Functional Behavioral Assessment and Intervention Planning: A Single-Case Study and Follow-Up of a Child with a Cognitive Disability

by

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ABSTRACT

Functional Behavioral Assessments (FBAs) and Behavioral Intervention Plans (BIPs) are the best practice standard in education for reducing the occurrence of problem behavior of students. Because of legal mandates requiring the use of FBAs on students with disabilities who face disciplinary action, the research on the use of FBAs and BIPs with the emotional and behavioral disabilities population is strong. The FBA and BIP process is less often used for students with cognitive disabilities, and less research has been conducted on the effectiveness of intervention plans for students with cognitive disabilities. The purpose of this case study was to determine whether interventions based on an FBA are effective for a child with a cognitive disability, and whether those interventions have an effect on the student's behavior and teacher's strategies one year after initial implementation. In this single-subject design, an FBA and BIP were completed on an elementary-aged student with a cognitive disability. Baseline data and

intervention data was collected and analyzed on the subject's problem behaviors of verbal and physical resistance. Analysis of the data concluded that the subject's problem behaviors of verbal and physical resistance decreased from baseline to the final phase of the intervention. Qualitative data was collected to determine if the BIP was still being used for the student one year after the completion of a functional assessment and the implementation of an intervention plan in a school setting. During the follow-up, it was determined that strategies from the BIP were still being implemented and that the student's behavioral concerns were less significant.

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Chapter I: Introduction

Background

Serious problem behaviors displayed in school can interfere with the learning of the individual student displaying the behavior and also of other students in the classroom. School staff often turn to Functional Behavioral Assessments (FBAs) and Behavior Intervention Plans (BIPs) to help reduce behavioral disruption of students.

By using Functional Behavioral Assessment (FBA), school staff attempts to understand the link between behavioral problems and the environment through interviews, cumulative record reviews, and observation of the problem behavior (O'Neill et al., 1997). In order to effectively address problem behaviors, school personnel must analyze the problem behavior and identify what purpose or function it is serving for the child (Murdick & Gartin, 1999). Because most behavior is purposeful, behavior is used by individuals to fill functions, needs, or purposes. All behavior, including inappropriate behavior, results from a complex interaction between the child and his or her environment.

The goal of FBA is to develop a summary statement which outlines the antecedents, triggers, maintaining consequences, and functions of the problem behavior. Then, this summary statement is used to develop Behavior Intervention Plans (BIPs) for individual students with behavioral disruption. Specific strategies focus on reducing triggers, teaching replacement behaviors, and responding in less reinforcing ways when dealing with difficult behavior.

The FBA and BIP process in schools may be conducted through a variety of methods. Schools may assign a school psychologist or other professional with expertise

in behavioral assessment and intervention to facilitate the FBA and BIP process (Crone & Horner, 2003). On occasion, schools hire outside behavioral consultants to facilitate the process, particularly when the behavior is extremely severe or the school staff feel ill-equipped to deal with the issues. Schools may also conduct the process through team problem-solving efforts in a school-based behavior support team (McIntosh & Av-Gay, 2007). Benazzi and her colleagues (2006) indicated that a school-based behavior support team is typically comprised of a behavior specialist, with prior training and experience conducting school-based behavioral support, an administrator, a general education teacher, a special education teacher, and teacher aides (as cited in McIntosh & Av-Gay, 2007, p. 43). The behavior specialist often utilizes a behavioral consultation process of service delivery which is rooted in problem solving and is "...based on the strategies and interventions of behavior analysis such as collecting time series data, identifying antecedents and consequences, and implementing treatment plans" (Wilkinson, 1997, p. 256).

Functional Behavioral Assessments and the resulting Behavior Intervention Plans are the standard for dealing with behavior issues in the PreK-12 setting. The National Association of School Psychologists (NASP) offers best practice guidelines to be followed by practicing school psychologists in order to uphold personal and professional ethics within the field ("National," 2005). When students' behavior problems are impeding the learning of themselves or others in a school setting, it is considered best practice to conduct an FBA and BIP (Knoster & McCurdy, 2002). NASP requires practicing school psychologists to use decision making models, such as the FBA process, to "consider the antecedents, consequences, functions, and potential causes of behavioral

problems exhibited by students with disabilities, which may impair learning or socialization" ("National," 2005, p. 44). Conducting an FBA and the resulting BIP on a student who is exhibiting behavioral problems is not only considered by NASP to be best practice, it is also in compliance with the current IDEIA guidelines.

Because Functional Behavior Assessment and Behavior Intervention Planning have proved to be successful in the school setting, the current Individuals with Disabilities Education Improvement Act (IDEIA) (2004) guidelines mandate the use of FBAs and BIPs to address serious problem behaviors of students with disabilities (Yell, Shriner, & Katsiyannis, 2006). Because IDEIA legislation requires FBAs and BIPs for students needing manifestation determinations due to problematic behavior resulting in disciplinary action, this process in the school systems is often used with, and sometimes reserved for, those with emotional and/or behavioral disabilities.

However, several researchers point out that the FBA and BIP process can also be successful on students with other disabilities. Radford and Ervin (2002) conveyed that extensive research has been conducted, and the FBA and BIP process has been proven effective on students with *and without* emotional and behavioral disabilities (as cited in Hieneman, Dunlap, & Kincaid, 2005). The FBA and BIP process has been shown to be successful on children with different genetic syndromes such as Prader Willis Syndrome or Autism in which many of the behaviors displayed by the children are of a repetitive or compulsive nature and in some cases related to environmental sensory stimulation (Reese, Richman, Belomont, & Morse, 2005).

Research shows that FBAs and BIPs are successful for eliminating problem behavior in the short-term (Hawkins & Axelrod, 2008; Hoff, Ervin, & Friman, 2005;

Ingram, Lewis-Palmer, & Sugai, 2005; Stage, Jackson, Moscovitz, Erickson, Thurman, Jessee, & Olson, 2006). However, there is less research showing whether the effects of behavior plans from FBAs have long-term effects on reducing problem behavior and increasing positive behavior. A study conducted by MacLeod, Jones, Somers, and Havey (2001) on the effectiveness of BIPs and a behavioral consultative process supported ". . . a rich foundation of research . . . suggesting that consultant skills, consultation quality, and student outcomes are correlated" (p. 213). Although MacLeod et. al's research and other consultation research suggests short-term positive student outcomes, when discussing the results, MacLeod et. al. note there is little research on the long-term effectiveness of the process (MacLeod et al., 2001). No literature exists on whether future teachers review the BIP, and whether new behaviors the students exhibit are dealt with by the teacher in similar ways as indicated in the BIP. Therefore, it is important to assess the short-term *and long-term* effectiveness of Functional Behavioral Assessment and intervention plans to guide future research and interventions.

Statement of the Problem and Purpose of the Study

Given that the FBA and BIP process is currently the best practice standard for working with children with behavioral issues and there is little research on the short-term and long-term effectiveness of intervention plans for students with cognitive disabilities, the purpose of this single-subject research study is to determine whether an intervention plan based on Functional Behavioral Assessment is effective for a child with a cognitive disability. In addition, this study also examines whether the strategies developed during the FBA and BIP process are still being used one year after initial implementation.

Research Questions

Through behavioral data collection and a single-subject research design, the following questions will be addressed:

1) Does the BIP, developed from the FBA and consultative model, prove to be successful in reducing the target behavior of verbal resistance of the student with a cognitive disability?

2) Does the BIP, developed from the FBA and consultative model, prove to be successful in reducing the target behavior of physical resistance of the student with a cognitive disability?

Through follow-up interviews one year after implementation, the following questions will be addressed:

3) Is the student's current team familiar with the FBA and BIP which was conducted a year earlier?

4) Are the intervention strategies developed from the FBA still being implemented one year after initial implementation?

5) Do the strategies developed from the FBA seem to have a lasting effect on the student's behavior?

Definition of Terms

The following includes a list of frequently used terms throughout this paper that need to be explicitly understood in order to fully comprehend the research:

Antecedents: Events that happen before every behavior that may "set off" the undesirable behavior, such as time of day, certain people, or requests (O'Neill et al., 1997).

Behavioral Consultation: A problem-solving process which occurs in interview format between a consultant and consultee to identify and operationalize the problem, analyze the problem and how it is maintained, develop a treatment plan, and evaluate the effectiveness of the treatment plan (Kratochwill & Van Someren, 1995).

Behavioral Intervention Plan (BIP): A process of identifying positive behavioral strategies that will teach and support appropriate replacement behaviors that make the problem behavior ineffective, irrelevant, and inefficient (Kerr & Nelson, 2006).

Direct Assessment: The use of behavioral observation methods to gather information to determine the antecedent, consequence, and function of the problem behavior (Kerr & Nelson, 2006).

Environmental Condition: Setting events, antecedents, and maintaining consequences surrounding the problem behavior.

Function: The purpose or need that a behavior is fulfilling. Eight functions of behavior include: acceptance or affiliation, attention, power and control, avoid or escape, expression of self, revenge, access to rewards, and sensory or motor input (Kerr & Nelson, 2006).

Functional Behavioral Assessment (FBA): ". . . a set of processes for defining the events in an environment that reliably predict and maintain problem behaviors. Functional assessment can include interviews, rating scales, direct observations, and systematic, experimental analysis of problem situations" (O'Neill et al., 1997, p. 1).

Indirect Assessment: The use of interviews and rating scales to gather information from various sources to develop hypothesis for the functional behavioral assessment (Kerr & Nelson, 2006).

Maintaining Consequences: Events that happen immediately after every behavior and may enforce or reward the behavior, thus serving the function or purpose of the behavior (O'Neill et al., 1997).

Setting Events: Anything in a person's life that may contribute to a display of undesirable behavior, such as medication, life changes, disabilities, and eating routines (O'Neill et al., 1997).

Single-Subject Design: "A wide variety of research designs that use a form of experimental reasoning called baseline logic to demonstrate the effects of the independent variable on the behavior of individual subjects" (Cooper et al., 2007, p. 704).

Summary Statement: Information about the antecedent, consequence, and function of the problem behavior is obtained through interviews and direct observation and organized to form a summary statement or hypothesis of the problem behavior (O'Neill et al., 1997).

Tracking: A technique from the field of play therapy, in which the adult conveys his/her attention to the child by following the child's actions. Tracking can be done either verbally, by stating what the child is doing or saying, or physically, by following the child's movements with your own (Landreth, 2002).

Treatment Acceptability: The consultee's belief that the proposed treatment plan is acceptable (Segool, Brinkman, & Carlson, 2007).

Treatment Adherence: ". . . the willingness of the consultee to carry out the intervention as designed" (Segool et al., 2007, p. 313).

Treatment Integrity: Peterson, Homer, and Wonderlich (1982) define treatment integrity as "The extent to which a treatment plan is implemented as designed. . . " (as cited in Noell et al., 2005, p. 88).

Assumptions and Limitations of the Research

It is assumed that this research will guide future research on the effectiveness of conducting FBAs and developing intervention plans for children with cognitive disabilities. Although this is a single-subject research design and the findings of this study cannot be directly applied to other students with cognitive disabilities who exhibit similar problem behaviors, it is hoped that this research will be expanded upon to guide future research on the effectiveness of using FBAs and BIPs with people with cognitive disabilities.

Chapter II: Literature Review

The purpose of this study is the examine the effectiveness of a Behavior Intervention Plan (BIP) developed from a Functional Behavior Assessment (FBA) during the implementation of the plan and one year after the FBA was conducted. This literature review describes the history and evolution of FBA and BIP process in the schools and explains the FBA and BIP process. Additionally, it offers a discussion of behavioral consultation and the consultation relationship, as well as a discussion of the potential barriers to consultation. And finally, this chapter includes an explanation of the effectiveness of the FBA and BIP process and an analysis of the available literature on the use of FBAs and BIPs with students with cognitive disabilities.

History and Evolution of FBAs and BIPs in the Schools

Functional Behavior Assessment is a procedure in which functions of a target behavior and environmental conditions surrounding the behavior are identified. This assessment process evolved from early behavioral theory and behaviorists such as B.F. Skinner and Ian Pavlov (Sugai, Lewis-Palmer, & Hagan-Burke, 1999-2000). Using highly controlled research designs and a method called behavioral analysis, these early behaviorists examined the impact of the environment on human behavior to describe "learning." Even in these early years, the term "function" was used. In 1953, Skinner wrote in *Science and Human Behavior* (Barnhill, 2005): "Behaviorism is the philosophy of applied behavioral analysis based on a scientific approach to the examination of behavior. Behaviorism maintains that all behavior is a function of the interaction between environmental events and behavior. . . " (Gresham, Watson, & Skinner, 2001, p. 157).

