

GOALS:

- ●Student will complete assignments and tests independently.
- ●Student will begin classroom assignments and tests with assistance
- ●Student will complete 50% of classroom assignments with checks for on task behavior
- ●Student will actively participate in hands on classroom activities that do not require reading or written performance
- ●Student will passively participate in classroom activities without disruption.

Skill Deficit: Leaves the classroom without permission

GOALS:

- ●Student will remain in the classroom unless given permission.
- ●Student will identify need for taking break strategies independently.
- ●Student will use coping strategies for taking a break when cued by teacher.
- ●Student will ask for adult assistance when feelings of escape arise.

III. Emotional Development: Building tolerance and self-calming strategies

Skill Deficit: **Loud voice tone**

GOALS:

- ●Student will use classroom voice with no adult reminders.
- ●Student will have 3 reminders to use classroom voice. 1 AM and 1 PM
- ●Student will have 2 reminders to use classroom voice. 1 AM and 1 PM
- ●Student will have 3 reminders to use classroom voice. 1 AM and 1 PM
- ●Student will have 4 reminders to use classroom voice. 2 AM and 2 PM

Skill Deficit: **Easily angered, annoyed or upset**

GOALS:

- ●Student will demonstrate appropriate behavior when annoyed or angry with others
- ●Student will tolerate others "inappropriate behaviors" by demonstrating verbal and

  physical restraint

●Student will walk away from those who are attempting to arouse anger and/or who are annoying

●Student will continue to demonstrate appropriate behavior when angered or annoyed

●Student will seek adult assistance to alleviate those situations which arouse anger and annoyance

Skill Deficit: **Negative self-talk**

GOALS:

●Student will recognize when engaging in negative self-talk.

●Student will restate negative self-talk in a positive form with prompts and modeling if needed.

●Student will restate negative self-talk as a positive self-comment with adult prompt.

●Student will refrain from making negative self comments.

Appendix F

Level Advancement Request

Name: _____ Date of request: _____
Current Level: _____

Did you maintain the required points for level advancement? Yes___ No___

Please state what you have learned about controlling your behavior.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Next Level: _____

Please state what the expectations are in the next level

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Level advancement approved: YES _____ NO _____ Advance to: _____

If No why: _____

Appendix G

Code book following transcription of recorded interviews

Level 3: Coding Themes	Level 2 Coding Patterns	Level 1 Coding Codes
Prior student behaviors:	**Prior student behaviors:**	**Prior student behaviors:**
a. violence towards others	lack of structure	**Coordinator:**
b. violence towards self	lack of support	situations where teachers unable to teach the class
c. environmental concerns	angry	lack of structure
- consistency / routine	suspended / ISI / detention	more in place to assist
- structure	lack of success	**Parent:**
d. lack of behavior/social education	violent	stressed
	high risk / need	lack of support
	self-harming	unstructured time
	stress	"odd kid out"
	confusion	reduce him down to the smallest setting possible
		Teacher:
		high risk
		Students:
		mad
		suspended / ISI / detention
		Psychologist:
		high needs
		struggle with unstructured
		lack of consistency / routine
		confusion
		Principal:
		lack of success
		suspension
		complete meltdowns
		throwing chairs
		threatening people (teachers)
		self-harming type

		behaviors
		out-of-control behavior
		angry / violent
Prior parental needs:	**Prior parental needs:**	**Prior parental needs**
a. support	Curriculum	**Coordinator:**
b. curriculum	Support group	curriculum for parents
	Resistant	parent support group
	Distrust of school	**Parent:**
		Stress in working with school
		Principal:
		resistant
		distrust of school
		support group
Responses by building staff:	**Responses by building staff**	**Responses by building staff:**
a. positive / successful	positive / successful	**Teacher:**
b. problem solving group	ease of scoring components	"love it"
c. realistic concerns	problem solving group	scoring of students is easy / instant feedback
d. communication/education = support	teacher concerns for "enabling behavior"	"positive"
	communication/education = support	**Psychologist:**
		building support is successful
		genuine desire for success for all students
		no blame is put on others (buildings or parents)
		problem solving group
		brainstorming ideas to try
		Principal:
		teacher concerns for "codling" or "enabling"
		communicating the goal
		on-going education to staff = support
		Quote: lines 44-50

