

THE COMPARATIVE EFFECTS OF FUNCTION-BASED VERSUS  
NONFUNCTION-BASED INTERVENTIONS ON THE SOCIAL BEHAVIOR OF  
AFRICAN AMERICAN STUDENTS

by

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## ABSTRACT

APRIL LEIGH MUSTIAN. The comparative effects of function-based versus nonfunction-based interventions on the social behavior of African American students. (Under the direction of DR. YA-YU LO)

Disproportionality has been a persistent problem in special education for decades. Despite mandates outlined in the Individuals with Disabilities Education Improvement Act (IDEA, 2004), African American students continue to be disproportionately represented in the Emotional Disturbance (ED) category in special education (e.g., Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Chung, 2005). Additionally, African Americans represent the highest percentages of students identified as at risk (Gay, 2000) and receive a disproportionate number of referrals for disciplinary actions (Cartledge & Dukes, 2008) among racial groups. Even though many hypothesized reasons for such disproportionate rates have been researched (e.g., poverty, inherently bad behavior, cultural bias, ineffective behavioral management), the findings are conflicting. Disproportionality among this population continues, and successful educational outcomes are far too infrequent.

One promising intervention that can decrease exclusionary practices imposed on African American students and address disproportionality in both special education and disciplinary action is to use functional behavioral assessments and function-based interventions. The effectiveness of FBAs and function-based interventions for students with ED and those at risk for developing ED have been well documented (e.g., Heckaman, Conroy, Fox, & Chait, 2000; Reid & Nelson, 2002). However, only two studies have involved African American students as participants in FBA implementation (i.e., Kamps, Wendland, & Culpepper, 2006; Lo & Cartledge, 2006) and only one

included African Americans as a means to address disproportionality (i.e., Lo & Cartledge). Additionally, professional development on FBA has largely been limited to special education personnel only. In order for FBAs to be effective in preventing problem behavior of African American students before they are referred to special education, research on FBA and professional development targeted to general education teachers is critical.

This study examined the comparative effects of function-based versus nonfunction-based interventions on the off-task and replacement behavior of African American students at risk for ED and the extent to which general education teachers could implement FBAs with high fidelity. Findings indicated that function-based interventions resulted in higher decreases of off-task behavior than nonfunction-based interventions. Additionally, descriptive results showed that both general education teachers were able to implement FBAs and function-based interventions with high levels of fidelity. Finally, social validity data suggested that teachers felt that FBAs and function-based interventions were of social importance. Teachers' perceptions also changed on the extent to which students had continued needs for disciplinary action and special education services in the ED category. Specifically, teachers felt students were no longer in need of special education services or disciplinary action as a result of the function-based interventions. Limitations of the study, suggestions for future research, and implications for practice are also discussed.

## DEDICATION

I would like to dedicate this dissertation to the person I love more than life itself and who has sacrificed the most through this journey...my beautiful daughter, Cierra. Sweetheart, thank you for believing in my dream so that you and I can have the life I have prayed we would one day have. I hope, through the past three years, you can see that faith, strength, and determination can help you achieve *your* dreams just as they have allowed me to achieve mine. I would also like to dedicate this dissertation to my two loving mothers, two wonderful fathers, my brothers and sisters, my beautiful niece and handsome nephew, and my three darling grandmothers. Without the love and support from all of you, I never would have made it! Finally, this dissertation is completed in memory of my grandfathers, Don, Jim, and Mac, who left me before I was ready but are now in their eternal happy place...thank you for being my angels from above!

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## CHAPTER 1: INTRODUCTION

### *Statement of the Problem*

**Disproportionality of African Americans in special education.** Racial disproportionality in special education is a problem that continues despite advances made in the field in recent years, such as the push for more inclusive practices, increased accountability, and the response to intervention initiative (IDEA, 2004; No Child Left Behind Act, 2001). Among those from culturally non-dominant racial backgrounds who are placed into special education, African American students are the most overrepresented group in special education programs in nearly every state. This is especially the case in the categories of mental retardation (MR), emotional disturbance (ED), and multiple disabilities, for which subjectivity in assessments is most likely (National Research Council [NRC], 2002; Parrish, 2002; Skiba et al., 2008). In addition, different from patterns for other races, the disproportionality of African American students has remained steady across decades (Skiba, Poloni-Staudinger, Gallini, Simmons, & Feggins-Azziz, 2006). African American students with challenging behaviors continue to be referred to special education programs for ED more than any other race (National Education Agency [NEA], 2008). Specifically, African American students comprise 11.3% of the total school population but over 23% of the enrollment in ED classrooms (Skiba et al., 2006). The NRC (2002) reported that African American students are 1.92 times more likely than Caucasian students to be labeled with ED.

These students often begin receiving special education services in elementary school, and most of them remain in special education until they exit high school (NEA, 2008).

In addition to the disparity in special education referrals, African American students continue to be disproportionately placed into more restrictive education settings once they receive special education services (Skiba et al., 2006). In their investigation of disproportionate special education placement of African American students within the disability categories of ED, mild MR, moderate MR, learning disabilities (LD), and speech and language impairments, Skiba et al. (2006) found that African American students were underrepresented in general education classrooms (i.e., removal less than 21% of the school day) and overrepresented in more restrictive placements (i.e., removal greater than 60% of the school day) when compared to other racial groups. The authors also found that disproportionality was most evident in those disability categories for which other racial groups are normally served in general education. In this study, African American students identified as LD in this study were more than three times as likely as other students identified as LD to be placed in a separate class setting. Those African American students identified with a speech and language impairment were seven times more likely to be served in a separate setting. These alarming statistics draw attention to the need for finding solutions to the overrepresentation of African American students in special education.

Although African American students are overrepresented in special education for students with mild disabilities, they are underrepresented in gifted and talented programs. This is not a new phenomenon. In fact, African American, Hispanic, and American Indian students have always been underrepresented in gifted education and always by a

margin greater than 40% (Skiba et al., 2008). According to Zappia (1989), African American students in the 1980s made up approximately 16% of the United States school population but only 8% of the gifted population. On the contrary, Caucasian students represented over 71% of the school population, and 81% of the gifted program population. In the past 4 years, the disproportionate representation of African Americans in gifted education has continued to increase (Skiba et al., 2008). The underrepresentation of African American and other minority students in gifted and talented programs indicates that the education of culturally and linguistically diverse students must be addressed on an even larger scale than has already been attempted.

**Disproportionality of African Americans in disciplinary referrals.** Racial disproportionality for African American students is also unfortunately evident in disciplinary referrals. Specifically, African American students have higher rates of office referrals, suspensions, and expulsion from school and receive more severe punishments than Caucasian students for the same type of behavior (Cartledge & Dukes, 2008; Shaw & Braden, 1990) In fact, race continues to remain a significant predictor of suspensions and expulsions, even when socioeconomic status is controlled statistically (Skiba, Michael, Nardo, & Peterson, 2002; Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Chung, 2005). For example, in a study by Gregory and Mosely (2004), analysis of discipline data revealed that African Americans represented approximately 37% of the school enrollment, but approximately 80% of those students receiving some form of in-school suspension. Additionally, African Americans made up more than 68% of total out-of-school suspensions. These figures represent an overrepresentation of disciplinary

action for African American students when compared to Caucasian and Asian American students (Gregory & Mosely).

**Hypothesized factors linked to disproportionality of African American students.** Although reports on the disproportionality of African American students in special education and disciplinary referrals remain logically consistent, the reasons for this persistent phenomenon remain unclear. Researchers and educational professionals have hypothesized several factors that may be linked to racial overrepresentation, including poverty and poor cultural values, adoption of disciplinary practices, and poor instructional quality in general education classrooms (Garcia & Ortiz, 2006; Harris-Murri, King, & Rostenberg, 2006; Skiba et al., 2005).