Using the method of behavioral analysis, Carr (1977) and Iwata, Dorsey, Slifer, Bauman, and Richman (1982) studied the functions of the behaviors of individuals with severe handicaps and behavioral problems. These researchers found that by systematically changing the environments of children, they could identify the different functions for similar behaviors across children (as cited in McDougal, Chafouleas, & Waterman 2006).

McDougal, Nastasi, and Chafouleas (2005) explain that this highly experimental research method continued to evolve during the 1980s and 1990s (as cited in McDougal, Chafouleas, & Waterman, 2006). Eventually, the methods of FBAs became more indirect, less complex in nature, and more readily applied to wider and more diverse populations, such as students in school settings (as cited in McDougal, Chafouleas, & Waterman, 2006). Research literature, like that of Dyer, Dunlap, and Winterling (1990) and West and Sloan (1986), on the use of FBAs in schools became more prevalent as the methods were being applied to classrooms to manage difficult behavior (as cited in McDougal, Chafouleas, & Waterman, 2006).

FBAs and BIPs soon became the standard in education for addressing students with difficult problem behaviors. However, it was not until IDEA (1997) that FBAs and BIPs became a federally mandated practice in the schools (Barnhill, 2005). This mandate expanded the use of the procedures. The current legal mandate IDEIA (2004) requires that schools need to create and implement BIPs when ". . . a) as student's behavior impedes his or her own or others ability to learn; b) when behavioral goals on the IEP are not sufficient to address problem behavior; c) prior or subsequent to a manifestation determination meeting. . . and; d) when a student is placed involuntarily into a more

restrictive placement due to behavior" (Cook et al., 2007, p. 192). Although it is mandated by law that the student's IEP team conduct an FBA and a BIP, the steps required to complete the FBA and BIP are not specifically outlined in IDEA (Drasgow & Yell, 2001). Therefore, each state or school district is left to define its own process to conduct FBAs and BIPs.

The Process of Conducting FBAs and BIPs

Currently, a variety of authors have proposed various models of Functional Behavioral Assessments (FBAs) (Fleud, Phaneuf, & Wilczynski, 2005). The authors' descriptions of the FBA and BIP process are similar in nature, but vary in the language used to describe these processes. Authors such as Cipani and Schock (2007), Crone and Horner (2003), McDougal, Chafouleas, and Waterman (2006), and O'Neill et al. (1997) have all created various models of FBAs where they describe the process of conducting FBAs as well as the development of Behavioral Intervention Plans (BIPs).

Summary statements and environmental conditions.

The goal of Functional Behavioral Assessments (FBAs) is to write a summary statement, hypothesis statement, or a problem identification statement (Cipani & Schock, 2007; McDougal et al., 2006; O'Neill et al., 1997; Sugai, Lewis-Palmer, & Hagan-Burke, 1999-2000). This summary statement attempts to describe the interaction between the environment and the behavior in observable and measurable terms in order to show what purpose or function the behavior serves for a child or youth (Crone & Horner, 2003). In addition, FBAs and the resulting summary or hypothesis statements, ". . . improve our understanding of the problem behavior and guide the development of effective, efficient, and relevant BIPs" (Sugai et al., 1999-2000, p. 151). Summary statements include a

description of the environmental conditions which relate to the problem behavior and make it more likely to occur. These environmental conditions include the following: setting events, antecedents, maintaining consequences, and function.

Setting events, distant predictors, or distal setting events are events, activities, or characteristics within the child or within the child's life which contribute to a display of undesirable behavior (McDougal et al., 2006). Setting events do not cause behavior, but ". . . influence whether a particular interpersonal context will evoke problem behavior" (Carr et al., 1997, p. 104). According to Gresham, Watson, and Skinner (2001) and O'Neill et al. (1997), distal setting events are ". . . events that influence negative behavior but are removed in time and place from the behavior's actual occurrence" (as cited in McDougal et al., 2006, p. 25). Setting events usually fall into three separate categories, physiological, physical, and social (Carr et al., 1997). Examples of setting events include the following: medication, life changes, disabilities, and eating routines (O'Neill et al., 1997).

Antecedents are events which immediately precede behavior. Antecedents can be described as the events which "set off" or trigger undesirable behavior (Cipani & Schock, 2007; Crone & Horner, 2003; McDougal et al., 2006; O'Neill et al., 1997). Examples of antecedents include the following: time of day, transitions, certain people, or certain requests.

Maintaining consequences are the events which happen right after behavior and enforce or reward the behavior, thus serving the function or purpose of the behavior (Crone & Horner, 2003; McDougal et al., 2006; O'Neill et al., 1997). The maintaining consequence makes the problem behavior "an effective strategy for obtaining the desired

outcome" for the child (Crone & Horner, 2003, p. 15). Examples of maintaining consequences include the following: receiving attention, escaping from undesirable tasks, or obtaining a desired object.

Assessment procedures.

Several assessment techniques can be used to gain information about the target behavior and environmental conditions so that a summary statement, or hypothesis statement, can be written. Current authors of various FBA models differ in their approach to collecting information to write a summary statement, but most authors agree that a combination of both direct and indirect methods produce the most valid summary statement.

Direct observation involves an observer directly witnessing the problem behavior and recording environmental conditions around the behavior. O'Neill et al. (1997) have created a Functional Assessment Observation (FAO) form which ". . . indicates: a) the number of events of problem behavior, b) the problem, behaviors that occur together, c) the times when problem behavior events are most and least likely to occur, d) events that predict problem behavior, e) perceptions about the maintaining function of problem behaviors, and f) actual consequences following problem behavior events" (as cited in Crone & Horner, 2003, p. 51). McDougal et al. (2006) suggest that the direct observational data should focus on the intensity, duration, and frequency of the problem behavior. They also indicate there are varying methods to collect observational data, but the more rigorous techniques should be reserved for more serious behaviors (McDougal et al., 2006). Cipani and Schock (2007) indicated that for infrequently displayed problem behaviors, a trigger analysis of problem behavior can be conducted. A trigger analysis is

when the suspected antecedent or trigger to a problem behavior is presented to assist in obtaining a percentage of when the problem behavior occurs following the suspected trigger.

Indirect techniques involve documenting information about the behavior and environmental conditions through interviews or report forms. Cipani and Schock (2007) suggest that when interviewing others for information about antecedents, consequences, and functions of target behavior, it is important to interview people who are associated with the child in specific settings, such as parents, staff, and teachers. Kinch, Lewis-Palmer, Hagan-Burke, and Sugai (2001) indicate that students can also be involved in the interview process to glean more detailed information regarding things that influence the problem behavior that may not be readily apparent to parents, teachers, or staff.

Even though most authors outline both direct and indirect methods of assessment, some authors do not agree on specific methods. For example, Crone and Horner (2003) indicate that assessment procedures can be conducted in different ways depending on the severity of problem behavior and the amount of staff involvement. The FBA model presented by Crone and Horner (2003) ". . . discusses three different approaches to FBA: simple functional behavioral assessment; full functional behavioral assessment; and functional analysis....consistent across approaches is an emphasis on problem solving through identification of predictors and consequences of problem behaviors" (p. xii). Crone and Horner (2003) also indicate that direct observation of problem behavior is not necessary for all problem behavior, but more complex or severe behaviors should be observed directly.

Conversely, the FBA model presented by O'Neill et al. (1997) indicates the FBA process should be conducted using informant methods and direct observation. O'Neill additionally proposes methods of functional analysis, in addition to the FBA, specifically if the summary statement cannot be developed using informant methods and direct observation alone. O'Neill et al. (1997) state that direct observation is a necessary part of FBA, unlike Crone and Horner (2003) who suggest direct observation is optional.

Identification of function.

All behavior is purposeful and fulfills a function or need for the child. Functions are purposes for displaying a behavior, including obtaining something, getting attention, or escaping a situation or a person (Carr et al., 1997; Crone & Horner, 2003; McDougal et al., 2006; O'Neill et al., 1997). From identifying the setting events, antecedents, and maintaining consequences of a problem behavior, the summary statement makes a determination of the function the behavior is serving for the subject. Different authors have proposed different systems of classifying function.

O'Neill et. al.'s (1997) system for classifying functions is quite simple. O'Neill believed that all behaviors serve two distinct functions, to *obtain* something desirable such as attention or access to desired objects or activities, or to *avoid and escape* something undesirable such as attention, activities, or tasks.

The FBA model developed by Cipani et al. (2007) categorizes functions using a function-based diagnostic classification system, which is much more complex than the O'Neill et. al. approach. The model delineates four categories of functions: direct access, socially mediated access, direct escape, and socially mediated escape. Each of the four categories is then broken down into sub-categories containing the reinforcement

properties from each broad category. The first category, direct access, is access to positive reinforcement, and the subcategories are access to immediate sensory stimuli, such as ritualistic behaviors, and access to a direct chain to tangible reinforcers, such as access to food or toys. The second category, socially mediated access, ". . . produces a positive reinforcer indirectly, through the behavior of another person" and the subcategories are access to adult attention, access to peer attention, and the tangible reinforcer hypothesis where the child is given the desired item and also receives adult attention simultaneously (Cipani et al., 2007, p. 104). The third category, direct escape, ". . . remove or avoid aversive events directly" and the subcategories are escape from unpleasant social situations, escape from a relatively lengthy task, chore, or instruction, escape from a relatively difficult task, chore, or instruction, and escape from aversive physical stimuli (Cipani et al., 2007, p. 104). The fourth category, socially mediated escape, ". . . remove or avoid aversive events or conditions indirectly, through the mediation of another person's behavior" and the subcategories are escape of unpleasant social situations, escape from relatively lengthy task, chore, or instruction, escape from relatively difficult task, chore, or instruction, and escape from aversive physical stimuli or an event (Cipani et al., 2007, p. 104).

Development of the behavior intervention plan (BIP).

After a summary statement is written, a BIP is developed and includes strategies for reducing the problem behavior and increasing positive behaviors. Like procedures of for FBA, procedures for developing BIPs also differ by authors.

Many authors suggest using a competing behavior model before the actual plan is written. Competing behavior models are developed by manipulating the summary

statement to identify a replacement behavior, or a competing behavior, and a desired behavior (Cipani et al., 2007; Crone & Horner, 2003; McDougal et al., 2006; O'Neill et al., 1997). The replacement behavior is incompatible with the problem behavior, but serves the same function as the problem behavior does for the child. The replacement behavior is not always the most desirable behavior, but is an acceptable alternative behavior the child can use to meet their needs. The desired behavior included in the competing behavior model is the behavior that people would like to see the child perform instead of the problem or replacement behavior.

After the competing behavior model is developed, strategies are then brainstormed. The summary statement and competing behavior model are used as guides when formulating different types of strategies, which include the following: setting event strategies, antecedent strategies, teaching strategies, and consequence strategies.

Setting events strategies and antecedent strategies work by reducing the events which trigger the behavior, therefore making the behavior irrelevant (Crone & Horner, 2003; McDougal et al., 2006; O'Neill et al., 1997) For example, Crone and Horner suggest that if the antecedent to the problem behavior is requests for work, a strategy may be to offer a child choices for what work they are allowed to do, thus reducing the chance that the problem behavior would be exhibited.

Teaching strategies make the problem behavior inefficient by teaching the student better, more appropriate, and more efficient ways to get their needs and functions met. Many of the teaching strategies focus on the child's skill deficits in the areas of communication, academics, or behavior (McDougal et al., 2006). Communication skill deficit training could include teaching a child nonverbal and verbal ways to express their

needs. Academic skill deficit training could include teaching a student reading strategies to help them become a better and more fluent reader. Behavior skill deficit training could include social skills or anger management training. These strategies must be taught to the student or school personnel.

Consequence strategies involve making the problem behavior ineffective by eliminating the maintaining consequences that reinforce the behavior (Crone & Horner, 2003; McDougal et al., 2006; O'Neill et al., 1997). For example, Crone and Horner suggest that if the problem behavior of a child whining for a cookie before lunch is maintained by the consequence of the child's teacher giving in to the whining and giving the child a cookie, the child learns that the behavior of whining is effective for getting a cookie. In order to make the behavior of whining ineffective, a consequence strategy would be to not give in to whining. McDougal et al. (2006) also suggest that if a child is engaging in a behavior for attention, a consequence strategy would be to implement planned ignoring of the problem behavior, thus making the problem behavior ineffective for achieving attention.