Parent success looks like:	**Parent success looks like:**	**Parent success looks like:**
a. additional support	support from school	**Coordinator:**
- other parents	relationships / support with other parents	supporting from the school
- school personnel	trust / connected with school	developed relationships with families
b. trust / connection with school	educational benefits	part of their child's education
c. educational benefits		feel connected to the school (2 times)
		trust the school
		Parent:
		mini support group (2 times)
		educational benefits
		able to talk things through
		Principal:
		educational curriculum for parents
		sharing among themselves (2 times)
		talk about issues
		school support
		no judgment from school
		support for each other (parents)
Student success looks like:	**Student success looks like:**	**Student success looks like:**
a. behavioral benefits	out-of-school suspension days are down	**Coordinator:**
- attendance	intrinsic control / power over behavior	suspensions are down
- control over behavior	learn from unique set of peers	saves lives
b. emotional benefits	emotions expressed: excitement, happy	keeps kids in school
c. academic benefits	actions expressed: mature, responsible, able to calm	not ruled by their behaviors
	academic success	taught to think through "it" (behavior)
		Parent:
		took him out of stressful times
		learn from unique set of peers

		QUOTE lines 35-40
		calmer - quicker to calm himself down (2 times)
		opportunity to listen, learn, observe others
		happier
		more mature acting
		has a greater sense of responsibility
		Teacher:
		students experience "success"
		apprehension at first to feeling secure
		Students:
		"helped me a lot from not getting into trouble" (2 times)
		"when you are mad, stay on a lower level than them"
		"take a deep breath and walk away" (2 times)
		"ask for a break"
		no suspensions
		no ISI
		No detentions
		Psychologist:
		students being educated (2 times)
		behavior management
		students attending school
		no truancy
		no suspensions
		st engaged
		feeling success for themselves (consistent)
		genuine enjoyment, happy (3 times)
		know routines, expectations
		students getting acceptance from teachers/peers
		intrinsic motivation

		happy for each other
		able to try new behaviors w/o anxiety
		willing to take the risk
		QUOTE lines 72-74
		Principal:
		regulate their own behavior
		sense of control / power (2 times)
		less suspensions
		excitement / happy (3 times)

Note. Code book represents three levels of coding. Coding originally broken out by questions asked by interviewer with line-by-line coding statements listed from interviewee's on the far right. The middle represents the focused coding phase. The far left column represents the theoretical coding when appropriate.

Appendix H

Table 3
School Attendance Data Collection

Participants		5th		6th		7th		8th		9th	
		Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
IRIS	# days out of class due to discipline		2	1				2	2	21	1
	# of days attended day/treatment program										
	# of days out due to homebased placement										
	# of days checked out early	2	3			3	1	1	1		
	# of days tardy			1	1		1		3		2
	# of days absent - undisclosed reason	1	9	7	4	4	4	3	12	8	6
	Total # full days missed	**1**	**11**	**8**	**4**	**4**	**4**	**5**	**14**	**29**	**7**
JEREMY	# days out of class due to discipline										
	# of days attended day/treatment program										
	# of days out due to homebased placement										
	# of days checked out early		1						3	1	
	# of days tardy				1	1			4		
	# of days absent - undisclosed reason		1		4					1	
	Total # full days missed	**0**	**1**	**0**	**4**	**0**	**0**	**0**	**0**	**1**	**0**