One widely suggested explanation of disproportionality among African American students concerns poverty or cultural values of parents or home environments that are inconsistent with school operation norms (Coutinho, Oswald, & Best, 2002; Oswald, Coutinho, & Best, 2002). Such explanations are based on the premise that reading difficulties or behavioral issues commonly noted in special education referrals are due to poor parenting practices or home conditions that prevent minorities and students of poverty from being academically successful. However, these explanations cannot account for the number of African American students who are products of poverty but also academically successful. More recent research on this topic has begun to refute the notion that poverty plays a causal role in the overrepresentation of African American students in special education. For example, Skiba et al. (2005) explored the relationships among race, poverty, and special education identification in order to determine the extent to which poverty contributed to racial disproportionality in special education. Although data

were only analyzed from one midwestern state, the authors found that poverty among African American students was a weak and inconsistent predictor of disproportionality across a number of disability categories. Specifically, poverty did not significantly predict disproportionality for overall special education enrollment, ED, or moderate MR categories. Results for African American students with speech and language impairments and LD showed a significant inverse relationship, indicating that as the proportion of African American students receiving free or reduced lunch increased, disproportionality in those two disability categories decreased. The only disability category for which higher rates of poverty predicted increased disproportionality was mild MR. Therefore, it appears that poverty alone cannot account for disproportionate representation of African American students in special education.

A second hypothesized contributor to disproportionality among African American students in special education concerns schools' disciplinary practices. Although challenging behavior is often a basis for special education referrals, current data on disproportionality in disciplinary action provide a possible explanation for why more African American students are being identified for special education than students of other races. Research on disproportionality in disciplinary measures provides evidence that overidentification of African American students in special education may be a function of teachers' or administrators' biased perceptions towards the behavior of African Americans and limited skills in behavior management. First, African Americans and Caucasians exhibit similar behaviors when being referred for a disciplinary action, refuting the notion that African Americans exhibit more severe behaviors than students of other races (Skiba, Michael, Nardo, & Peterson, 2000). Second, African American

students receive harsher punishments than Caucasian students for less severe and more subjective behaviors, such as disrespect or excessive noise (Skiba et al.). They also receive corporal punishment at disproportionate rates when compared to Caucasian students but not as a result of more severe infractions (Shaw & Braden, 1990). Such findings indicate that the focus must shift from the belief that African American students exhibit more severe behaviors than students of other races to the idea that cultural bias and an overall lack of understanding may play a significant role in disciplinary actions.

Perhaps the most widely agreed upon explanation for disproportionality by experts in the field is that the inadequacy of general education and its inability or unwillingness to meet the needs of all students is the root of disproportionality in special education (Harris-Murri et al., 2006; Skiba et al., 2008). The passage of IDEA (2004) included new mandates on the appropriation of funds for scientifically based research strategies to address inappropriate behavior of students with disabilities and to prevent children with behavior problems from eventually requiring special education and related services under the disability category of ED. Additionally, IDEA allocates professional development funds to allow school personnel to acquire skills related to effective instruction and positive behavior interventions to reduce overidentification of students in special education. This provision is ultimately aimed at training general education teachers in preventing and intervening in students' problem behavior through effective academic instruction and behavioral supports. However, despite federal attention and increased state standards given to increase accountability of educational systems, some community leaders and researchers believe that general education is not structured in a way to comply with these standards and that current services offered to students are

insufficient to provide quality instruction to every child who needs it (Blanchett, Mumford, & Beachum, 2005). One way to alleviate this issue is to train general educators on research-based behavioral strategies that are conducive to general education.

**Use of functional behavioral assessment to prevent disproportionality.**

Mandates of IDEA (Sec. 300.323; 2004) specifically require the use of positive behavioral supports and interventions for a child with a disability whose behavior impedes his or her learning or that of others in order to address the behavior.

Additionally, IDEA requires that any child with a disability who has been removed from his or her current placement due to disciplinary infractions for 10 school days receive an FBA and behavioral intervention services and modifications to address behavior violations (Sec. 300.530). FBA is a systematic process of identifying problem behaviors and the events that reliably predict and maintain their occurrence or nonoccurrence across time (Sugai et al., 2000). It involves gathering behavioral information through the use of interviews, observations, rating scales, and experimental analysis to improve the effectiveness, relevance, and efficiency of behavior support plans (Horner, 1994; Sugai et al.).

In addition to what is required in the law for students who have already been identified with disabilities, the FBA process can be used as a proactive approach to addressing problematic behaviors *before* students become identified in special education. FBAs are applicable to all students (Sugai & Horner, 1999-2000) and are used to develop behavior support plans that address the function of a student's problem behavior by creating strategies that make the problem behavior irrelevant, inefficient, and ineffective (O'Neill et al., 1997). FBA results are used to develop function-based intervention



strategies that target contextual factors and environmental variables (i.e., setting events, antecedents, maintaining consequences) that trigger or set the occasion for problem behavior. Function-based interventions are interventions developed based on the function (e.g., gain peer or adult attention, escape from difficult task) or the “why” of an individual’s behavior rather than on the form or physical aspects (e.g., out of seat, verbal outbursts) of behavior. Considering the high rates of suspensions and expulsions African American students receive due to challenging behavior, researchers in the field have suggested the need for FBAs and function-based interventions to effectively decrease the exclusionary practices for these students (Yell & Shriner, 1997). Effective implementation of FBAs and function-based interventions in general education as a proactive measure may be a means for preventing disproportionality among African American students in special education referrals and reducing disproportionality in disciplinary action.

**Empirical effectiveness of function-based interventions.** The effectiveness of function-based behavior interventions have been well documented with multiple student populations, including those identified as having LD (e.g., Burke, Hagan-Burke, & Sugai, 2003), developmental disabilities (e.g., Blair, Umbreit, Dunlap, & Jung, 2007; Brooks, Todd, Tofflemoyer, & Horner, 2003), students with or at risk for ED (e.g., Heckaman, Conroy, Fox, & Chait, 2000; Lane, Umbreit, & Beebe-Frankenberger, 1999; Reid & Nelson, 2002), and English Language Learners (ELL) (e.g., Preciado, Horner, & Baker, 2009). However, there is limited research addressing the effectiveness of function-based interventions for African American students at risk for ED (Kamps, Wendland, & Culpepper, 2006; Stahr, Cushing, Lane, & Fox, 2006). To date, only one study was found

that *specifically targeted* African American students at risk for ED in addressing the effectiveness of function-based interventions (Lo & Cartledge, 2006). In this study, Lo and Cartledge (2006) used a multiple-baseline-across-participants design to examine the effectiveness of FBA procedures and function-based behavior support plans that focused on skills training, consequence-based interventions, and self-monitoring to reduce off-task behavior and increase appropriate behavior of four African American male students who were in grades two through four. Results indicated that all students reduced their levels of off-task behavior when function-based behavior intervention plans were used. In addition, all four students remained in their current placements, without being referred to special education for the two at-risk students or to more restrictive placements for the two students already identified with ED.