From this brainstormed list, a formal behavior intervention plan (BIP) is written (Crone & Horner, 2003). The behavior intervention plan includes documentation of who will implement what strategies and how the strategies will be implemented. Crone and Horner suggest discussing the BIP with the student, to inform them of the goals and rewards of the plan as well as expectations. After the BIP is written and discussed with the team, the BIP is implemented. If the problem behavior is not reduced by the implementation of the BIP, the plan is then reformulated, implemented, and reevaluated until the problem behavior decreases.

Behavioral Consultation in the FBA Process

Behavioral consultation is a problem-solving process which occurs in interview format between a consultant and consultee(s) to identify and operationalize the problem, analyze the problem and how it is maintained, develop a treatment plan, and evaluate the effectiveness of the treatment plan (Kratochwill & Van Someren, 1995). Schools may conduct the FBA and BIP process through behavioral consultation and team problem-solving efforts in a school-based behavior support team (McIntosh & Av-Gay, 2007).

There are several reasons why behavioral consultation is used to support the FBA and BIP process. Kataoka, Zhang, and Wells (2002) and Meyers and Nastasi (1999) indicate that increasingly in education, interventions are being implemented through indirect service models, such as behavioral consultation, due to the large need for assistance and the lack of professionals able to address this need (as cited in Segool, Brinkman & Carlson, 2007). In addition, recent educational mandates such as No Child Left Behind are requiring ". . . educational practitioners to use instructional techniques that have research-based support" (Segool et al., 2007, p. 310). School-based behavioral consultation is also supported by a large volume of literature to be connected to positive improvements in student's academic achievement as well as their social behavior (MacLeod, Jones, Somers & Havey, 2001). Therefore, implementing the FBA and BIP process through behavioral consultation can be an efficient and effective method of service delivery to implement scientifically research-based interventions and evaluate the effectiveness of those interventions.

The behavioral consultation model developed by Bergan (1977) and later revised by Bergan and Kratochwill (1990) is widely used in the field of psychology (Segool et al,

2007). Bergan and Kratochwill's behavioral consultation model delineates four stages of consultation that are conducted through interviews between the consultant and consultee and include phases of intervention and assessment throughout the consultation.

The first stage in behavioral consultation is the problem identification stage where the goal is to select and define the problem in observable and measurable terms through the use of a problem identification interview. After the problem identification interview has taken place, the consultee is required to collect baseline data on the frequency, severity, duration, antecedents, and consequences of the problem behavior to aid in developing a summary statement of the problem behavior which is defined during the second stage of consultation (Watson & Robinson, 1996).

The second stage in behavioral consultation is problem analysis (Segool et al, 2007), which is consistent with FBA. In the problem analysis stage, the consultant and consultee usually complete a problem analysis interview where the information on the problem behavior that the consultee collected through observation is analyzed to ". . . determine what the functional relationship is between the behavior, its antecedents, and its consequences" (Segool et al., 2007, p. 312). This information is then used by the consultant to develop a summary statement or hypothesis of the problem behavior which is used to develop the Behavioral Intervention Plan (BIP).

The third stage of behavioral consultation is the treatment implementation stage (Segool et al., 2007). The consultee is required to implement the BIP with the assistance of the consultant (Watson & Robinson, 1996). During this stage, the consultee frequently monitors the problem behavior of the subject to determine if the BIP is working in reducing the problem behavior, or if the BIP needs to be revised (Segool et al., 2007).

The fourth stage of behavior consultation is the treatment evaluation stage. In this stage, the consultant completes a treatment evaluation interview with the consultee to assess effectiveness of the BIP and to determine if the consultation process met the initial goal of the consultee. At this time, the intervention data is compared with the baseline data to determine if the problem behavior was successfully reduced or extinguished. "If the goals of consultation have been met, the behavioral consultation process and the intervention may be terminated; however, if the goals have not been met or new problems have emerged, the process typically reverts back to the problem analysis stage" (Segool et al., 2007, p. 312).

Team-based consultation.

Crone and Horner (2003) suggest a team-based approach to consultation should be used in the schools due to the dynamic nature of staff's roles and responsibilities. Todd et al. (1999) purports that a critical element of a behavior support team is that the team includes a member(s) who "...possess specialized behavioral skills" (as cited in Crone & Horner, 2003). Crone and Horner presented a two tiered behavior support team model consisting of a Core Team and an Action Team. The Core Team members include a school principal or administrator, school staff, and someone who as behavioral expertise who serves as the consultant. The Core Team is responsible for managing the FBA/BSP process and guiding the design, evaluation, and modification of the plan. The Action Team members include members of the Core Team, parents and teachers of the referred child, and other significant people. The Action Team collects the data and leads the design and implementation of the BIP. In this team-based model, the core team acts in

the consultation role to guide those who are actually involved with the plan, just as the Bergan and Kratochwill (1990) model outlines (as cited in Segool et al., 2007).

Treatment integrity.

The success of the consultation process depends on whether or not barriers are present that affect the success of consultation. Caplan (1970) explains that barriers to consultation can include the consultee lacking the knowledge, resources, skills, self-confidence and objectivity to effectively engage in consultation (as cited in Maital, 1996, p. 292). Other barriers to consultation can include a consultee's lack of treatment acceptability, treatment integrity, and treatment adherence (Segool et al., 2007).

Treatment integrity or fidelity as described by Peterson, Homer and Wonderlich (1982) is "The extent to which a treatment plan is implemented as designed. . . " (as cited in, Noell et. al., 2005, p. 88). Treatment adherence is, ". . . the willingness of the consultee to carry out the intervention as designed" (Segool et al., 2007, p. 313). Treatment acceptability refers to the consultee's belief that the proposed treatment plan is acceptable (Segool et al., 2007). The consultee's belief of treatment acceptability can be affected by how complex the intervention plan is, how effective the consultee believes the plan will be, and how knowledgeable the consultee is about implementation of the plan (Gable, Hendrickson, Van Acker, 2001). Gable et al. suggest that the level of complexity of the plan is directly related to treatment integrity in that if a plan is too complex, the treatment integrity will suffer. If the consultee does not adhere to the treatment and implement it with integrity, the treatment will probably not be effective.

Gresham (1989) indicated that "Many failures in consultation and interventions probably can be attributed to the fact that intervention plans are not implemented as

intended (as cited in Wilkinson, 2007, p. 421). Therefore, it is important that the consultant takes steps to ensure the consultee implements the BIP with integrity to assure a higher probability for treatment success. In addition, Gresham (1999) and Gutkin (1993) indicate it is also important the consultant consistently monitor treatment integrity to discern if the treatment was ineffective or effective, but implemented without treatment integrity (as cited in Wilkinson, 2007).

Research on the Effectiveness of the FBA-BIP Process

Current research indicates that FBAs and BIPs are successful in eliminating problem behavior in the short-term. A significant body of literature indicates positive effects of the FBA and BIP process. Several of these studies are outlined below.

Because of the difficulty in methodology required when determining behavior change, many researchers use a single-subject design. A study conducted by Luiselli and Murbach (2002) indicated that a student's problem behavior was absent one month after initial implementation of the BIP. Hoff, Ervin, and Friman (2005) also found that the FBA/BIP process was successful with a child with ADHD/ODD in reducing their disruptive behavior from 49.9% of the intervals to 2.3% of the intervals.

Studies which use a similar methodology, but in small groups of subjects, show similar positive effects. In a study conducted by Ingram, Lewis-Palmer, and Sugai (2005), intervention plans based on FBA were more effective than intervention plans not based on FBA in lowering rates of problem behaviors exhibited by two middle school students. Similarly, a study was conducted by Hawkins and Axelrod (2008) on 4 males ages 11 to 16 who engaged in off-task behavior. The baseline data collection phase was four days for all four males, and the intervention data collection phase was 12 days for

three of the males, and 16 days for one male. During the intervention phase, it was found that levels of on-task behavior increased for all participants, suggesting that the use of FBAs to develop intervention plans is successful in producing short-term effects on problem behavior. A study conducted by Stage et al. (2006) found that FBAs could be conducted successfully in school settings using a consultative model and that the BIPs were successful in two out of three cases in reducing problem behavior.

All of these studies show that FBA/BIP process is successful for producing short-term positive effects on problem behavior. However, there is little to no literature examining whether the behavior change from the BIP produced new patterns of behavior over the long term.

The use of FBAs and BIPs with Students with Cognitive Disabilities

The literature regarding the effectiveness of FBAs and BIPs for students with emotional and behavioral issues in the schools is plentiful. This likely results from the IDEIA mandates which requires FBAs when disciplinary action is taken toward a student. Research on the effectiveness of conducting FBAs and BIPs on children with cognitive disabilities has largely been completed in controlled settings, instead of schools. The body of literature which is available has demonstrated the effectiveness of using FBAs and BIPs on challenging behaviors exhibited by students with cognitive disabilities.

A case study by Luiselli and Murbach (2002) evaluated an antecedent intervention to deal with tantrum behavior displayed by a five-year-old girl with cognitive, language, and motor challenges. After a review of the baseline data collected on the child's tantrums, it was hypothesized that the tantrums were present when teachers

familiar to the child were demanding work from her. The intervention used to eliminate the tantrum behavior was to have "novel staff" conduct instruction when work was to be demanded from the child (p. 1). After the implementation of the intervention, it was found that the girl's tantrum behavior was eliminated and continued to be absent a month after the initial introduction of the intervention. It was also found that the staff involved in the intervention rated it to be highly effective.

Piazza, Contrucci, Hanley, and Fisher (1997) found that nondirective prompting and noncontingent reinforcement was effective in reducing the escape-motivated behavior of an eight-year-old girl with mental retardation. In addition, Coleman and Holmes (1998) found that the use of noncontingent reinforcement was effective in reducing the disruptive behavior in three preschool-aged children diagnosed with pervasive developmental delays.

Many behavioral problems in educational settings are exhibited by students who wish to escape from a task that may be too difficult or confusing for them to complete. These behaviors are called escape-motivated behaviors and may be effectively used by a child to escape a task by exhibiting tantrum behavior (Luiselli & Murbach, 2002). If a child employs an escape-motivated behavior during a school work activity and the task is stopped, the child's behavior will be "reinforced negatively through the consequence of activity termination" (Luiselli & Murbach, 2002, p. 2). Escape-motivated behavior can be difficult to extinguish, but a variety of interventions have been proven to be successful in reducing or eliminating escape-motivated behavior (Luiselli & Murbach, 2002).

Behavioral problems in students with severe disabilities also may be caused by a desire to communicate. The student may not have the ability to speak in sentences or

phrases to achieve the desired interaction, attention, item, or activity and uses inappropriate behavior as a means to receive what they want (Bopp, Brown, & Mirenda, 2004). Functional communication training (FCT) is an intervention that is designed to teach students who have limited communication skills how to communicate in a socially acceptable manner to replace unacceptable means of communication. In order for FCT to be effective, the socially acceptable communication skills must match the function of the child's behavior. For example, if a child with minimal verbal skills uses screaming as a way to obtain attention, then the socially acceptable alternative taught to the child must signal a need for attention. Also, if a child uses screaming as a way to obtain more than one desired item or activity, then a socially acceptable alternative must be taught to the child for each desired item or activity. The effectiveness of FCT is also impacted by the type of replacement communication and how much physical effort is involved in producing it. For example, Richman, Wacker, and Winborn (2001) taught a three-year-old boy with pervasive development disorder how to use both a communication card and a manual sign for "please" to ask for a toy instead of using aggression (as cited in Bopp, Brown, & Mirenda, 2004). In order for the boy to use the manual sign, he just had to turn towards his mother and make the sign. When he used the communication card, he had to pick it up and give it to his mother, thus expending more physical effort. Richman et al. (2001) found that when both communication options were available to the boy, he would always choose the manual sign, thus expending less physical effort.