Participants		5th		6th		7th		8th		9th	
		Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
BILLY	# days out of class due to discipline			1							5
	# of days attended day/treatment program			14	87						
	# of days hospitalized		13					5			
	# of days out due to homebased placement										
	# of days checked out early					1	6	1	6	2	2
	# of days tardy	2	6						2	2	1
	# of days absent - undisclosed reason	2	6	16		4	4	7	15	9	12
	Total # full days missed	**2**	**19**	**31**	**87**	**4**	**4**	**12**	**15**	**9**	**17**
JONATHAN	# days out of class due to discipline	7		18	4		3			7	2
	# of days attended day/treatment program				67						
	# of days hospitalized		35								
	# of days out due to homebased placement										
	# of days checked out early	1		2		1	3	3	6		4
	# of days tardy		2	2	3		4	2	1	1	1
	# of days absent - undisclosed reason	2	3	3		5	6	8	9	1	4
	Total # full days missed	**9**	**38**	**21**	**71**	**5**	**9**	**8**	**9**	**8**	**6**

Note. School attendance was collected on each participant from the school's student data management system. Total number of full days missed did not include number of days recorded as tardy or number of days checked out early.

Appendix I

Table 4

Incidents and Log Entry Data Collected

Student Name: Iris	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Incidents & Log Entries										
Background: 4th grade year:										
Records indicate several DHS hm placements										
3 incidents of stealing										
1 defacing property										
3 incidents of violence towards st										
Mother reported: mild aspergers										
Reported throwing up - NOS		6x								
Violation of school rules /Theft		ISS - 1 day								
Disorderly Conduct		ISS - 1 day								
disrespectful to teachers/st										
Disorderly Conduct/Disruptive Behavior		ISS - recess								
Calling names/spitting										
Pain in upper R back - NOS		X								
Ear hurting - Wax in ear				X						
Student had gas				2x						
Insubordination				ISS - recess						
Disorderly Conduct/Disruptive Behavior				ISS - 1 day						
Spit on st										
Threw up on bus				X						
Hungry - no breakfast				X						
St threw up in bathroom - NOS					X					
Rash on lips / face						X				
Disorderly Conduct/Disruptive Behavior							ISS - 2 days			
spit, poked, yelled at st										
Violation of School Rules								ISS - 2 days		
inappropriate action										
Injury: Toe/scraped back								2x		

Student Name:
Iris

	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Violation of School rules / Threat physical with st									OSS - 2 days	
Theft stole st computer									OSS - 3 days	
Violation of School Rules									no dis	
Violation of School Rules lied									ISS - 2 days	
Disorderly Conduct/Disruptive Behavior argumentative / theft									ISS - 5 days	
St headache									3x	
sore throat, vomiting in bathroom									X	
st reports hitting head on desk									X	
Disorderly Conduct/Disruptive Behavior profanity / throwing obj									ISS - 2 days	
Bus Conduct profanity									no dis	
St complained of being hungry									X	
Insubordination Disrespectful teachers/st									OSS - 1 day	
st stomachache									X	
Insubordination Wandering / att theft									OSS - 2 days	
Disorderly Conduct / Theft profanity / theft									OSS - 4 days	

Student Name:
Iris

	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
st complained of neck pain										X
Violation of School Rules inappropriate comments										no dis
Violation of School Rules threat of harm to parents										no dis
Right knee pain										7x
Violation of School Rules disrespectful st made a "kill list"										OSS - 1 day *

* Student was placed on virtual/ homebased instruction in Feb (Sem 2 - 9th grade)

Student Name:
Jeremy

	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Incidents & Log Entries										
Hot and crying - reported to nurse	X	X								
Reported to have trouble breathing	X									
Reported not feeling well - NOS	3X	2X								
Suicidal comment	conf/ref									
Injury w/ bleeding	X									
Threatening other st throwing, yelling		no dis								
Disruptive behavior refusal, threatening others			no dis							
St lost tooth			X							
Disruptive behavior throwing equipment			no dis							
St reports not feeling well - NOS			6X	4X						
Injury - hit head on pole			X							
Self-harm threat			conf							
Disruptive behavior hit st and assistant			no dis							
Disruptive behavior hit student				no dis						
Battery/Assault hit student				OSS - 2 days						
Mosquito bite/sun burn - NOS					X					
St reports not feeling well - NOS							X			
St reports not feeling well - Fever								X		
St reports sore throat - Fever									X	