**Function-based versus nonfunction-based interventions.** Although there is research to support the use of function-based interventions as an effective method for decreasing problem behavior, preventing unnecessary identification, and addressing disproportionality in special education for students at risk for or with ED (Kamps et al., 2006; Lo & Cartledge, 2006; Stahr et al., 2006), other research indicates that practitioners continue to select punitive and exclusionary measures regardless of the function of a student's behavior (Scott et al., 2005). This finding may result from the fact that punitive and exclusionary measures often serve as negative reinforcers on the part of practitioners who seek to avoid implementing more intensive behavior support plans that require extra time and effort. It is also negative reinforcement for practitioners because punitive methods allow immediate escape by stopping the problem behavior temporarily. Additionally, FBA is a complex process that involves many steps such as data collection,

direct observation, developing an intervention plan that matches the hypothesized function of behavior, and implementing the plan. Because of such complexity, FBA implementation presents barriers to practitioners. The multifaceted nature of the FBA process is also very systematic and requires technical adequacy and a high degree of skill in order to be successfully implemented. Most teachers do not possess the skills necessary to complete an FBA without sufficient training. Despite such barriers, substantial evidence still suggests that interventions based on FBAs are highly effective (Blair et al., 2007; Burke et al., 2003; Preciado et al., 2009). What remains unclear is whether function-based interventions are or can be more efficient than other interventions that have research support (e.g., token economies that focus on Attention Deficit Hyperactivity Disorder [ADHD] symptoms; Bender & Mathes, 1995; DuPaul & Weyandt, 2006) but are not function-based. Understanding how function-based interventions compare to nonfunctional approaches is a research question that warrants further investigation. One advantage of such a comparison is that results could help to explain the need to increase teacher investment and promote use and sustainability of function-based interventions over traditional, nonfunctional methods of behavior management.

To date, only six studies (i.e., Carr & Durand, 1985; Ellingson, Miltenberger, Stricker, Galensky, & Garlinghouse, 2000; Filter & Horner, 2009; Ingram, Lewis-Palmer, & Sugai, 2005; Newcomer & Lewis, 2004; Payne, Scott, & Conroy, 2007) have examined the comparative effects of function-based versus nonfunction-based interventions on problem behavior of students with or at risk for disabilities. All six studies provide empirical support for the use of function-based interventions over the

nonfunction-based interventions in decreasing inappropriate student behavior. These studies included 18 students, none of whom were identified as African American. Considering the issue of disproportionality for African American students, further research is warranted to determine the differential effects of function-based and nonfunction-based interventions for this population. Additionally, only two of four studies in which teachers served as the interventionists reported procedural fidelity data on the teachers' ability to implement the function-based and nonfunction-based interventions. Fidelity data on the teachers' ability to implement *all* phases of the FBA process were not available in these studies. In order to determine the feasibility of function-based interventions, future research addressing comparison studies should address a teacher's ability to implement FBAs and function-based intervention plans with the technical adequacy required for effective behavior change. Additionally, fidelity data should be collected on both function-based and nonfunction-based intervention implementation for true comparisons to be made between the two intervention types.

**Effective training of professionals on FBA.** As mentioned previously, lack of skills in conducting FBAs and developing function-based interventions may prevent teachers from implementing treatments. Ervin et al. (2001) conducted a review of studies regarding FBA in school settings and found that FBAs have been typically conducted by research professionals or other outside behavior specialists, rather than by school personnel themselves. Training has also been provided to one individual within a school, such as the school psychologist or special education teacher. Unfortunately, this type of designation is problematic because it often excludes general education teachers from the intervention planning process when the student of concern is served in the general

education classroom (Reid & Nelson, 2002). To be effective, Conroy, Clark, Fox, and Gable (2000) suggest that FBA training should be provided across several critical areas (e.g., knowledge and application of Applied Behavior Analysis, functional analysis and assessment techniques, development of multi-component interventions linked to FBA) and should include modeling and performance feedback on school personnel's implementation.

More recently, Van Acker, Boreson, Gable, and Potterton (2005) conducted 1- and 2-day inservice trainings on the FBA process and developing function-based interventions for individuals in more than 200 school districts who often went back and formed intact Individualized Education Program (IEP) teams in their schools. Participants who attended the trainings submitted their FBAs and intervention plans for critical review by authors in the study. Authors found that the majority of FBAs submitted contained serious flaws and there was a general failure to verify the hypothesized function of behavior before an intervention was attempted. Additionally, many teams did not consider the function of behavior identified in the FBA when developing the subsequent intervention plan. Results did indicate that participants who completed 2 or more days of inservice training produced better FBA results than those who completed less training. This finding is consistent with professional development literature in that one-day or half-day trainings were often insufficient and that a longer period of training (e.g., more than 14 days) with follow-up support after initial training led to better effects on student performance (Kretlow, Wood, & Cooke, 2009; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). More research is necessary on how best to train teachers on FBA so that they may become active and effective behavior change agents.

## Limitations of Current Research

**Current research on function-based interventions for African American students.** Although the effectiveness of function-based interventions on decreasing problem behavior has been well documented, its implementation is limited in at least two ways. First, teachers continue to use punitive and exclusionary measures for addressing problem behavior, despite their ineffectiveness in eliminating students' challenging behavior. Complexity of FBA procedures, lack of skills for effective implementation, and intensity of time investments further limit teachers' adoption of FBA and function-based interventions in schools. Second, only one study (Lo & Cartledge, 2006) purposefully focused on African American students to address their overrepresentation in special education through function-based interventions. In order to determine the usefulness of function-based interventions in reducing overrepresentation of African American students, more research is warranted.

**Current research on comparison studies.** Only six studies have sought to specifically examine the effectiveness of function-based interventions compared to nonfunctional and more traditional classroom interventions on reducing problem behavior among at-risk students or students with disabilities. Although results of such studies support function-based interventions as a more effective and efficient means than traditional, nonfunction-based interventions, the research base remains very narrow in scope. In addition, there has been an overall lack of data on teachers' ability to implement function-based and nonfunction-based interventions, and no fidelity data were reported on teachers' ability to implement all phases of the FBA process (i.e., interviews, observations, functional analyses, plan implementation). These data are critical in

providing support for the practicality of FBA implementation by teachers in the classroom setting. Perhaps most importantly, there are no current comparison studies that specifically target African American students. Such studies could make a major contribution to the field as an approach for addressing disproportionality in special education and disciplinary actions through more effective and preventative behavioral strategies.

### *Summary*

Multiple factors have been hypothesized by researchers and experts in the educational field that attempt to explain the disproportionate representation of African American students in the category of ED in special education and in disciplinary action. Even though many factors such as assessment bias and poverty have been addressed by recent research, inadequate academic and behavioral resources in general education classrooms is a factor that still necessitates research-based solutions. Use of FBA by general education teachers is one potential research-based approach to preventing disproportionality, and its empirical effectiveness in reducing students' problem behaviors is well-documented. Despite its effectiveness, FBA is still less-often used than punitive and exclusionary practices in general education. This fact may be due to multiple factors, including: (a) the complexity of FBA implementation when compared to other behavior practices such as time-out, office referrals, suspensions, and expulsions; (b) the immediate negative reinforcement teachers receive from punitive measures; and (c) general education teachers' lack of adequate training on FBA. Research is warranted that addresses not only a teacher's ability to implement the FBA but how effective FBAs and function-based behavior support plans are in changing the behavior of African American

students at risk for ED when compared to traditional nonfunctional behavioral practices. Such research will also contribute to the field's knowledge on the potential effectiveness of FBA-based interventions on reducing or preventing disproportionality of African American students in special education and disciplinary referrals by more effectively supporting these students in the general education settings.

*Purpose of Study and Research Questions*

Given the limitations of previous research on function-based interventions and their comparisons to nonfunction-based interventions, research is needed to determine if function-based interventions are more effective than nonfunction-based interventions in addressing the challenging behavior of African American students at risk for ED and their potential impacts on reducing unnecessary special education referrals. Additionally, there is a need for research on FBA to include systematic and well-defined methods that allow teachers to develop and implement each phase of the FBA process with a high degree of skill and relative ease.

This study seeks to answer five research questions.

1. What are the comparative effects of function-based versus nonfunction-based interventions on the classroom problem behavior of African American elementary students at risk for ED?
2. What are the effects of function-based interventions on the appropriate replacement behavior of African American elementary students at risk for ED?