Horner and Budd (1985) completed an FBA on a child with autism and found that he was yelling and grabbing in order to get items or partake in activities in the classroom (as cited in Bopp, Brown, & Mirenda, 2004). FCT was included as a part of the child's

BIP, and he was taught five manual signs to request specific items he wished to obtain. The implementation of the BIP resulted in a significant decrease in the child's aggressive behaviors and an increase in his manual sign usage. Similarly, Carr and Durand (1985) completed an FBA on four children with developmental disabilities who were displaying aggressive and disruptive behaviors in the classroom in order to receive teacher attention or escape from difficult tasks (as cited in Bopp, Brown, & Mirenda, 2004). FCT was also included as a part of the children's BIP, and they were taught two phrases to receive teacher attention or escape from tasks. The implementation of the BIP resulted in substantially lower rates of aggressive and disruptive behaviors and an increased rate of the phrase usage.

Summary

Schools are mandated by law to complete FBAs and BIPs on students with disabilities who are exhibiting behavioral problems that affect their learning and the learning of the students around them. Due to the increasing need for FBAs and BIPs in the schools, a consultative approach is often used to accomplish this process. FBAs and BIPs have been proven successful in reducing the problem behavior of students with disabilities. Research on using the FBA and BIP process with students with cognitive disabilities shows it to be effective with this population. The research is especially positive for students with cognitive disabilities who may not have the language ability to communicate and uses acting out as a means to get what he or she wants. However, limited research has investigated the long term utilization and effects of FBAs and BIPs on children within a school setting.

Chapter III: Methodology

The purpose of this study was to determine whether interventions based on an FBA prove to be successful for a child with a cognitive disability. In addition, this study also examined the implementation of the BIP strategies one year after initial implementation. This chapter will explain the methodology of the single-subject research design, including a discussion of the participant who was selected for this study, the instrumentation and data collection, and the data analysis. In addition, the chapter explains the how the qualitative data was collected to assess the long-term effects as part of the follow-up study.

Subject Selection and Description

The selected subject attended an elementary school in a small rural community in western Wisconsin. The school district selected the subject because she exhibited behavioral problems in the classroom. The school district decided to complete a Functional Behavioral Assessment and include the principle investigator and her research advisor on the team to act as behavioral consultants to the team. Neither the principal investigator or research advisor was an employee of the district, but instead, the research advisor was hired as an outside consultant for this particular case. Written permission was obtained from the school district, the subject's mother, and the University of Wisconsin-Stout's Institutional Review Board before the study was conducted.

At the time of the single subject design portion of the study, the subject was a 10-year-old female diagnosed with cerebral palsy, epilepsy, periventricular leukomalacia, and a cognitive disability. The subject had a 9-year-old brother who also had a cognitive disability and a 16-year-old sister who was rarely at the home. The subject and her

brother were cared for at home on a weekly basis by different personal care attendants. In addition, both were in the same classroom and had the same special education teacher. The subject was selected because her problem behaviors were exhibited in the school, which were reported to be the following: hitting, biting, eating various items, throwing items, screaming, crying, and whining.

A record review and parent report indicated that the subject's functioning had been stagnant in some areas and regressing in other areas during the last three years. In the past, she had a vocabulary of approximately ten words, was receptive to verbal exchanges, and could walk with a walker and assistance approximately 100 feet. At the time of the single-subject research design, the subject's vocabulary continued to be approximately ten words, she did not appear to be receptive to verbal exchanges except for where and what questions, and she continued to be walking with a walker and assistance up to 100 feet. The subject's IEP and present level of functioning were described as the following during the single-subject research design:

IEP Goal:

1) The subject will type her first name and numbers 0-9 with a single finger touch with the computer 100% of the time. Functioning level: The subject showed no interest in typing on the computer.

IEP Goal:

2) Given her walker and stand by assistance, the subject will walk a distance up to 100 feet and transition in and out of chairs 100% of the time. The subject walked with minimal assistance 100% of the time up to 100 feet and can transition in and out of her chair with assistance.

IEP Goal:

3) Given a washcloth, garbage can, adaptive silverware, and stand by assistance, the subject will complete the mealtime routine independently. The subject tended to throw food or drinks during meals. She ate with her fingers, and refused to use the adaptive silverware. When the subject was given the chance to wash or throw her garbage away, she often reacted with inappropriate behavior.

Research Design, Instrumentation, and Data Collection

The subject's most problematic behaviors were operationalized as target behaviors. To aid in defining the problem behavior, a cumulative record review, parent interview, and teacher interview were completed by the investigator to gain in depth information about the subject's medical, educational, and emotional history. All the information obtained from the cumulative record review and the parent and teacher interviews was compiled and analyzed to operationally define the problem behavior. Two behaviors were identified as target behaviors: verbal resistance and physical resistance. Verbal resistance included any of the following: screaming, fussing, or whining. Physical resistance included any of the following: hitting, throwing, biting, or eating objects.

In order to measure these target behaviors, interval recording forms were developed (see Appendix A) (Kerr & Nelson, 2006). Interval recording was selected because the teacher interviews indicated the target behaviors occurred very frequently. Interval recording allowed school staff to observe during a specified period for the presence or absence of a behavior. The observation period is broken into smaller time segments or intervals where the observer simply marks the interval for the presence of the behavior during the interval segment (Kerr & Nelson, 2006). For the single-subject

research design, the researcher broke each observation period into a series of five minute intervals, and the presence or absence of the target behaviors were recorded for each interval. Therefore, the investigator was able to determine the frequency of intervals in which the target behaviors were present.

The researcher and school team used an alternating treatment design (Cooper et al., 2007). This design is also known as an "ABC" design. "A" represents the baseline phase where measurements of the target behaviors were assessed prior to intervention. The baseline phase was one week; and, during this week, the subject was observed on different days throughout the week from 7:45-9:45 am or from 12:00-2:00 pm to record the presence of the problem behavior using interval recording observation forms (Kerr & Nelson, 2006). The observation timeslots in the morning and afternoon were chosen because the subject was exhibiting high levels of problem behavior during those times and the subject's brother was also present at that time. The length of observation periods varied throughout the study. Table 1 below shows the observation lengths for each day during the baseline phase. In addition, the observation was either conducted by school staff or the primary researcher. Because of the differing lengths in observation periods, for visual analysis, percentages were calculated instead of using the total number of intervals containing target behaviors. See a discussion of how percentages were calculated below in the *Data Analysis* section. While baseline was established, an FBA was also being conducted (see *FBA and BIP* below).

Table 1

Observation Lengths of Baseline Phase

Date	No. minutes	No. 5 minute Intervals	Observer
1/8/07	120	24	Researcher
1/10/07	75	17	Staff
1/11/07	240	48	Researcher
1/12/07	240	48	Staff
1/15/07	240	48	Staff

After the completion of both the baseline measurement and FBA, a BIP was developed for the child from the summary statement of the FBA. In this alternating treatment research design, "B" represents the first phase of intervention using the strategies documented in the BIP. During this first phase of intervention, measurement of the problematic behavior continued to be recorded using interval recording in observation periods from 7:45-9:45 am or from 12:00-2:00 for six weeks. Again, the length of observation periods varied throughout this phase. Table 2 below shows the observation lengths for each day for the "B" phase.

Table 2

Observation Lengths of "B" Phase

Date	No. minutes	No. 5 minute Intervals	Observer
1/31/07	240	48	Staff
2/6/07	240	48	Staff/Researcher
2/8/07	240	48	Staff
2/12/07	240	48	Staff
2/20/07	240	48	Staff/Researcher
2/22/07	220	44	Staff
2/28/07	50	10	Staff
3/13/07	120	24	Researcher

After six weeks, the plan was then reviewed and modified. After the BIP was modified, the team entered the "C" phase, representing the second intervention phase with modification. Again, measurement of the target behaviors continued to be collected in the "C" phase using interval recording in observation periods from 7:45-9:45 am or from 12:00-2:00. Data continued to be collected for three weeks during this "C" phase. Table 3 below shows the observation lengths for each day for the "C" phase. Once all data from the "A," "B," and "C" phases was collected it was analyzed (see *Data Analysis* below).

Table 3

Observation Lengths of "C" Phase

Date	No. minutes	No. 5 minute Intervals	Observer
3/21/07	220	44	Staff
3/27/07	240	48	Staff/Researcher
3/29/07	240	48	Staff
4/3/07	240	48	Staff
4/5/07	240	48	Staff

FBA and BIP

Several assessment techniques were used for the FBA. Indirect measures included a parent (see Appendix B) and teacher interview (see Appendix C), which were modified from the O'Neill et al. (1997) Functional Assessment Interview form. The parent interview included questions related to the child's background information, setting events, and general parenting questions (O'Neill et al.). The parent interview also included questions on the child's behavior, triggers, and maintainers. The teacher interview included questions related to the teacher's impressions of the child's behavior, how severe it was, and how often it happened. The teacher interview also included questions on trigger events, maintaining consequences, and the suspected function of the child's problem behavior.

Direct assessment techniques for the FBA included an analysis of the interval recording for the baseline data (see Appendix D). In addition to recording the presence or absence of the target behaviors, the observers also recorded what was happening in the

environment when the behaviors occurred (antecedents) and what happened after the behavior occurred (maintaining consequences). Recording antecedents and consequences of a behavior as it is present is called Antecedent-Behavior-Consequence (ABC) recording (O'Neill et al., 1997). This data can then be used to analyze the behavior's function.

Once the interviews and baseline data were analyzed, the principle investigator and the school district team developed a summary statement of the problem behavior that included information about the antecedents, maintaining consequences, and functions of the problem behavior. The summary statement, in chart format, can be found in Appendix E. Setting events for the subject included her diagnosis, a lack of sleep at night, medication, language processing difficulties, and her attachment to her brother. The antecedents to the subject's problem behavior were proximity to school, the first hour of school, teacher's requests for her to work, separation from her brother, desire for interaction, and transitioning. The consequences to the subject's problem behavior were that she could listen to music, play with the toys she wanted to, the required work was put away, and she received the interaction she desired. The functions of the subject's problem behavior were that she was then allowed to avoid or escape undesirable tasks to obtain desirable tasks, and she was trying to express herself which resulted in her obtaining the desired attention or acceptance that she wanted.

The summary statement and all of the information obtained from the FBA was then used by the principle investigator and the school district team to develop a Behavioral Intervention Plan (BIP) to reduce the frequency of the occurring problem behavior. When developing the BIP, the principle investigator manipulated the summary

statement to form a competing behavior model that included a replacement behavior that was incompatible with the problem behavior, but served the same functions (Crone & Horner, 2003; Cipani et al., 2007; McDougal et al., 2006; O'Neill et al., 1997). The competing behavior model can be found in Appendix F. Because one of the functions of the subject's problem behavior was to escape or avoid undesirable tasks such as school work, and school work is required, the replacement behavior chosen was to give the subject two activity choices. The subject was required to work five minutes on an activity of her choice and was then rewarded with a treat or a book she enjoyed. The other function of the subject's problem behavior was that she was attempting to receive the interaction she desired. A replacement behavior was to give the subject the words for what she was attempting to communicate by "tracking" her actions (Landreth, 2002). Tracking is a technique from the field of play therapy, in which the adult conveys his/her attention to the child by following the child's actions. Tracking can be done either verbally, by stating what the child is doing or saying, or physically, by following the child's movements with your own.

Using the summary statement and competing behavior model, strategies were then developed for the setting events, antecedents, and consequences that would make the problem behavior irrelevant, inefficient, and ineffective (Crone & Horner, 2003). The strategies that needed a script or a written procedure were written as the key routines. The replacement behavior, strategies, and key routines were then combined and written to form the BIP (see Appendix G). Selected strategies were as follows:

1) The subject was given a picture schedule to prompt her to her activities that were presented in a "first work, then reward" format.

2) The subject was given two activity choices during work time.
3) The subject was transitioned out of the room to take a walk or run an errand before her brother was to leave the room.
4) The subject did her work at a table in the corner to decrease distractions and avoid table tipping.
5) The subject received a time-out when the problem behavior would not cease.

After 6 weeks of the first implementation of the BIP in phase "B," the plan was reviewed and modified for phase "C" of the intervention (see Appendix H). Changes in the modified BIP include: the subject was required to work for 7 minutes instead of the previous 5, the tasks were broken into smaller segments in which the subject was rewarded for completing each segment of the task, and a different paraprofessional was assigned to feed the subject lunch because the subject was presenting the problem behaviors with the previous paraprofessional. With the initial implementation of the BIP, the subject's classroom staff was inconsistent in their efforts with the subject. Therefore, the BIP was revised in order to ensure staff consistency with the subject.