Student Name:
Billy

	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Incidents & Log Entries										
Background: 3 - 4th grade year: Hospitalization and Day Treatment No attendance at current school recorded										
5th grade: 3 hour in-school schedule Attended school from 8/16 - 3/13 Hospitalized 3/13 Ret to school 4/8-5/27										
St not feeling well - NOS			6x							
Leaving Class / Refusal to Comply			OSS - 1 day							
			St withdrew 12/2 to attend out-of-district day treatment St did not ret for SY							
St not feeling well - NOS					X	X				
St not feeling well - NOS							2X			
Rash on arm								X		
St not feeling well - st reported symptoms								3X		
Glucose check with nurse									7X	
St not feeling well - NOS									5X	2x
Other health issue									5X	4X
Student injury									7X	5x
Hungry - no money									X	
Disorderly Conduct hit another st									Lunch det	
Attendance /Truancy Left campus									Lunch det	
Insubordination/refused to follow dir									Lunch det	
Battery / Assault: Fight										OSS - 5 days
Disorderly Conduct: moved another st										Lunch det

Student Name:
Jonathan

	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Incidents & Log Entries										
Background: 4th grade year: 11 incidents of violence w students 3 incidents of threatening students 16 incidents of disrespect 18 incidents of angry outbursts 1 report of parental abuse by st 1 incident of violence to adults										
Student reported inj to nurse	X									
Aggression towards st/Refusal to wk	19X	*								
Aggression towards students	12X									
Aggression towards self/Refusal to wk	2X									
Inappropriate gestures	X									
Fighting throwing objects, kicking	ISS - 1 day									
Aggressive Behavior Could not calm self In ISS	OSS - 1 day									
Fighting aggressive in PE	ISS - 1 day									
Threatening Behavior kicking and punching	OSS - 3 days									
Violent / Threat to Adults threatened to shoot dad pushed a table into adult	ISI- 1 day									
*Records indicate st moved to facility Feb/2014 (sem 2 - 5th gr). Attended school 3/24 - 4/22 Returned to institution 4/22 Attended school 5/13 - 5/27										

Student Name: Jonathan	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Verbally Aggressive cursing at teacher/class			ISS - 1 day							
St reports to nurse ill - w/ symptoms			X							
Fight with another student			ISS - 1 day							
			OSS - 1 day							
Fighting: pushing and kicking			OSS - 2 days							
Verbally inappropriate to staff			ISS - 1 day							
Disrespect/refusal to complete wk			ISS - 1 day							
Violent cussing/kicking/banging head			OSS - 1 day							
Verbal threats to students			ISS - 1 day							
Verbal threats/distruction of prop			OSS - 3 days							
Use of profanity			ISS - 2 days							
Profanity / verbal threats toward staff			OSS - 2 days							
Profanity / verbal threat toward staff			OSS - 2 days							
Disorderly Conduct				ISI - 1 day						
Verbal Threat				ISI - 1 day						
Verbal Threat				ISI - 2 days						
				**						
	**Records indicate st moved to out of district day/treatment program 1/16 (sem 2 - 6th grade) Attended school 4/30 - 5/22									
Battery / Assault attacked a student					OSS - 3 days					
Injury of hand							X			
St reports not feeling well - NOS							2X			

Student Name: Jonathan	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
St reports not feeling well - NOS									X	
St reports not feeling well - low heart rate										X
Violation of school rules no details									no dis	
Violation of school rules making fun of student									no dis	
Obscene Language / Profanity									ISI - 3 days	
Threat Comments about shooting									OSS - 4 days	
Obscene Language / Profanity towards teacher - dare										Lunch det
Disorderly Conduct Racial joke in class										ISS - 2 days

Note. Incidents and log entry information was gathered on each participant from the school's student data management system. Some of the information is also recorded on the office referral table, as well. OSS=Out-of-school suspension, ISS=In-school suspension, det = detention, NOS = no other symptoms, no dis = no discipline.