3. To what extent does a training package that includes coaching and performance feedback improve general education teachers' abilities to conduct FBAs and implement function-based interventions with high fidelity?
4. To what extent do teachers implement nonfunction-based interventions with high fidelity?
5. To what extent can teachers generalize learned skills during FBA training to new student behavior?

Additionally, this study will answer two social validity research questions.

6. What are teachers' opinions regarding the practicality and effectiveness of conducting FBAs?
7. What are teachers' opinions regarding the practicality and effectiveness of function-based versus nonfunction-based interventions on decreasing students' problem behavior and on preventing special education referrals?

### *Significance of the Study*

This study has the potential to add to the research base in multiple ways. First, this study can add to the efficacy of using function-based interventions over more traditional methods of classroom discipline that do not address the function of an individual's behavior. Second, the study may broaden the generalizability of function-based interventions to a new population of students by targeting African Americans who are at risk for ED. Specifically, this study can provide support for the use of function-based interventions as a proactive approach to addressing problem behavior and aiding in the prevention of continued disproportionality of these students in special education and disciplinary referrals. Third, because the interventions will be teacher-implemented, this

study may provide support for the practicality of teachers being the primary change agents in the FBA process. Furthermore, collecting procedural fidelity data across all phases of the FBA process can offer additional support for the ability of classroom teachers to implement FBAs with high fidelity. The training package in this study may also provide an effective model for training teachers to implement FBAs effectively and practically.

#### *Limitations/Delimitations*

This study will seek to evaluate the comparative effects of function-based interventions versus nonfunction-based interventions on classroom problem behavior of African American students at risk for ED. It is critical to define the limits or boundaries of the current study so that readers may interpret findings from this study accurately. First, this study will be conducted using single-subject methodology. With these designs the ability to generalize findings to populations other than those examined in this study is limited. However, the internal validity of this study will be strengthened through the use of quality indicators for this type of research outlined by Horner et al. (2005). Replications of the study with other populations would also allow for broader generalizations to be made. A second limitation is that this study will only be conducted with elementary students in general education classrooms, which affects the ability to generalize results to other students in other settings.

#### *Definitions*

The terms defined below are used throughout the description of related literature and methodology of the proposed study. Knowledge of these terms is critical in fully understanding the study's purpose and potential contributions to the research base.

*African American students:* any student who self-identifies or is identified by families as black or African American

*Coaching and performance feedback:* training that includes live assistance, correction, or reinforcement provided to a participant while practicing or applying a newly learned skill

*Culturally and linguistically diverse students:* students who may differ from the mainstream in race, ethnicity, primary language spoken at home, and social class (Au & Raphael, 2000).

*Disproportionality:* when the proportion of students within a given disability category that belong to a particular race or ethnicity does not equal the proportion of all students comprised by that race or ethnicity in the general population; it includes overrepresentation and underrepresentation (Cullinan & Kauffman, 2005)

*Efficiency:* the combined result of how much physical effort is required, how often behavior must be performed before it is reinforced, and how long a person must wait to receive the reinforcement (O'Neill et al., 1997)

*Emotional disturbance (ED):* The Individuals with Disabilities Education Act (IDEA) amendments of 2004 defines the disability category of *emotional disturbance* as “a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child’s educational performance: (a) an inability to learn which cannot be explained by intellectual, sensory, or health factors, (b) an inability to build or maintain satisfactory interpersonal relationships with peers and teachers, (c) inappropriate types of behavior or feelings under normal circumstances, (d) a general pervasive mood of

unhappiness or depression, (e) a tendency to develop physical symptoms or fears associated with personal or school problems....includes schizophrenia....does not apply to children who are socially maladjusted, unless it is determined that they have an emotional disturbance” (IDEA, 2004, § 300.8 [a][4][i]).

*Externalizing problem behaviors:* (a) being verbally or physically aggressive, (b) failing to control temper, (c) arguing with peers or adults, (d) bullying (defined as forcing others to do something, hurting people physically or emotionally, and not letting others join an activity), and (e) hyperactivity and inattentiveness (e.g., moving about excessively, having impulsive reactions, and visibly distracted; Gresham & Elliott, 2008).

*Fidelity:* the extent to which an intervention is applied exactly as planned and described and no other unplanned variables are administered inadvertently along with the planned intervention. Also called *procedural fidelity* or *treatment integrity* (Cooper et al., 2007)

*Function:* the purpose or the “why” behind an individual’s behavior rather than the topography or physical form of a behavior (Gresham et al., 2001)

*Functional analysis:* a set of systematic experimental procedures in which “antecedents and consequences representing those in the person’s natural environment are arranged so that their separate effects on problem behavior can be observed and measured.”(Cooper et al., 2007, p. 504).

*Function-based:* based on the results of information gathered and analyzed through conducting a functional behavioral assessment in which the function or purpose of behavior has been taken into account (e.g., function-based intervention)

*Functional behavior assessment (FBA)*: a systematic and multi-dimension process for collecting information on environmental events that reliably predict and maintain problem behaviors across time (Scott, Nelson, & Zabala, 2003; Sugai et al., 2000)

*Internalizing problem behaviors*: (a) feeling anxious, sad, or lonely, (b) poor self-esteem (e.g., making negative self-statements, not advocating for oneself), and (c) socially withdrawn (Gresham & Elliott, 2008).

*Nonfunction-based*: not based on the results of a functional behavioral assessment; a behavioral intervention that blocks the function or does not serve or address the function of behavior

*Problem behavior event*: all the problem behaviors in an incident that begins with a problem behavior and ends only after 3 min of no problem behavior (O'Neill et al., 1997)

*Topography*: the physical form of behavior; the way it looks or is observed (Cooper et al., 2007)

## CHAPTER 2: LITERATURE REVIEW

The disproportionality of African American students identified as ED is a long-standing problem in special education. In an effort to address the problem of disproportionality in general, the reauthorization of IDEA (2004) mandated that all states collect and examine data to determine if disproportionality in regards to race or ethnicity is occurring with respect to: (a) the identification of children as having disabilities; (b) the least restrictive educational placement of these children with disabilities; and (c) the incidence, duration, and type of disciplinary actions, including suspensions and expulsions. Additionally, IDEA requires that states with disproportionality in special education and disciplinary actions develop solutions and interventions to address the problem.

To aid in correcting students unnecessarily identified as having ED, the federal government mandated the appropriation of funds for scientifically-based research strategies that address the inappropriate behavior of students with disabilities as well as strategies to prevent children with behavior problems from eventually requiring special education services under the disability category of ED (IDEA, 2004). Despite this mandate, identifying effective interventions to address and prevent disproportionality has been slow (Hosp & Reschly, 2004). One promising intervention recommended by researchers as a means to address disproportionality among African American students in special education and disciplinary action is FBA and the behavior intervention plan upon which it is based (Yell & Shriner, 1997). This review of the literature will discuss four

major themes, including: (a) African-American students at risk for ED and disproportionality, (b) conceptual foundations, process, and effects of FBA, (c) function-based interventions, and (d) professional development in FBA.

### **African-American Students at Risk for Emotional Disturbance and Disproportionality**

#### *Risk Factors for Developing ED*

Several descriptors are used to characterize students who do not achieve academically or socially when compared to their same-age peers. One of the most common terms used in the field of education is “at risk.” Even though states are given the opportunity to define for themselves what it means to be at risk, some salient characteristics are evident across the nation. Lane and Menzies (2003) described students at risk, as those who “deviate from normative performance” (p. 431) in an academic, behavior, and/or social domain, which results in problems with learning and behavior. At-risk students are also described as children living in poverty, English Language Learners (ELL), migratory students, neglected and delinquent children, homeless children, immigrant students, teen parents, refugee children, or ethnically identified students (U.S. Department of Education, 1994).