Data Analysis

Interval recording data in all three phases was graphed using Microsoft Excel. For each day, the percentage of intervals containing each target behavior was calculated and plotted. For example, if there were 24 five-minute intervals in an observation period, and 10 of those showed the target behavior, then the percentage for that day was determined to be 42% and that number was plotted on the graph. These raw numbers were converted to percentages because school staff were inconsistent about the length of the observation periods. The observation periods ranged from 50 minutes to 2 hours, but the intervals

were consistently five minutes in length. Once the data was graphed, the method of visual analysis could be used to determine change in the presence of the target behaviors.

Although numerous statistical methods are available for use with single-subject research designs, visual analysis is currently the most common (Cooper et al., 2007). Visual analysis is one of the most commonly used methods for various reasons. Baer found that visual inspection produces lower incidences of Type I and Type II errors (as cited in Cooper et al., 2007). Visual analysis allows an observer to determine if the behavior has increased or decreased, unlike other statistically methods that only tell you if the behavior change was statistically significant (Cooper et al., 2007). Visual analysis also allows more flexibility in the experimental design because it does not use statistical analysis which require data sets to "conform to predetermined criteria," therefore leaving no room for flexibility in the research design (Cooper et al., 2007, p. 250).

The visual analysis technique of *trend lines* was also used. By using trend lines on a graph, the direction and degree of the trend in multiple data points can be visually represented by adding a strait line through the data (Cooper et al., 2007). For this case, an overall trend line was drawn in from the first data point in baseline to the final data point in phase "C." This trend line was used to determine overall direction and degree of change.

A second visual analysis technique of *mean level lines* were used for the three different phases of this treatment design. Mean level lines are horizontal lines that are drawn through data points to compare the overall average level between conditions or phases of the treatment design (Cooper et al., 2007). Mean level lines allow for a visual representation of the average level of displayed behavior to determine whether there has

been a change in the level. Results from the visual analysis are described in the next chapter.

Parent & Teacher Follow-Up Interviews

One year after the consultation process was complete, parent and teacher follow-up interviews were conducted to gain qualitative information about the long-term effects of the FBA-BIP process. The follow-up interviews were conducted to determine if the intervention strategies developed from the FBA were still implemented one year after initial implementation, if the subject's current team was familiar with the FBA and BIP conducted one year earlier, and if the strategies developed from the FBA seemed to have a lasting effect on the student's behavior.

The follow-up interview completed by the subject's parent consisted of five questions (see Appendix I). The first question asked what behaviors the child displayed that were most problematic at the follow-up period. The second question asked if the parent was aware of any type of intervention plan currently being used with the child in the classroom. If a plan was being used, the parent was asked if any of the same strategies used last year were still being used to reduce the subject's verbal and physical aggression. The third question asked if the child had any behavioral problems at school within the present school year; and, if so, the type of behavioral problems. The fourth question asked if the parent's child had not been having any behavioral problems at school of verbal or physical aggression, what the parent thought caused the improvement. The fifth question asked how the parent felt about the intervention process during the last school year.

The follow-up interview with the subject's teacher consisted of 6 questions (see Appendix J). It is important to note that the subject did move to the middle school during the school year of the follow-up interviews. Therefore, the teacher was new to the student and was not involved with the behavioral consultation and FBA-BIP process the previous year. The first question of the interview asked what current problematic behaviors the subject presented. The second question asked if the teacher had reviewed the intervention plan utilized last year. The third question asked, if the teacher reviewed the intervention plan from last year, at what time of the year did the teacher review it, prior to the student starting, after the student started, or when the student started to exhibit difficult behavior. The fourth question asked, if the teacher did review the plan, if the teacher was currently using any of the strategies which were developed for the student last year to reduce the student's verbal and physical aggression. The fifth question asked, if the teacher was not using the plan, what intervention strategies were currently used with the student in the classroom, for what particular behaviors, and what the current plan involved. The sixth question asked, if the teacher was not using the plan, if the teacher would mind if the examiner reviewed the prior plan's strategies with the teacher to see if any of the strategies were implemented without a review of the plan.

The interview questions were developed to obtain qualitative information about the long-term effects of the single-subject research design. The questions on the parent and teacher reports assessed if the intervention strategies developed from the FBA were beneficial to the teacher and subject one-year after implementation, if the subject's team was familiar with the contents of the FBA and BIP conducted one year earlier, and if

these strategies developed from the FBA had a lasting effect on the subject's behavior one year after initial implementation.

Chapter IV: Results

The purpose of this study was to determine whether an intervention, based on an FBA, proved effective for a child with a cognitive disability. In addition, this study also examined the effects of the FBA and BIP one year after initial implementation. This chapter will outline results of the visual analysis for the two problem behaviors: verbal resistance and physical resistance. A discussion of the results from the parent and teacher follow-up interviews will follow.

Visual Analysis of Verbal Resistance/Mean Levels

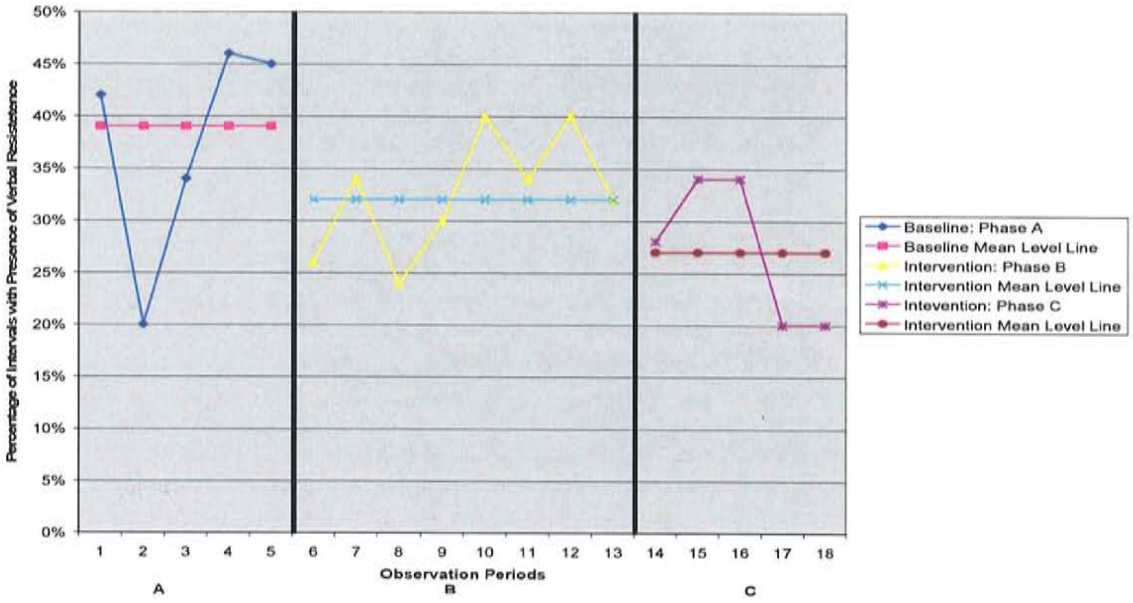
Using the techniques of visual analysis, specifically mean level lines, the data collected on the problem behavior of verbal resistance was analyzed (see Figure 1). Percentage of intervals containing the target behavior was calculated for each day, and then an average for the research phase was determined. Mean level lines were drawn through the data points of each phase in the research design. The mean level line for the baseline phase was at 39%. This indicates that, on average, 39% of the 5-minute intervals during baseline contained verbal resistance.

The mean level line for phase "B," the first intervention phase, was at 32%. This indicates that, on average, 32% of the intervals during the first intervention phase contained verbal resistance. Once intervention started, there was a 7% drop in the number of intervals containing verbal resistance compared to the baseline period.

The mean level line for phase "C," the second intervention phase, was at 27%. This indicates that, on average, 27% of the intervals during the second intervention phase contained verbal resistance. After the plan was modified, there was a further 5% decrease

of intervals containing verbal resistance. Further, when compared to baseline, an overall 12% decrease of intervals containing verbal resistance occurred.

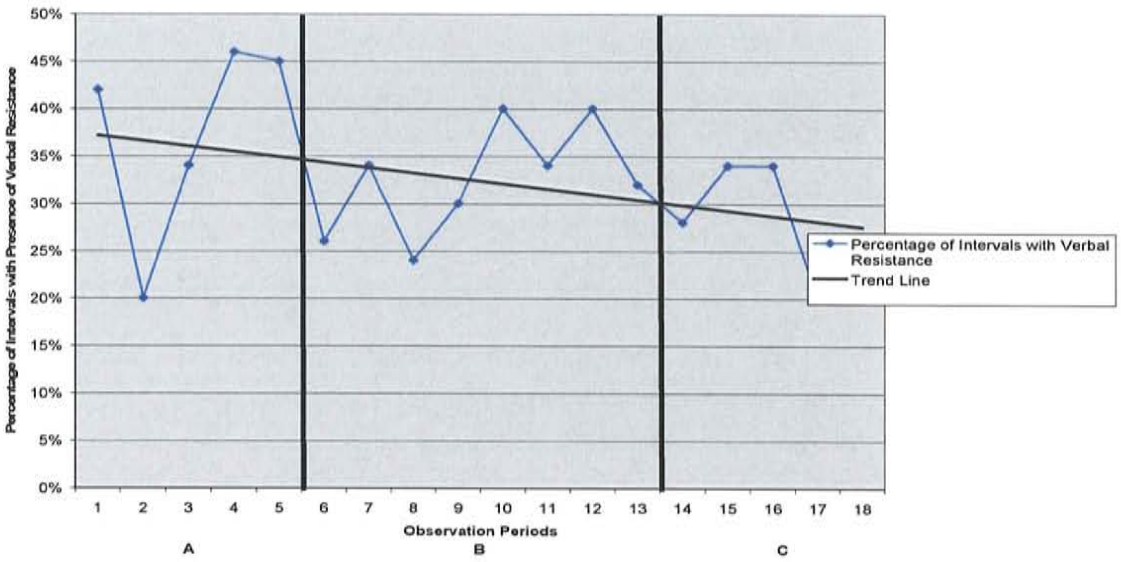
Figure 1. Visual analysis of verbal resistance: Mean level lines



Visual Analysis of Verbal Resistance/Trend

Using the technique of visual analysis, specifically trend lines, the data collected on the problem behavior of verbal resistance was analyzed (see Figure 2). To determine the overall direction and degree of change, an overall trend line was calculated using Microsoft Excel. The direction of the trend line was negative, indicating an overall trend of decreasing verbal resistance. As shown in Figure 2, the degree of change was approximately 9% from the baseline period to the final phase of the intervention.

Figure 2. Visual analysis of verbal resistance: Trend line



Visual Analysis of Physical Resistance/Mean Levels

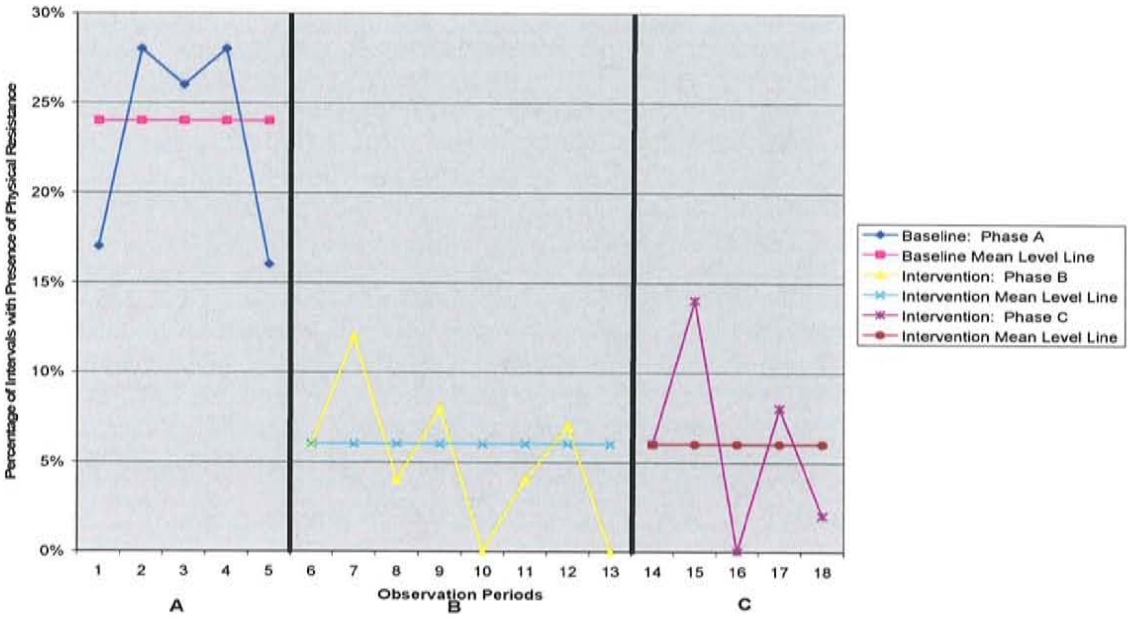
Using the techniques of visual analysis, specifically mean level lines, the physical resistance data were analyzed (see Figure 3). Interval percentages containing the target behavior were calculated each day, and then an average for the intervention phase was determined. Mean level lines were drawn through the data points of each phase in the research design. The mean level line for the baseline was at 24%. This indicates that, on average, 24% of the intervals during baseline contained physical resistance.