Appendix J

Table 5

Office Referral Data Collected

Student Name: Iris

	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Office Referrals										
Background: 4th grade year: Records indicate several DHS hm placements 3 incidents of stealing 1 defacing property 3 incidents of violence towards st										
Disorderly Conduct/Disruptive Behavior Calling names/spitting		ISS - recess								
Disorderly Conduct disrespectful to teaches/st		ISS - 1 day								
Violation of school rules /Theft		ISS - 1 day								
Disorderly Conduct/Disruptive Behavior Spit on st			ISS - 1 day							
Insubordination			ISS - recess							
Disorderly Conduct/Disruptive Behavior spit, poked, yelled at st							ISS - 2 days			
Violation of School Rules inappropriate action								ISS - 2 days		
Disorderly Conduct / Theft profanity / theft									OSS - 4 days	
Insubordination Wandering / att theft									OSS - 2 days	
Insubordination Disrespectful teachers/st									OSS - 1 day	
Bus Conduct profanity									no dis	
Disorderly Conduct/Disruptive Behavior profanity / throwing obj									ISS - 2 days	
Disorderly Conduct/Disruptive Behavior argumentative / theft									ISS - 5 days	

Student Name: Iris

	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Violation of School Rules lied									ISS - 2 days	
Violation of School Rules									no dis	
Theft stole st computer									OSS - 3 days	
Violation of School rules / Threat physical with st									OSS - 2 days	
Violation of School Rules disrespectful st made a "kill list"										OSS - 1 day
Violation of School Rules threat of harm to parents										no dis
Violation of School Rules inappropriate comments										no dis *

* Student was placed on virtual/ homebased instruction in Feb (Sem 2 - 9th grade)

Student Name:
Jeremy

	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Office Referrals										
Suicidal comment	conf/ref									
Threatening other st		no dis								
throwing, yelling										
Disruptive behavior			no dis							
refusal, threatening others										
Disruptive behavior			no dis							
throwing equipment										
Self-harm threat			conf							
Disruptive behavior			no dis							
hit st and assistant										
Disruptive behavior				no dis						
hit student										
Battery/Assault				OSS - 2 days						
hit student										

Student Name:
Billy

	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Office Referrals										
Background: 3 - 4th grade year:										
Hospitalization and Day Treatment										
No attendance at current school recorded										
5th grade: 3 hour in-school schedule										
Attended school from 8/16 - 3/13										
	Hospitalized 3/13									
	Ret to school 4/8-5/27									
Leaving Class / Refusal to Comply			OSS - 1 day							
			St withdrew 12/2 to attend							
			out-of-district day treatment							
			St did not ret for SY							
Disorderly Conduct									Lunch det	
hit another st										
Attendance /Truancy									Lunch det	
Left campus										
Insubordination									Lunch det	
Refused to follow dir										
Battery / Assault										OSS - 5 days
Fight										
Disorderly Conduct										Lunch det
Moved another st										

Student Name: Jonathan

	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Office Referrals										
Background: 4th grade year:										
11 incidents of violence w students										
3 incidents of threatening students										
16 incidents of disrespect										
18 incidents of angry outbursts										
1 report of parental abuse by st										
1 incident of violence to adults										
Aggression towards st/Refusal to wk	19X									
Aggression towards students	12X	*								
Aggression towards self/Refusal to wk	2X									
Inappropriate gestures	X									
Fighting	ISS - 1 day									
throwing objects, kicking										
Aggressive Behavior	OSS - 1 day									
Could not calm self In ISS										
Fighting	ISS - 1 day									
aggressive in PE										
Threatening Behavior	OSS - 3 days									
kicking and punching										
Violent / Threat to Adults	ISI- 1 day									
threatened to shoot dad										
pushed a table into adult										
	*Records indicate st moved to facility Feb/2014 (sem 2 - 5th gr). Attended school 3/24 - 4/22 Returned to institution 4/22 Attended school 5/13 - 5/27									