Researchers have further defined the meaning of “at risk” with specific regard to behavioral concerns. For example, Severson and colleagues (2007) define behaviorally at-risk students as those “(a) who are on a trajectory to later destructive outcomes due to risk factor exposure in the first five years of life and (b) who present moderate to severe behavioral challenges to their teachers, peers, and sometimes primary caregivers” (p. 194). These behavioral risk factors have been defined as “events that occur at the child, family, and environmental levels that increase the probability of diagnosis or the severity

of a serious emotional disturbance (e.g., physical abuse, sexual abuse, family violence, and drug-alcohol abuse; family history of mental illness, violence, or drug-alcohol abuse)” (U. S. Department of Health and Human Services, 1998).

Much research has been conducted on such potential risk factors in children for developing ED. Some of the most salient environmental risk factors associated with the development of chronic behavior problems identified in the literature include (a) poverty, (b) subjection to domestic violence, and (c) child maltreatment (Conroy & Brown, 2004). In an attempt to further examine and define specific early parent/family predictors of problem behavior, Nelson, Stage, Duppong-Hurley, Synhorst, and Epstein (2007) conducted two logistic regression analyses to identify variables that would best predict clinical levels of problem behavior of kindergarten and first grade children. Results from the initial logistic regression indicated five factors most predictive of problem behavior including (a) externalizing behaviors, (b) internalizing behaviors, (c) child maladjustment, (d) family functioning, and (e) maternal depression. When these factors and the individual variables within them were further analyzed, the best predictors of problem behavior were found to be difficult child, destruction of own toys, and maternal depression. The authors recommended that school personnel and developers of early screening tools for children at risk for ED should consider the inclusion of these essential parent/family predictors in their screening efforts. Additionally, the authors suggested that the more comprehensive the screening program, the more successful school personnel will be in creating effective prevention and early intervention services for these students.



Although research such as that conducted by Nelson et al. (2007) has allowed for the development of early intervention strategies targeted for preventing ED in young children, there remains a lack of interventions to support pre-adolescent and adolescent students at risk for ED (Lane, Wehby, & Barton-Arwood, 2005). Without effective early interventions, these students are likely to experience increased difficulty with social adjustment and in meeting academic and behavior expectations (Farmer et al., 2008); and those who eventually become eligible for ED often do not exit special education until they leave high school or drop out of school (NEA, 2008). For African American students who make up 17% of the total school population but disproportionately represent 27% of the students with ED (National Center for Education Statistics, 2003), successful outcomes are far too sporadic.

#### *Disparate Representation of African American Students*

The majority of students identified as at risk are African American (Gay, 2000). Even though research has provided potential explanations such as poverty or cultural bias as factors leading to a higher proportion of African American students being identified with an at-risk status, research findings are conflicting (Gardner & Miranda, 2001).

To investigate possible contributing factors of racial disproportionality, Oswald and colleagues (1999) conducted logistic regression analyses to examine the extent to which African American students were disproportionately represented in special education in the categories of mild MR and ED and to determine which economic, demographic, and educational variables at the district level may be associated with disproportionality. The data used in the analyses were taken from an existing national database using a stratified random sampling methodology that was a representative

national sample of U.S. school districts. Results of the analyses indicated that African American students were 1.5 times as likely to be identified with ED when compared to their non-African American peers. Additionally, the authors investigated whether environmental factors (i.e., housing, income, poverty, at-risk status, dropout rates, LEP) increased the likelihood of placement into special education. Results indicated that all environmental factors were significantly related to the probability of being identified with ED or mild MR. However, when race was added to the model the predicted rates of being identified as ED or mild MR increased, indicating that race-related factors more clearly influenced the identification of African American students into the two special education categories when compared to non-African American students. The authors indicated an importance for quasi-experimental and single-subject designs to examine possible effective interventions at the prereferral, referral, assessment, and identification phases in an attempt to prevent disproportionality in ED and mild MR for African American students.

In a more recent study, Skiba and colleagues (2005) conducted ordinary least squares (OLS) and logistic regression analyses to estimate the impact of sociodemographic and poverty-related variables on minority overrepresentation in several disability categories and to determine the relationship between race and poverty in predicting special education identification. Results from this study produced several significant and important findings. First, poverty did not significantly predict overall levels of disproportionality or overall special education enrollment in ED. Second, suspension and expulsion rates were significant predictors of racial disproportionality in the ED category. Third, when considering only race, African American students were

more than two times more likely than students of any other race to be identified as having ED. Finally, when both race and poverty were entered simultaneously into the logistic regression analysis, both had independent effects on the odds of being placed into special education. In fact, race was more predictive of special education identification than low income across all disability categories.

In addition to the overrepresentation in special education referral and placement, African American students receive disproportionate referrals for disciplinary actions (Cartledge & Dukes, 2008; Skiba et al., 2002, 2005). To examine the potential disproportionate rates in disciplinary action of African American students, Skiba and colleagues (2002) conducted descriptive and multivariate analyses on the discipline referral data of over 11,000 students in a large urban, midwestern public school district. Initial descriptive comparisons of the data revealed that African American students and males were overrepresented on all measures of school discipline (i.e., referrals, suspensions, expulsions) when compared to Caucasian students and female students and that disproportionality of African Americans and males increased as one moves from suspension to expulsion. A more detailed analysis reveals that African American males had the highest frequency of disciplinary referrals. Additionally, the authors used a two-factor ANCOVA to evaluate the correlation between the disproportionality in discipline and socioeconomic status (SES) or race. Results indicated that racial differences remained when SES was controlled for statistically. The authors also explored the differences between race and gender in administrative action (i.e., mean number of days suspended after referral). Results indicated there were no significant differences by race in the measures related to the administration of consequences at the office level. This

finding indicates that the disproportionality lies at the classroom level with the initial referral to the office, rather than at the administrative level where reprimands are issued.

Finally, the authors conducted two discriminant analyses to explore differences by race and gender regarding reasons for the office referrals. Although evidence emerged that males engaged more frequently in a broad range of disruptive behavior, the analysis for race provided no evidence that the group with the higher rates of discipline referrals (i.e., African American students) were referred for a greater variety of offenses or more serious offenses. Instead, a differential pattern of treatment emerged that indicated African American students were referred to the office for infractions that were more subjective in interpretation. Specifically, Caucasian students were significantly more likely than African American students to be referred to the office for smoking, leaving without permission, vandalism, and obscene language. African American students were more likely to be referred for disrespect, excessive noise, threat, and loitering. This study added to the research base on racial disproportionality in school suspensions in that it originates primarily at the classroom level support and supports previous findings that the disproportionate discipline of minority students appears to be associated with an overuse of negative and punitive disciplinary tactics.

Recently, Krezmien and colleagues (2006) conducted a logistic regression analysis on the unduplicated suspensions of all Maryland public school students between 1995 and 2003 to examine changing trends in overall rates of suspension with regard to race and disability. The authors found that the number of overall suspensions increased from 85,071 in 1995 to 134,998 in 2003, an increase of 58.7% during the 9-year period. The number of students suspended increased by 24,439 (47.8%) from 1995 to 2003, but

the total school enrollment increased by only 9.6% during the same period. Logistic regression analysis revealed that African Americans with no disability were suspended 2.53 times more than Caucasian students without disabilities. Additionally, African Americans with ED were 4.48 times more likely to be suspended than Caucasian students with ED. In fact, African American students within any disability category except the Other Health Impairment were more likely to be suspended than students without disabilities and students from the same disability category from any other racial group.