The mean level line for phase "B," the first intervention phase, was at 6%. This indicates that, on average, 6% of the intervals during the first intervention phase contained physical resistance. Once intervention started an 18% drop in the number of intervals containing physical resistance occurred, when compared to the baseline period.

The mean level line for phase "C," the second intervention phase, was also at 6%. This indicates that, on average, 6% of the intervals during the second intervention phase contained physical resistance. After the plan was modified, intervals containing physical

resistance did not decrease. Modification of the plan did not seem to have an effect on physical resistance.

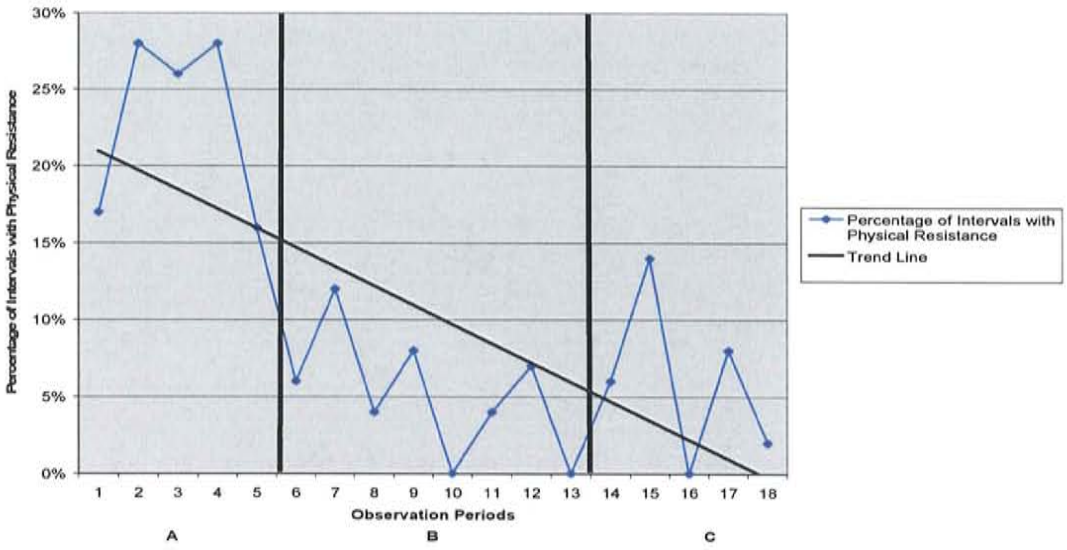
Figure 3. Visual analysis of physical resistance: Mean level lines



Visual Analysis of Physical Resistance/Trend

Using the techniques of visual analysis, specifically trend lines, the data collected on the problem behavior of physical resistance was analyzed (see Figure 4). To determine the overall direction and degree of change, an overall trend line was calculated using Microsoft Excel. The direction of the trend line was negative, indicating an overall decreasing trend of physical resistance. As shown in Figure 4, the degree of change was approximately 20% from baseline to the final phase of intervention.

Figure 4. Visual analysis of physical resistance: Trend line



Parent & Teacher Follow-Up Interviews

Parent and teacher follow-up interviews were conducted one year after the consultation process ended to gain qualitative information about the long-term effects of the FBA-BIP process.

The follow-up interview with the parent, who was heavily involved in the FBA-BIP process, consisted of five questions (see Appendix I). The first question asked about the child's most problematic behaviors at the follow-up period. The subject's parent indicated that the subject's physical aggression towards others was no longer present, but the subject would occasionally engage in physical aggression towards herself, such as hitting herself in the face. The subject's parent also stated that the subject occasionally engaged in verbal aggression, such as screaming, when she was upset. The second question asked if the parent was aware of any type of intervention plan currently used in the classroom. If a plan was currently in place, if any of the same strategies used last year were still being used to reduce the subject's verbal and physical aggression.

The parent indicated she was aware that redirection strategies were being used. These redirection strategies included taking the subject for a walk or changing the activity. Neither of these strategies were part of the initial BIP.

The third question asked if within the present school year her child had any behavioral problems at school, and if so, what type of behavioral problems. The parent stated that the subject had not had any significant behavioral "melt downs" during the present school year, but that the subject would occasionally exhibit problem behavior when she would get off of the school bus in the morning.

The fourth question asked if the parent's child had not been having any behavioral problems at school of verbal or physical aggression, what the parent thought caused the improvement. The parent stated that the subject was getting more quick and direct attention, getting more intellectual stimulation, and getting her needs met more quickly than during the previous school year. The parent also reported that the subject was growing and maturing which may have improved her behavior.

The fifth question asked how the parent felt about the intervention process they were involved in during the last school year. The parent stated that the intervention process was very useful, but questioned whether the previous staff was fully invested in the process. The parent reported that the intervention process definitely made a difference with the subject's behavior and was also useful in identifying strategies to use in the home.

The follow-up interview completed by the subject's new teacher consisted of 6 questions (see Appendix J). The first question of the interview asked what behaviors the subject currently has that are the most problematic for the teacher. The teacher reported

that the subject had the most difficulty during the morning meeting, when demands were placed on her, and when transitioning after receiving a reward.

The second question asked if the teacher reviewed the intervention plan used with the student during the previous year. The teacher reported that she did review the intervention plan. The third question asked at what time of the year did the teacher review it. Alternatives included: prior to the student starting, after the student started, or when the student started to exhibit difficult behavior. The teacher stated that she reviewed the intervention plan at the end of the prior school year. The fourth question asked if the teacher was currently using any of the strategies developed for the student last year to reduce the student's incidences of verbal and physical aggression. The teacher reported that she was currently using all of the strategies on the intervention plan. The fifth question asked if the teacher was not using the plan, what the teacher was currently using for intervention strategies with the student in the classroom, for what particular behaviors, and what the current plan included. The teacher reported she was using the intervention plan; therefore, question five was not applicable. The sixth question asked if the teacher was not using the plan, if the teacher would mind if the examiner reviewed the prior plan's strategies with the teacher to see if any of the strategies were implemented without a review of the plan. The teacher reported she was using the intervention plan; therefore, question six was not applicable.

Chapter V: Discussion

This chapter will include an analysis of the proposed research questions. It also includes a discussion of this study, implications for future research, and implications for practice.

Research Questions

1) Does the BIP, developed from the FBA and consultative model, prove to be successful in reducing the target behavior of verbal resistance of the student with a cognitive disability?

As shown previously in Figures 1 and 2, the subject's problem behavior of verbal resistance reduced after the implementation of the BIP. Mean level lines show a 12% decrease in verbal resistance. Trend lines for verbal resistance were negative, indicating an overall improvement over the course of the research design.

Beyond simply showing a reduction in the occurrence of problem behavior, the interventions included in the BIP were geared at teaching the subject more appropriate ways to communicate her wants and needs. Because positive communication was not measured, the impact of the plan on this goal cannot be determined. Yet, anecdotal reports from the teacher indicated some slight improvements. Furthermore, the interventions also assisted the subject in working for 7 minutes on a daily basis which was not happening before the implementation of the intervention. Even though these data were not recorded quantitatively, there appeared to be positive change in the amount of 'work' completion of the subject.

2) Does the BIP, developed from the FBA and consultative model, prove to be successful in reducing the target behavior of physical resistance of the student with a cognitive disability?

Like verbal resistance, there was a reduction in physical resistance. As shown previously in Figures 3 and 4, the subject's problem behavior of physical resistance reduced considerably after implementation of the BIP. Mean level lines show an 18% decrease in physical resistance. Trend lines for physical resistance were negative, indicating on overall improvement over the course of the research design.

The BIPs physical resistance strategies included stating that the displayed behavior was against the rules, placing the subject in time-out for two minutes, then returning to the interrupted task when the time out was finished to teach the subject that engaging in physical resistance did not allow her to avoid work. As shown by the reduction in physical resistance, the strategies in the BIP did work to reduce the problem behavior. Like previously stated, the interventions assisted the subject in working for 7 minutes on a daily basis. According to the teacher, this was not happening before the implementation of the intervention.

3) Is the student's current team familiar with the FBA and BIP which was conducted a year earlier?

As indicated in the follow-up interviews with the subject's parent and teacher, the parent reported she was aware of the redirection strategies used with her child, and the teacher reported she had reviewed the plan during the spring prior to the subject moving to the new school. However, the strategies the parent reported were not congruent with those used in the previous BIP.

4) Are the intervention strategies developed from the FBA still being implemented one year after initial implementation?

Qualitative information from a follow-up interview with the student's new middle school teacher indicated that the intervention strategies developed from the FBA were implemented one year after initial implementation. The teacher reported she continued to use all of the same strategies from the BIP implemented the prior year.

5) Do the strategies developed from the FBA seem to have a lasting effect on the student's behavior?

Reports from the subject's teacher and parent in the follow-up interview suggest that the subject's problem behaviors were much less severe and frequent than during the baseline and implementation of the plan. However, it is difficult to assume that the positive changes are due to the plan alone. Obviously, there were some significant changes in the subject's life (a new teacher and new school) which could have had a significant effect. In addition, maturation may have played a role. However, to a certain degree, the BIP strategies developed from the FBA did seem to have helped the subject develop some new patterns of behavior. This is especially true of the student's physical aggression towards others, but the BIP appeared to have less of an effect on verbal aggression as indicated by report of the subject still engaging in occasional verbal aggression.

Discussion of Study

During the assessment stage, implementation of intervention, and follow-up, several issues were raised which relate to the study of behavior in the schools and to the use of FBA and BIPs in the schools. The following is a discussion of these issues.

The current study was fairly successful during completion of the FBA, development of the BIP, and implementation of the BIP. Although the BIP needed to be revised and implemented for a second cycle of intervention, the problem behaviors decreased from phase "A" to phase "C". One of the main issues that resulted in the need for a BIP revision was the lack of treatment integrity by the consultees, or the inconsistency of the first implementation of the BIP by the subject's classroom staff. Because the primary researcher did some of the observation during implementation of the BIP, the paraprofessionals in the classroom appeared knowledgeable of the BIP, but were not consistent in their intervention efforts. If the staff would have been more consistent in the implementation of the initial BIP, the change in the subject's problem behaviors may have been more dramatic. The main purpose of the revision was to ensure staff consistency.

Although interventions geared at teaching the subject pro-social communication skills were included in the BIP, it is difficult to say whether these skills were actually learned by the subject. A measure of the subject's pro-social communication attempts would have been beneficial to include in the study to assess whether the subject was actually learning the skills needed to reduce the problem behavior, or whether the subject's problem behavior was reduced as an effect of another variable. Reduction of the subject's problem behavior was a positive effect from the implementation of the BIP, but the overall goal of the school staff was to teach the subject socially appropriate ways of communication, thus reducing her inappropriate communications and problem behaviors.

The follow-up study showed that it is difficult to determine long-term effects of an FBA and BIP. Although the follow-up interviews completed one year after

implementation showed qualitatively that the BIP appeared successful in eliminating the subject's problem behavior, it is difficult to tell with certainty, if the BIP was still responsible for reducing problem behavior. Other variables may have reduced the problem behavior. In addition, in the follow-up interview with the parent, the subject's parent indicated that the subject now engaged in physical aggression towards herself. Therefore, to reduce the new problem behavior, a revision to the FBA and BIP would be needed and should include strategies to reduce the subject's physical aggression towards herself.