Student Name: Jonathan

	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Verbally Aggressive										
cursing at teacher/class			ISS - 1 day							
Fight with another student			ISS - 1 day							
			OSS - 1 day							
Fighting: pushing and kicking			OSS - 2 days							
Verbally inappropriate to staff			ISS - 1 day							
Disrespect/refusal to complete wk			ISS - 1 day							
Violent			OSS - 1 day							
cussing/kicking/banging head										
Verbal threats to students			ISS - 1 day							
Verbal threats/distruction of prop			OSS - 3 days							
Use of profanity			ISS - 2 days							
Profanity / verbal threats toward staff			OSS - 2 days							
Profanity / verbal threat toward staff			OSS - 2 days							
Disorderly Conduct				ISI - 1 day						
Verbal Threat				ISI - 1 day						
Verbal Threat				ISI - 2 days						
				**						
	**Records indicate st moved to out of district day/treatment program 1/16 (sem 2 - 6th grade) Attended school 4/30 - 5/22									
Battery / Assault					OSS - 3 days					
attacked a student										

Student Name: Jonathan	Pre-Intervention				Intervention				Post-Intervention	
	5th Grade Year		6th Grade Year		7th Grade Year		8th Grade Year		9th Grade Year	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Violation of school rules no details									no dis	
Violation of school rules making fun of student									no dis	
Obscene Language / Profanity Threat Comments about shooting									ISI - 3 days OSS - 4 days	
Obscene Language / Profanity towards teacher - dare										Lunch det
Disorderly Conduct Racial joke in class										ISS - 2 days

Note. Office referral information was gathered on each participant from the school's student data management system. OSS=Out-of-school suspension ISS=In-school suspension.

Appendix K

Table 2

Grade Point Averages

	Prior to Intervention				During Intervention			Post Intervention	
Participants	5th		6th		7th	8th		9th	
	1st sem	2nd sem	1st sem	2nd sem	2nd sem	1st sem	2nd sem	1st sem	2nd sem
Iris	2.75	2.75	3.25	1.75	3.25	2.0	2.25	0.0	0.0
Jeremy	2.75	3.5	3.25	3.5	3.5	3.25	3.0	3.66	3.75
Billy	3.33	*Incomplete data			1.75	2.0	2.25	1.0	0.33
Jonathan	2.25	1.75	3.25	2.75	2.75	2.0	1.5	1.5	2.66

Note. Grades were obtained for each participant from the school's student data management system. GPA was figured on the core subjects only within the given semester. Core subjects utilized were math, English, science, and social studies. The scale used was A=4, B=3, C=2, D=1, F=0. An average was taken of the total.

Appendix L

IRB Approval Letter

The UNIVERSITY of OKLAHOMA

Institutional Review Board for the Protection of Human Subjects

Human Research Determination Review Outcome

Date: October 02, 2018

Principal Investigator: Karen Lynne Wilson

Study Title: Behavior Response and Intervention Navigation And Its Effects on a Selection of Middle Schools Students: A Program Evaluation

Review Date: 10/02/2018

I have reviewed your submission of the Human Research Determination worksheet for the above-referenced study. I have determined this research does not meet the criteria for human subject's research. The principal investigator is obtaining existing de-identified data from MPS for secondary analysis. No interaction with participants or analysis of identifiable data. Therefore, IRB approval is not necessary so you may proceed with your project.

If you have questions about this notification or using iRIS, contact the HRPP office at (405) 325-8110 or irb@ou.edu. Thank you.