### *Summary*

The research on disproportionality in special education and disciplinary actions of African Americans indicates that potential positive educational outcomes of African American students are in jeopardy. This disconcerting fact is not because African Americans inherently exhibit more problem behaviors to be identified as ED or to receive more discipline referrals but is due to a lack of appropriate assessments and effective interventions for this population. A promising solution to the problem of disproportionality among African American students is FBA and function-based interventions. Functional behavioral assessment can be a proactive approach to managing problem behaviors before students become identified as ED in special education programs. The use of FBAs and function-based interventions can decrease the exclusionary practices imposed on African American students and address disproportionality in both special education and disciplinary action.

### **Conceptual Foundations, Process, and Effects of Functional Behavioral Assessment**

Functional behavioral assessment (FBA) has been defined as a systematic and multi-dimensional process for collecting information on environmental events that

reliably predict and maintain problem behaviors across time (Scott, Nelson, & Zabala, 2003; Sugai et al., 2000). More specifically, FBA is a process of collecting data on the triggering antecedents (e.g., request to read aloud in front of class), students' observable behaviors (e.g., student feigns illness), consequences (e.g., escapes difficult tasks) and possible setting events (e.g., was late to school and received no breakfast) to determine the *function*, or purpose, of an individual's behavior. When the behavioral function has been verified, the focus then shifts towards the identification and implementation of a behavioral intervention that reduces problem behavior and increases appropriate behavior (Gresham, Watson, & Skinner, 2001; O'Neill et al., 1997).

### *Conceptual Foundations*

The conceptual foundations of FBA are derived from Skinner's (1953, 1974) philosophy of radical behaviorism and development of principles of behavior. Skinner created the theory of radical behaviorism as a means to understand all human behavior, including private events (e.g., cognitive processes) that cannot be physically or externally observed. A component of radical behaviorism is the principle of operant behavior. This principle is based on the concept that the future occurrence or nonoccurrence of a behavior is a function of its history of consequences. Cooper and colleagues (2007) describe operant behavior as being "selected, shaped, and maintained by the consequences that have followed it in the past" (p. 31).

As an extension of Skinner's (1953) radical behaviorism and operant conditioning, applied behavior analysis (ABA) involves examining behaviors of social significance to participants in natural, applied settings such as the school, playground, or community (Gresham et al., 2001). Applied behavior analysis uses the methods of FBA

to target environmental and contextual factors (e.g., antecedents, consequences, setting events) to aid in creating and implementing function-based behavior interventions that will change problem behaviors (Gresham et al.). A foundational principle of FBA is to examine the function of an individual's problem behavior as a basis for behavior change (Cooper et al., 2007). The function of behavior refers to the purpose or the "why" behind an individual's behavior (Gresham et al.). Based on Skinner's (1953) operant learning theory, two broad, overarching functions of behavior exist: positive reinforcement and negative reinforcement. Positive reinforcement occurs when a behavior is followed immediately by the presentation of a stimulus, increasing the likelihood of future occurrences of that same behavior (Cooper et al., 2007). Negative reinforcement occurs when a behavior is followed immediately by the removal or termination of an aversive stimulus, increasing the likelihood of future occurrences of that same behavior (Cooper et al.).

According to Carr (1994), behavioral functions can be further broken down into five categories: (a) social attention (positive reinforcement), (b) access to tangibles (positive reinforcement), (c) escape or avoidance of tasks (negative reinforcement), (d) escape or avoidance of other individuals (negative reinforcement), and (e) gain internal or sensory stimulation (positive reinforcement). Alberto and Troutman (2006) include escape from sensory stimulation (negative reinforcement) as a sixth behavioral function that can also be found in the literature. To illustrate such behavioral functions, a student may make jokes during science class to gain the social attention of his peers or teacher. To gain access to tangible items, such as a carton of milk, a student may take it from his peer without asking. To escape a difficult math task or an individual he perceives as a

threat, a student may exhibit noncompliance. Finally, a student may rub his back on the corner of the bookshelf to gain a tickling sensation or he may scratch his arm until it is raw to escape an uncomfortable internal pain.

When conducting FBAs, it is critical to understand a problem behavior as it relates to behavioral function rather than topography or the physical form of behavior. From an operant learning perspective, function of behavior is more important than topography in understanding and changing behavior. By addressing the topography of behavior rather than the consequences that may be maintaining the behavior, interventions may be rendered ineffective. For example, one student may make jokes aloud to gain the social attention of his peers (positive reinforcement) while his science teacher is lecturing in front of the class, and another student may make jokes aloud in the same setting in an attempt to be reprimanded by the teacher and escape from a difficult task or person (negative reinforcement). The topography of behavior gives relatively little information about the conditions that account for it. Understanding the context of the conditions in relation to a problem behavior (i.e., function) will provide insight as to what conditions must be changed in order to alter the behavior (Cooper et al., 2007). Therefore, to increase the likelihood that interventions put in place can be effective in changing behavior, the positive and negative reinforcement contingencies that maintain problem behavior must be addressed during intervention development.

#### *Process and Effects of FBA*

Functional behavioral assessment can comprise multiple methods. There are, however, four major components or phases of FBA that can be found throughout the literature base: (a) *indirect informant methods* that are used to define and narrow down



the environmental and contextual variables that may affect the behaviors of concern, (b) *direct observations* that allow for the development of summary statements or hypotheses regarding behavioral function, (c) *functional analysis manipulations* that allow for verification of generated hypothesis statements, and (d) *behavior support plan development* in which interventions are developed based on the results of the first three FBA phases (Alberto & Troutman, 2006; Cooper et al., 2007; O'Neill et al., 1997).

O'Neill and colleagues (1997) developed a practical handbook that encompasses the four major components of FBA for professionals to use efficiently in applied settings. Studies that have been conducted using the FBA procedures outlined by O'Neill et al. have been effective in changing problem behavior (e.g., Ingram, Lewis-Palmer, & Sugai, 2005; Kamps, Wendland, & Culpepper, 2006; Newcomer & Lewis, 2004; Roberts, Marshall, Nelson, & Albers, 2001). The procedures of FBA identified by O'Neill et al. will be used in the current study to extend their practicality and usefulness to general education teachers. The four major components are reviewed in more detail below.

**Informant methods.** Informant or indirect assessment methods normally involve questioning a person or persons who are familiar with the students. Often times, these individuals are teachers, parents or other family members, paraprofessionals, related service providers, or the students themselves. Informant methods typically use structured interviews, rating scales, questionnaires, or checklists to obtain information needed to identify conditions or events in the natural setting that may set the occasion for a problem behavior (Cooper et al., 2007). These methods are considered indirect forms of behavioral assessment because they are limited by the informant's memory rather than direct observations of the behavior under question (Alberto & Troutman, 2006). The

primary purposes of informant methods are to (a) describe the behaviors of concern, (b) identify general and more immediate physical and environmental factors that predict the occurrence and nonoccurrence of problem behaviors, (c) identify potential functions of the behaviors in relation to maintaining consequences, and (d) developing sound summary statements that describe relationships among situations, behaviors, and their functions (O'Neill et al., 1997). Summary statements are very formulaic and should describe three components based on the information gathered from the indirect assessments: (a) the situation in which problem behaviors most often occur (i.e., triggering antecedents, setting events); (b) the problem behavior that is occurring; and (c) the function the behaviors serve or the reinforcing outcomes they produce (O'Neill et al.). An example of a summary statement would be, "When Cierra is asked to complete a writing assignment independently, she is likely to tear up and throw materials to escape from the task demand. This behavior is more likely to occur when Cierra has missed breakfast in the morning."