Because this study was a single-subject research design, the findings of this study cannot be generalized to the larger population. In addition, the qualitative findings of the follow-up study cannot be generalized. It is impossible to tell if the BIP would have been implemented by a different teacher and if the intervention strategies would have worked in a different environment with a different teacher.

Another issue was the amount of resources and time allocated to the consultation and FBA and BIP process throughout the study. The district hired an outside consultant to conduct the FBA and BIP process because the district's current staff and resources were not capable of completing the process without outside help. Although the reduction in the subject's problem behavior was worth the time and resources allocated to the process, many school districts do not have available resources.

This study also demonstrates that conducting research in a school setting makes it difficult to control variables that can affect the quality of results. Numerous school-based variables can intervene to affect results of a single case design. Variables could include, poor or limited staff training on research and data collection, and school staff with too

many obligations to put forth enough effort to complete the FBA and BIP process successfully. These variables can negatively affect the quality of the FBA, BIP, and the data collection process. This study involved many variables that were a product of conducting research in a school setting that could have adversely affected the quality of research and results. In this study, for example, untrained staff collected that data within various periods of time, making the observation periods inconsistent in length from day to day. The varying observation periods required the data to be interpreted as percentages. The researcher was also unable to be present every day when the BIP was implemented to conclude if the BIP was consistently being implemented as designed by all staff involved in the process, showing again that the lack of training was an issue in this school environment.

Implications for Future Research

Although this was a single-subject research design and the findings of this study cannot be directly applied to general populations, it is hoped that this research will guide future research on the use of FBAs and BIPs with the cognitive disabilities population in school settings. Future research could attempt to discern if conducting an FBA actually makes an intervention plan successful or if an intervention plan can be developed without conducting an FBA. In the present study, it was difficult to determine if the FBA actually made the intervention plan successful or if the intervention plan could have been successful without the development of an FBA. Therefore, in future research, it would be helpful to have multiple case studies where intervention plans are developed with and without the completion of FBAs to determine the effectiveness of the BIPs.

Implications for Practice

As observed in this present study, the subject's school staff were not optimistic that the subject's problem behaviors would change. The staff believed they had tried everything to extinguish the problem behaviors and that no intervention would work. The FBA and BIP provided the staff with a way to address problematic behaviors when they thought it was not possible. FBAs can uncover many aspects of the child and the child's behavior that were previously not examined. Including these aspects of the child and their behavior gives a complete and comprehensive picture of the child and the reasons behind problem behaviors. FBAs allow for complex and effective BIPs to be developed and easily implemented in the school setting.

BIPs also promote implementation consistency between school staff because the BIP is not open to individual interpretation, thus providing a plan in which there are uniform consequences for the child who exhibits problem behaviors. It is not only the best practice standard in education to complete an FBA when students' behavior problems are impeding the learning of themselves or others in a school setting, but FBAs are also critical in the development of a BIP. This study is evidence of the short-term and potentially long-term effectiveness of the use of FBAs to develop effective BIPs for children with cognitive disabilities in a school setting.

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Appendix A: Interval Recording Form

Interval or Time Sampling Recording

Student Name: _____

DOB: _____

Date and Time of Observation: _____

Operational Definition of Behavior: _____

_____

Each Interval/Segment equals:_____ (write them in upper boxes)

Activities ⟶

Activities ⟶

Activities ⟶

RATE = Number of Intervals/Segments with Behavior Present = _____
Total Number of Intervals/Segments in Observation

Appendix B: Parent Interview Form

Parent Interview

By _____

Date _____

Please use a black ink to fill it out.

Child/Age_____ Parent(s)_____

Interviewer_____ Other people present: _____

QUESTIONS TO THE PARENT ABOUT
BACKGROUND INFORMATION, SETTING EVENTS, and PARENTING

1. What are your child's current medical/physical or mental health diagnosis? Is she/he on any medication?

2. What is your child's typical day like? Schedule?

3. Tell me about your child's sleep patterns and eating routines.

4. Could you please tell me all significant life changes or stressors that you and/or your family have experienced this past year? I mean things like job changes, deaths or births in the family, divorces, illnesses or any legal issues.

5. Please describe your discipline techniques. Which are effective and which are ineffective?

QUESTIONS TO THE PARENT ABOUT THEIR CHILD'S BEHAVIOR AND TRIGGERS

1. What are your child's strengths?

2. What activities does your child like to do at home?

3. What behaviors does your child have that are challenging for you? (Prompts: aggression, tantrums, not listening)

4. What do you think your child's needs are?

5. At home or in public, what *times of day, activities, or situations . . .*
   Are difficult behaviors most likely to occur?

   Least likely to occur?

6. At home or in public, with which *people . . .*
   Are difficult behaviors most likely to occur?

   Least likely to occur?

7. What is the one thing you could that would most likely make an undesirable behavior occur?

Appendix C: Teacher Interview Form

Teacher Report

By _____

Date _____

TEACHER IMPRESSION OF THE CHILD'S BEHAVIOR

1. What are the student's strengths?

2. Please fill out the following chart on the child's undesirable behavior. When describing the child's behavior, please be specific. In other words, write the *actions* the child is *exhibiting*. You may lump several behaviors into a summary term, but then please describe/define it further (see examples). Please select those behaviors which are the most problematic for you.

Behavior Actions the child is exhibiting. May lump into a summary term, but then describe further.	**Frequency** How many times per hour/day on average?	**Duration** How long does it last?	**Severity** 1= not severe 3= average 10= most difficult you've seen	**Skill Deficit** He/she doesn't know how to behave appropriately. OR **Performance Deficit** He/she knows how, but isn't performing appropriately.
Example 1: Aggression- Hits, kicks, punches, pushes adults and kids, especially smaller kids.	About 3x per day	NA	8	Performance
Example 2: Resistant - Refuses to following teacher directions or follow routine of classroom by yelling, ignoring, and running.	About 1x per hour	About 5 minutes	6	Skill
1.				
2.				

2. Describe the student's behavior with regards to . . .

Social interaction w/ kids & adults	Unstructured Times (hall, transitions, lunch, recess)	Structured Times (desk, seat-work, lecture, work-time)

TEACHER IMPRESSION OF TRIGGER EVENTS

1. At school, what *times of day, activities, or situations . . .*
   Are difficult behaviors most likely to occur?

   Least likely to occur?

2. At school, with which *people . . .*
   Are difficult behaviors most likely to occur?

   Least likely to occur?

3. What is the one thing you could that would most likely make the undesirable behavior occur?

4. Briefly describe how the child's behavior would be affected if . . .
   You asked him/her to perform a difficult task.

   You interrupted a desired activity.

   You unexpectedly changed the routine.

   He/she wanted something but wasn't able to get it.

   You didn't pay any attention to the child or left him/her alone for awhile.

TEACHER IMPRESSION OF MAINTAINING CONSEQUENCES

1. For *each* of the undesirable behaviors you have listed/described in the chart above, how are you, other adults, and other children responding?

Behavior (from chart above)	How are the adults responding?	How are the kids responding?	Do you think the child feels an emotion when/after engaging in the behavior?
1.			
2.			

2. What discipline techniques sometime work for this child?

3. What discipline techniques seem to escalate the behavior?

TEACHER IMPRESSION OF FUNCTION

Please hypothesize what need the child is getting met or what function the behavior is serving from the list below.

- ☐ Attention (the child may be seeking positive or negative attention from peers or adults).
- ☐ Escape or avoidance (the child may want avoid an activity, interaction with a person(s), or any unpleasant situation).
- ☐ Justice or revenge (the child may be attempting to get back at an individual or group).
- ☐ Acceptance and affiliation (the individual may be seeking to impress another or feel included in a group).
- ☐ Power and control (he/she wants to dominate his/her environment just to feel power).
- ☐ Expression of self (the child is announcing his/her individuality and independence).
- ☐ Access to desired activities or rewards (the child gets to participate in desirable/enjoyable/fun activities, items, or privileges by misbehaving).
- ☐ Sensory input (the child is gaining sensory regulation by his behavior).

Appendix D: Interval Recording Data

Interval or Time Sampling Recording

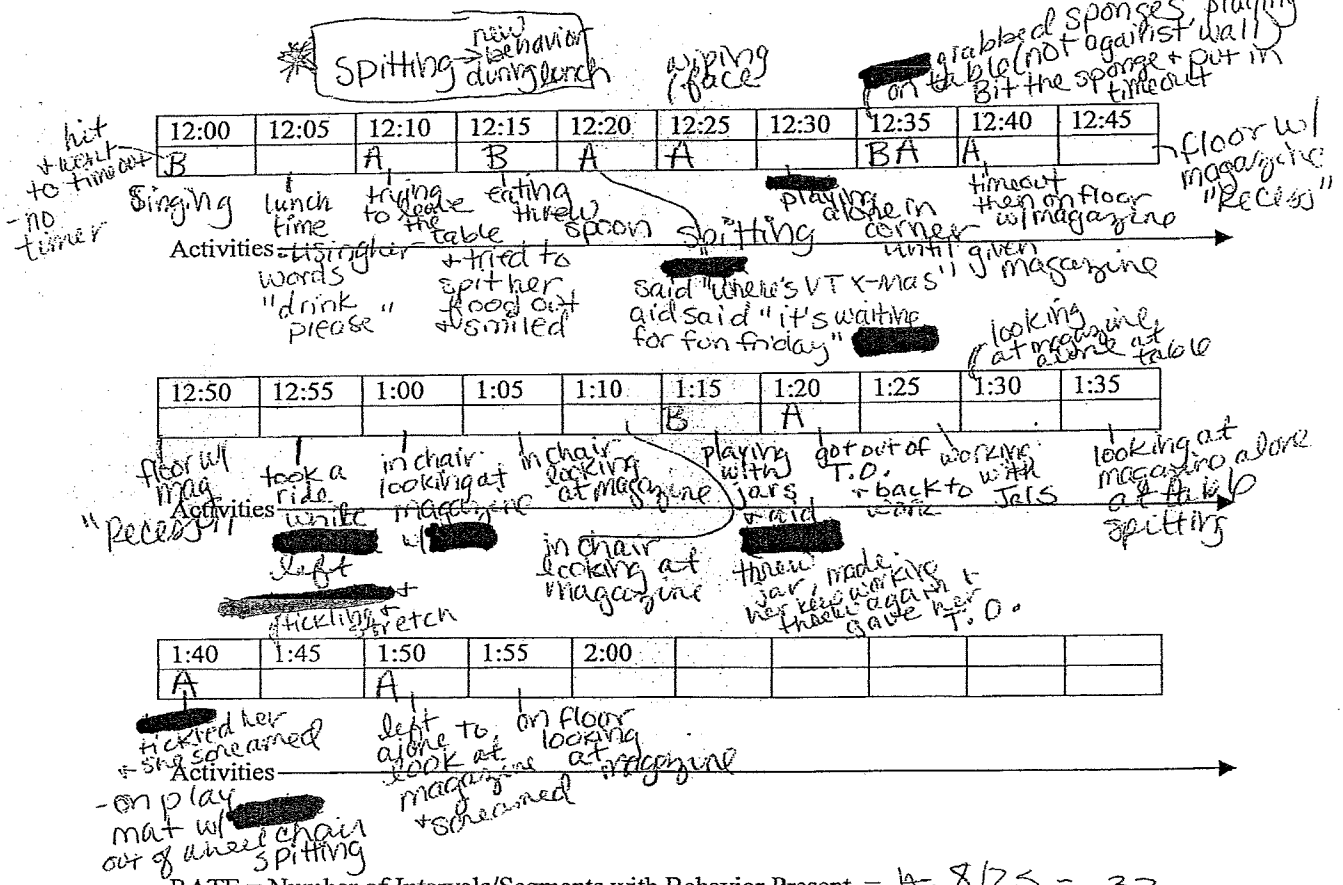
Student Name: [redacted]

DOB: [redacted]

Date and Time of Observation: Tuesday February 6, 2007 12:00-2:00 [redacted]

Operational Definition of Behavior: A: Screaming/Fussing/Whining
B: Hitting/Throwing/Eating Objects/Biting

Each Interval/Segment equals: 5 Minutes (write them in upper boxes)



RATE = Number of Intervals/Segments with Behavior Present = A= 8/25 = .32
Total Number of Intervals/Segments in Observation B= 4/25 = .16

[redacted]

Appendix E: Summary Statement

FBA Summary Statement

<table>
<tr><th>Setting Events</th><th>Predictors (triggers)</th><th>Problem Behavior</th><th>Maintainers</th><th>Function</th></tr>
<tr><td rowspan="2">-Lack of sleep at night
-Medication
-Language processing issues
-Cerebral Palsy
-Epilepsy
-Cognitive Disability
-Inconsistent schedules of other family members
-Has been in the same classroom as her brother since he was three.</td><td>-Proximity to school
-First hour of school day.
-Teacher's requests for her to work
-Table work placed in front of her (coloring)</td><td rowspan="2">Problem behavior that includes one or more of the following:
-Screaming, whining, and/or fussing.
-Hitting, throwing, eating objects, and/or biting.