Cordially,

Lara Mayeux

Lara Mayeux, Ph.D.
Chair, Institutional Review Board

Appendix M

District Informed Consent

Informed Consent Form
Program Evaluation of BRAIN
Mustang Public Schools

Purpose of the Research Study:

The purpose of this research study is to estimate the impact the Mustang Public School's Behavior Response and Intervention Navigation (BRAIN) program had on its participants. This research study utilizes a case study focusing on the intervention to determine how the program participants changed as a result of their participation in the BRAIN program and whether these changes were consistent in the year following their participation. This research is focused on the original participants (n=4) during the 2015-16 and 2016-17 school years, as well as data collected from two years before and one year after participation in the intervention ended. Student test scores, grade point averages, attendance records, and disciplinary referrals will be utilized to determine how the students' changed as a result of their participation in the BRAIN program and were these changes consistent in the year beyond the presence of the intervention.

Procedures:

This evaluation study will utilize extant data that is typically collected by school leaders at the school district. This consent form will be obtained from district administrators to access and use the data for this research project. A variety of statistical methods not typically utilized by the school will be used to provide feedback on the BRAIN program and its impact on program participants. The principal researcher will not have direct contact with students involved in the evaluation study, but will be allowed access to extant data of participating students' demographic information, testing records, attendance records, discipline records, grade point averages, log entries, behavior records, and all other archived student management data through de-identified data from the Student Assistance Coordinator and/or the Assistant Director of Special Education.

The Student Assistance Coordinator (Director of the BRAIN program) and/or the Assistant Director of Special Education with Mustang Public Schools will provide the researcher information from the original students who participated in the BRAIN program at Mustang Middle School during the 2015-2017 school years. The Student Assistance Coordinator and/or Assistant Director of Special Education Programs will provide information to include student demographic information (gender, race/ethnicity, disability, and economically disadvantaged status), testing scores, grade point averages, number of discipline occurrences, attendance information, etc. through the 2015-17 school year period, as well as prior years and one year after. They will also provide de-identified information from log-entries, behavioral records and archived student management data. The collection will be completed in a secure room at Mustang Public Schools administration office. After participants are assigned pseudonyms and all identifying information removed, the participant information will be recorded and data will be shared with the researcher. The pseudonyms will be coded so as not to reveal any student or family directly to the researcher. The data key and original data will be maintained by the Student Assistance Coordinator and/or the Assistant Director of Special Education and password protected where it is only accessible to the two of them. The data key used for this study will be destroyed at the conclusion of the study by the District Administrators. The de-identified data, which utilizes pseudonyms, will be stored on the researcher's laptop.

Risks and Benefits:

There are no known risks associated with this research. This evaluation can be used as an assessment for analyzing and improving the BRAIN intervention program. The use of the data can provide a picture of objective-based results to identify the program's effectiveness in meeting its goals. This type of research can also provide educators a better understanding of intervention options for helping all students find success. School-wide positive behavior programs with a mental-health focus, self-monitoring programs, and parental involvement with schools are all components that may contribute to a successful behavior intervention program.

Confidentiality:

No identifying information will be associated with this research. The data will be coded and stored electronically with password requirement for access. The data key, held by district administrators, will be destroyed at the conclusion of the research project. The results obtained from this study may be used for writing reports, scientific journals, or presented at educational research meetings.

Compensation:

There is no compensation in this evaluation project.

Documentation of Informed Consent

Mustang Public Schools, with the permission of Interim Superintendent, Charles Bradley, Margaret Corn, Assistant Director of Special Education Services, and Kitrena Hime, Student Assistance Coordinator (Director of the BRAIN program), voluntarily agree to participate in this evaluation research project. Your signature certifies that you have decided to consent to this program evaluation, having read and understood the information presented. You will be given a copy of this consent form to keep.

Interim Superintendent: Charles Bradley

Signature Charles Bradley Date 11/26/18

Assistant Director of Special Education: Margaret Corn

Signature Kitrena Hime Date 11/26/18

Student Assistance Coordinator: Kitrena Hime (Current Director of BRAIN)

Signature Margaret Corn Date 11/26/18

Researcher: Karen Wilson

Researcher Signature K. L. Wilson Date 11-26-18

Principal Researcher: Karen L Wilson
Doctoral Candidate
The University of Oklahoma