**Direct observation methods.** Although informant methods provide a convenient means of gathering information on the function of an individual's problem behavior, they do not replace the data that can be acquired through systematic direct observation of behavior. Direct observation strategies are more reliable than informant methods (Alberto & Troutman, 2006). Direct observations allow those conducting FBAs to objectively validate or revise the summary statements created through the use of informant methods. Methods of direct observation may include the use of anecdotal notes, frequency counts, interval recording systems, scatter plot analyses, or A-B-C descriptive analyses (Alberto & Troutman, 2006; O'Neill et al., 1997). The primary purpose of collecting direct

observation data is to allow the individual conducting the FBA to confirm, revise, or add to the initial summary statements that were developed based on the information gathered from the informant methods. From a practitioner's standpoint, many of these methods may be cumbersome and not conducive to the typical classroom environment. However, direct observations become essential when information gathered from informant methods may be unclear or contradicting (e.g., between two raters).

Once sufficient data have been collected through informant methods and direct observations, decisions must be made regarding whether or not clear patterns and relationships have emerged. Often, if professionals feel confident in their summary statements at this stage, they may begin intervention plan development and implementation. However, if patterns still remain unclear, the persons involved may consider systematic functional analysis manipulations in an attempt to pinpoint or eliminate specific antecedent or consequence variables that may be influencing the targeted problem behavior (O'Neill et al., 1997). The next section discusses functional analysis in greater detail.

**Functional analysis.** A functional analysis is a set of systematic experimental procedures in which “antecedents and consequences representing those in the person's natural environment are arranged so that their separate effects on problem behavior can be observed and measured” (Cooper et al., 2007, p. 504). The process often involves comparing two or more conditions (e.g., attention versus escape, hard task versus easy task) that test the summary statement hypothesis. For example, a summary statement indicates that when working on independent tasks Moira hits her peers, and the maintaining function or consequence is believed to be peer attention. The summary

statement could be tested by using the following conditions: (a) Moira works on tasks alone and receives peer attention as soon as she engages in the problem behaviors, and (b) Moira works on the same tasks with a peer buddy. If the results indicate that the problem behaviors occurred only when she did not receive peer attention, then this validates the hypothesis defined in the summary statement. Functional analysis is the only method that allows verification of a true functional relationship between the targeted behavior and variables manipulated; therefore, it provides the greatest precision and confidence on the function of behavior (O'Neill et al., 1997) and is most often tested through single-subject reversal (ABAB) or alternating treatments designs. The use of functional analyses to verify behavioral function has been well supported in the literature for decades (e.g., Broussard & Northup, 1997; Iwata, Dorsey, Slifer, Bauman, & Richman, 1982, 1994). For example, Broussard and Northup (1997) conducted functional analyses with 4 elementary male students who were referred for disruptive classroom behavior that included excessive activity, inappropriate verbalizations, and throwing or tearing up materials. The authors conducted the functional analyses using alternating treatments designs that examined teacher attention, peer attention, and time-out/escape conditions for each participant. Results of the functional analyses conducted demonstrated that the peer attention condition yielded the highest percentage of intervals of disruptive behaviors for all 4 participants when compared to the teacher attention and time-out/escape conditions. As a result of the functional analyses, interventions were created for each student based on peer attention for appropriate behavior and extinction of peer attention for disruptive behavior. The interventions were effective in decreasing disruptive behaviors to zero for all 4 participants.

**Behavior support plan development.** After summary statements or hypotheses have been generated and confirmed through both indirect and direct assessment methods, and functional analysis manipulations, behavior support plans based on all data gathered should be designed and implemented. According to O'Neill et al. (1997), four considerations are important in the design of behavior support plans. First, the plan should indicate how staff, family, support personnel will change and not just focus on the change of the student of concern. Second, the plan should be directly based on the FBA results, addressing the behavioral function. Third, the plan should be technically sound, indicating that it is consistent with the principles of ABA. Finally, the plan should be a good fit with the values, resources, and skills of the persons responsible for its implementation. Importantly, behavior plans should also focus on making problem behaviors irrelevant, inefficient, and ineffective (O'Neill et al., 1997). In order to make problem behaviors irrelevant, it requires manipulating the triggering antecedents or setting events that set the occasion for the behavior. Making problem behavior irrelevant usually involves structural changes such as altering the physical environment, revising activities or curricula, or increasing predictability and choice options available to the person (O'Neill et al.). For example, if FBA data reveal that long math tasks are aversive for Brian and trigger his non-compliant behavior, then breaking up such tasks into smaller, less frustrating assignments can make his noncompliant behavior irrelevant. Research on the effectiveness of antecedent-based strategies used in behavioral interventions are well documented in the literature (e.g., Cihak, Alberto, & Fredrick, 2007; Moore, Anderson, & Kumar; 2005; Roberts et al., 2001). For example, Cihak et al. (2007) conducted a study using an alternating treatments design to compare an

antecedent-based self-auditory prompt intervention and a consequence-based intervention that used differential reinforcement of alternative behavior (DRA) on the problem behavior of 4 high school students with moderate to severe disabilities. The interventions were chosen based on a brief functional analysis for each student in which the problem behaviors of all 4 students were maintained by escape from task demands. The comparisons revealed that the antecedent-based intervention worked as effectively as or more effectively than the consequence-based DRA intervention. These findings indicate that both interventions match the function of students' behavior based on functional analyses and both interventions were effective decreasing escape-maintained problem behavior and increasing task engagement for all 4 participants.

A technically sound behavior support plan will also make problem behavior inefficient (O' Neill et al., 1997). Behavioral efficiency is a combination of (a) required physical effort, (b) number of times a person must perform the behavior before the behavior is reinforced, and (c) the time between the behavior and the reinforcement (O' Neill et al.). An example of an efficient behavior may be one in which a student blurts out the answer in class to gain assistance/attention from his teacher and immediately receives that attention. The blurting out behavior takes little physical effort, the student only had to perform the behavior once before being reinforced, and the teacher immediately responded to the behavior with attention. An effective intervention plan should define an alternative, socially appropriate, and at least as or more efficient way for the person to achieve the same behavioral function (O'Neill et al.). Such a behavior for the above example could be to explicitly teach (i.e., modeling, coaching, roleplay, practice) the student to recruit attention or assistance by raising his or her hand or to use a special card

to indicate that the student needs assistance from the teacher and that attention/assistance is provided immediately upon appropriate demonstration of the new behavior. If the student more consistently and immediately receives assistance or attention by raising his or her hand and does not receive such a response from the teacher when the blurting out behavior occurs, the problem behavior is likely to decrease over time.

Finally, an effective behavior support plan should render the problem behavior ineffective (O'Neill et al., 2007). This usually involves manipulation of consequence strategies such as extinction or differential reinforcement. Extinction involves systematically withholding or preventing access to a reinforcer that has a history of being effective in the past (O'Neill et al.). For example, if Jennifer throws a tantrum to escape from a difficult reading task and her behavior has been reinforced by getting to leave the reading group in the past then this is an effective behavior. Extinction of such a behavior would require the teacher to block access to the function (e.g., escape from difficult task) of Jennifer's behavior. In this case, the teacher would not allow Jennifer to leave the reading group. Sometimes extinction alone is difficult, especially when dealing with severe or self-injurious behaviors. In situations such as these, it is not always optimal to "ignore" behavior. Often times, extinction when paired with differential reinforcement strategies can be more effective in decreasing problem behavior. An example is differential reinforcement of alternative behavior (DRA) which involves reinforcing only the newly taught, socially acceptable behavior (Alberto & Troutman, 2006). For example, if Jennifer is taught to use her "peer buddy" card during reading group as a means to escape from large group reading tasks then a DRA strategy would entail the teacher reinforcing her appropriate use of the "peer buddy" card and allowing her a form of

escape by reading with a peer buddy rather than a whole group. Additionally, the teacher may set up a reward contingency, such as a token economy, to further reinforce her alternative behavior. Differential reinforcement strategies often aid in increasing appropriate behavioral responses and decreasing problem behavior. An example of this is the study by Broussard and Northup (1997) previously described. After validating their hypothesis that peer attention was the maintaining function of the 4 participants' disruptive behavior, peer attention intervention procedures using differential reinforcements of other behavior (DRO), extinction, and fading were introduced. Specifically, peer attention for appropriate behavior was provided by allowing the participants to earn time with a peer of their choice contingent upon the nonoccurrence of disruptive behaviors. Peer reinforcement was implemented by providing token coupons to the participants that were equivalent to 1 min of time with a peer. Coupons were placed on a corner of the student's desk by the teacher with no comment or interaction. Students received an opportunity to engage in the peer activity immediately following the observation sessions. Extinction of peer attention was implemented by explicitly instructing the peers not to interact with the participant when he or she exhibited disruptive behavior. These instructions were given to the peers individually in the absence of each participant. Successful fading of the peer attention DRO procedure from a DRO of 1 min to a DRO of 10 min was also demonstrated. The DRO intervention was successful in decreasing the disruptive behavior to zero for all 4 students.