Side behavior—asking where's daddy, where's Veggietales, where's Brother?</td><td>-She gets to listen to her music.
-She gets to play with the toys/books she wants to play with.
-She gets food in the am only when she's engaged in the problem behavior.
-The required work is put away.</td><td><u>Avoid or escape</u> undesirable tasks.
<u>Obtain</u> desirable tasks.</td></tr>
<tr><td>-Brother leaving CD classroom, around 1:00
-Situation where she needs/wants some interaction.
-Transitions between activities—often left by self a bit.</td><td>-Teachers give her desired verbal interaction. Responding to her questioning or fussing.
-Teachers attempt to comfort or distract her.</td><td><u>Self-expression;</u> The subject is stuck in this way of communicating her discomfort. Furthermore, she is using this to communicate even her basic needs (cup example). In response, the teachers are giving her verbal interaction and distraction, ultimately <u>attention/acceptance</u>.</td></tr>
</table>

Appendix F: Competing Behavior Model

Competing Behavior Model

		-Asking appropriately for her desired verbal interaction. -Completing her required daily work without the presence of problem behavior.	Obtain desired interaction and attention for completing work.
-Lack of sleep at night -Medication -Language processing issues -Cerebral Palsy -Epilepsy -Cognitive Disability -Inconsistent schedules of other family members	-Proximity to school -Teacher's requests for her to work -Table work placed in front of her (coloring) -Transitions between activities—often left by self a bit. -Brother leaving CD classroom -Situation where she needs/wants some interaction.	Problem behavior that includes one or more of the following: -Screaming, whining, and/or fussing. -Hitting, throwing, eating objects, and/or biting. Side behavior—asking where's daddy, where's Veggietales, where's Brother?	Avoid or escape undesirable work. Obtain desirable activities. Self-expresses her wants and needs and gains attention/acceptance.
	.	-Communicating *in some form* to receive the verbal interaction that she desires. -Requesting to change daily activities or chose between two activities. -involvement in a rewards system where she is rewarded for completing every assignment by food/music.	

Appendix G: Behavior Intervention Plan

Behavior Intervention Plan

Picture Schedule

- The subject will have a picture schedule in either a booklet form or a key-ring. The TAs will use this to prompt her to her activities.
- Furthermore, with the picture schedule, everything will be presented as "**First ____, then ____.**"

Work Time

- We are trying to get the subject's brain and body used to five minutes of work at a time.
- The subject will have a designated work station with a desk up against the wall so it cannot be pushed. The wall should be free of items that can be ripped down.
- During the subject's scheduled work time . . .

A. The subject will be taken to her work station.

B. The subject will be given two activities that the TA/teacher selects. **"you may do ___ or ___."** She can be presented these choices either by photo cards of the activity or by actually bringing out the activities out to show her. If she doesn't select, the teacher/TA will select for her. **"She is not sure. I will pick _____."**

C. The visual timer will be set for 5 minutes.

D. The TA/teacher will explain **"First, work (maybe describe the work, i.e. coloring), then book or cracker. Time is starting."**

E. The subject will not be able to escape the task. It will not be removed because of her resistance. Ignore the fussing and screaming. Do not get into a power struggle with her either. Be calm and just stay with her at the work area.

F. If she gets aggressive, see notes for time-out below.

G. If at the end of 5 minutes, if the subject is <u>not</u> screaming or showing aggression, say, **"your work time is over. No screaming. No throwing. You get ____ (either book or cracker)."** REMEMBER: even if she screams at the beginning of the 5 minutes, it is okay. It is at the <u>end of the five minutes</u> we are looking at. Teaching her the connection between calm and reward.

H. If at the end of the 5 minutes the subject <u>is</u> screaming or showing aggression, say, ""**your work time is over. There was screaming/hitting/throwing. No book or cracker this time. We'll try again next time."**

Scheduling the Subject and her Brother's Transitions

- The subject and her brother's transitions will be scheduled so that the subject doesn't see her brother leaving the room.
- To do this, the subject will have "recess" regardless of whether it is outside or just walking the halls. The subject will be told using her picture schedule, "**it is an inside/outside recess day**."
- At the end of her recess, 1:00, the subject will be taken to the office to greet the secretaries and pick up a small snack.
- She should not return to the room until 1:05, and her brother should be gone.
- The TA who is on her should show her the next picture in her schedule and then move directly into sensory/exercise time with her upon immediate return to the room.

Dealing with her Questioning (Where's Daddy, Where's brother, Where's Veggietales?)

- These questions will no longer be responded to by giving her verbal feedback about her brother, Daddy, or Veggietales. For example, adults will no longer respond with "Where IS daddy? Daddy is gone." Etc.
- Instead, Teacher/TAs will give her the words for what she is really trying to say. For example, **"You want the milk. You want someone to talk to you. You are trying to say hello to me. You are bored and want some attention."**
- If the teacher/TA doesn't know what she is trying to say by the questioning, they will simply track her behavior at that moment. For example, "**you are eating your chicken nugget. You are sitting at the table. You have a book."**

Dealing with her Screaming/Fussing/Whining

- The first goal is to prevent it. Keep her engaged during her challenging times.
- Then, as soon as you start to see it, try to distract immediately. Get on it quickly.
- If she goes into full-blown screaming, you cannot reinforce it by *then* giving her attention/distraction. At that point, ignoring is what needs to happen. Stay calm and know that it get worse before it gets better.

Dealing with Aggression

- The following behaviors will warrant a time-out: Throwing, eating work materials, or tipping. If the subject engages in these behaviors . . .
- Say, "**throwing/eating work/tipping the table is against the rules. Time-out."**
- Take her to the time-out area, as you have been. Did we talk about using the timer? I don't think you should because you are using that with work and I don't want her to think work-time is a time-out.
- When the two minutes is over. Say, **"Time out is done."**
- Important: Go back to the task. If you don't, you just taught her that time-outs allow her to avoid.

Appendix H: Revised Behavior Intervention Plan

REVISED **Behavior Intervention Plan**

First-Then Language

- When making transitions or telling the subject her schedule, everything will be presented as "**First** ____, **then** ____."

Work Time

- We are trying to get the subject's brain and body now used to seven minutes of work at a time.
- The subject will have a designated work station with a desk up against the wall so it cannot be pushed. The wall should be free of items that can be ripped down.
- During The subject's scheduled work time . . .

A. Either at the work station or before the subject goes to the work station, The subject will be given two activities that the TA/teacher selects. **"You may do ___ or ___."** She should be presented these choices by actually bringing out the activities to show her. If the subject doesn't select, the teacher/TA will select for her. **"You are not sure. I will pick _____."**

B. The visual timer will be set for 7 minutes.

C. The TA/teacher will explain **"First, work (maybe describe the work, i.e. coloring), then book or cracker. Time is starting."**

D. The overall task will be broken down into smaller segments. For every smaller segment the subject completes, she will be rewarded. For example, on a coloring page, there may be five elephants to color. She is rewarded for each one. For rewards, we talked about goldfish crackers or grapes. (We need to be on the lookout for a reward that is reinforcing for her that is non-food. What if you cut the pictures out of a ToysRUs catalog for her to keep in a bag or tape to a piece of paper? She really likes the catalog with toys in it so wondering if giving her the individual pictures would work.)

E. The subject will not be able to escape the task. It will not be removed because of her resistance. Ignore the fussing and screaming. Do not get into a power struggle with her either. Be calm and just stay with her at the work area.

F. If she gets aggressive, see notes for time-out below.

G. If at the end of 7 minutes, the subject will again be rewarded for completing the whole 7 minutes.

Scheduling the Subject and her Brother's Transitions

- The subject and her brother's transitions will be scheduled so that she doesn't see her brother leaving the room.
- To do this, the subject will have "recess" regardless of whether it is outside or just walking the halls. The subject will be told using her picture schedule, "**it is an inside/outside recess day**." At the end of her recess, 1:00, the subject will be taken on a walk or to the office to greet the secretaries and pick up a small snack. She should not return to the room until 1:05, and her brother should be gone.
- In the morning, the subject won't go to the room until her brother has left.

Dealing with her Questioning (Where's Daddy, Where's brother, Where's Veggietales?)

- These questions will no longer be responded to by giving her verbal feedback about her brother, Daddy, or Veggietales. For example, adults will no longer respond with "Where IS daddy? Daddy is gone." Etc.
- Instead, Teacher/TAs will give her the words for what she is really trying to say. For example, **"You want the milk. You want someone to talk to you. You are trying to say hello to me. You are bored and want some attention."**
- If the teacher/TA doesn't know what she is trying to say by the questioning, they will simply track her behavior at that moment. For example, **"You are eating your chicken nugget. You are sitting at the table. You have a book."**

Dealing with her Screaming/Fussing/Whining

- The first goal is to prevent it. Keep her engaged during her challenging times.
- Then, as soon as you start to see it, try to distract immediately. Get on it quickly.
- If she goes into full-blown screaming, you cannot reinforce it by *then* giving her attention/distraction. At that point, ignoring is what needs to happen. Stay calm and know that it get worse before it gets better.
- Difficult Time-Morning: Because the subject has a difficult time in the morning with screaming/fussing/crying, the goal is to keep her very busy and distracted to prevent the crying. The following activities were identified as distracters: Bouncing on a ball, walking outside, scooter board, wagon ride.

Dealing with Aggression

- The following behaviors will warrant a time-out: Throwing, eating work materials, or tipping. If the subject engages in these behaviors . . .
- Say, **"throwing/eating work/tipping the table is against the rules. Time-out."**
- Take her to the time-out area, as you have been.
- When the two minutes is over. Say, **"Time out is done."**
- Important: Go back to the task. If you don't, you just taught her that time-outs allow her to avoid. Don't start the time over. Instead, just go back for the time which is remaining.
- Difficult Time-Lunch: the subject seems to see one TA as someone to 'play' with. As such, she likes to engage the TA in 'games' during lunch—throwing food, etc. Therefore, the teacher will reassign a different lunch partner to the subject. We will also be on the lookout for a cup that either suctions to the table or for a plastic mug with a handle the TA can hold while the subject drinks.

Appendix I: Parent Follow-Up Interview

Parent Interview

By _____

Date _____

Parent(s)_____

Interviewer_____

1. What behaviors does your child have that are most problematic now?

2. Are you aware of any type of intervention plan currently being used with your child in the classroom? If so, are any of the same strategies being used which were used last year to reduce verbal and physical aggression?

3. Within the present school year, has your child been having any behavior problems at school? If so, what type?

4. If your child has not been having any behavior problems at school of verbal or physical aggression, what do you think that is due too?

5. How do you feel about the intervention process that you were a part of last year?

Appendix J: Teacher Follow-Up Interview

Teacher Interview

By _____

Date _____

Teacher_____

Interviewer_____

1. What behaviors does your student have that are most problematic for you now?

2. Did you review the intervention plan that was used with this student last year?
   (If teacher answers "yes" to question #2, continue with questions #3 & #4)
   (If teacher answers "no" to question #2, skip #3 & #4, and continue with #5 & #6)

3. If yes, when did you review it (prior to her starting, after she started with you, when she started to exhibit difficult behavior?)

4. If yes, are you using any of the strategies which where developed for this student last year to reduce verbal and physical aggression? (Review each of the strategies with her and mark whether and how she is using them.)

5. If not, what are you currently using for interventions strategies with this student in the classroom? For what behaviors? What does the plan include?

6. If not, still review each of the strategies from last year's plan with her to see if she is doing any of them even if she thought of them on her own without the plan?