Although effective function-based intervention plans have been developed in which only one variable has been manipulated (e.g., antecedent-based intervention, consequence-based intervention), much of the research base involves the careful



manipulation of multiple components that relate to the function of a student's behavior (e.g., Kamps et al., 2006; Lane et al., 2007; Lo & Cartledge, 2006; Newcomer & Lewis, 2004). It is important to provide a comprehensive behavior support plan when attempting to change behavior; therefore planning antecedent-based, teaching, and consequence-based strategies is critical.

### *Summary*

Although researchers have developed multiple methods for conducting FBAs, the procedures described by O'Neill and colleagues (1997) have provided a practical means of conducting what have been considered time-consuming and cumbersome processes by teachers in applied settings. Informant methods, direct observations, and functional analyses components as discussed by O'Neill et al. are effective in allowing professionals to create and implement comprehensive behavior support plans that focus on changing behavior from a functional viewpoint. More research is needed to explore the extent of practicality and usefulness of these procedures when working within the general education setting.

### **FBA-based Interventions**

The most important outcome of conducting an FBA is to create an individualized intervention designed to decrease problem behaviors and increase socially acceptable alternative behaviors while maintaining the original behavioral function. Intervention development and implementation is the final stage of the FBA process, and the effectiveness of such interventions has been evident for decades across student populations, behaviors, and settings.

*FBA and Function-based Interventions*

The effectiveness of FBA and function-based interventions for students with ED and those at risk for developing ED have been well documented. In fact, three comprehensive literature reviews or meta-analyses studies are currently available (i.e., Heckaman, Conroy, Fox, & Chait, 2000; Lane, Umbreit, & Beebe-Frankenberger, 1999; Reid & Nelson, 2002) and several empirical research studies have specifically targeted students at risk for developing ED in their investigation. This section provides a brief summary of these studies.

**Comprehensive literature reviews.** Lane and colleagues (1999) conducted a review of the functional assessment research on students with or at risk for ED and found 19 articles that met the following inclusion criteria: (a) published after 1989, (b) at least one FBA technique was explicitly used, and (c) participants were students with or at risk for ED. Of the 19 articles reviewed, nine studies used the FBA results to design and implement function-based interventions whereas the remaining articles addressed the implementation of the FBA procedures without attending to the intervention implementation. Seven of the nine function-based intervention studies focused on antecedent strategies and five of the studies included a consequence-based adaptation in the intervention plans. The results from the nine function-based intervention studies indicated that the interventions developed based on students' behavioral functions were successful in decreasing inappropriate behaviors and increasing appropriate behaviors of students with ED. Treatment integrity data were reported in seven of the nine studies, and treatment acceptability was assessed in five of the nine studies. The authors indicated that very few studies (3 out of 9) included maintenance data to examine the effects of the

interventions across time. A year later, Heckaman and colleagues (2000) reviewed 22 studies between 1991 and 1999 that involved the use of FBA procedures to develop function-based behavior support plans for students with or at risk for ED. The authors found that 82% (18 out of 22) of the reviewed studies showed clear decreases in targeted problem behaviors and/or increases in appropriate behavior as a result of the FBA and function-based treatments. The review also found that 68% (15 out of 22) of the studies report descriptive assessment data, and 73% (16 out of 22) of the studies included interventions that were implemented by staff in the classroom setting rather than by the experimenter. This review illustrated the effectiveness of using FBA and function-based interventions for students with ED or those at risk for developing ED by classroom teachers. However, many of the studies lacked key characteristics suggested by researchers in the field to be considered high quality empirical studies. Specifically, only 55% (12 out of 22) of the reviewed studies reported the procedural fidelity of FBA and interventions used, only 50% (11 out of 22) reported social validity data, and only 23% (5 out of 22) included some measure of acceptability of FBA and interventions used in the school settings. These results indicated that future FBA research should focus on systematically measuring the relationship between implementation fidelity and student behavior change. Additionally, more research should be conducted that explores the social and practical implications of FBA use by classroom teachers.

To determine the utility, acceptability, and practicality of FBA with students with ED, ADHD, and high-incidence problem behaviors, Reid and Nelson (2002) reviewed 14 studies published between 1993 and 1999 that met their inclusion criteria of having conducted an FBA with students without severe developmental disorders in a school

setting. The results indicated that FBA procedures can be effective in accurately identifying the functions of students' problem behavior, and the interventions created to address such functions were also effective for a wide range of students and classroom settings. Similar to the findings in the review by Heckaman et al. (2000), Reid and Nelson found that only one study examined maintenance data on the function-based interventions and none examined generalization effects. Additionally, in all but one of the studies, the FBA process was performed entirely by the researchers except for limited teacher involvement in hypothesis development. As a result, the practicality of FBA and function-based interventions for school personnel remains limited.

**Studies on function-based interventions for at-risk students.** More recent studies on function-based interventions have been conducted that *purposefully* target elementary-age students identified as *at risk* as a means to determine if such interventions can be used as effective methods for improving social behavior and decreasing disciplinary referrals or special education referrals, especially in the category of ED. For example, Moore et al. (2005) used an alternating treatments design to examine the effectiveness of a function-based intervention with a focus on an antecedent-based strategy of reducing the task duration on the off-task behavior of a first-grade male student whose behavior was maintained by escape in an urban general education classroom. Results from the study indicated that the antecedent-based strategy was effective in decreasing his off-task behavior. The authors suggested that the effects of the alteration of task difficulty on student learning and performance should be examined in future research and that systematic replications were needed to create a more robust research base on antecedent-based strategies. This study, however, was limited in that the

FBA process and subsequent intervention were developed and implemented primarily by the experimenter, which hinders the ability for researchers to determine the practicality of this process being delivered by the classroom teacher.

More recently, Stahr, Cushing, Lane, and Fox (2006) used FBA results to conduct a multiple-baseline design across subjects with an embedded withdrawal design study to examine the effectiveness of a multi-component function-based intervention (i.e., communication system, self-monitoring, extinction) on the on-task behavior of a 9-year-old African American student with ADHD who was being served in a self-contained school for students with emotional and behavioral problems. Results from the study indicated that the function-based intervention was effective in increasing the student's on-task behavior in both language and math classes. Lane et al. (2007) also examined the effectiveness of a multi-component function-based intervention on the problem behavior of a first-grade Caucasian female at-risk for ED through the use of a changing criterion design. Results showed a functional relationship between the function-based intervention and changes in the student's nonparticipation behavior, with her participation increasing to match the reinforcement criterion established at each phase. Although this study was primarily teacher delivered, the authors suggested that more research must be conducted to determine the extent to which teachers can implement the entire FBA process and deliver function-based interventions in school settings.

**Function-based interventions with African American students.** To date, only two studies have involved African American students as participants in FBA implementation. Specifically, Kamps, Wendland, and Culpepper (2006) conducted a study of FBA effects using a reversal design (i.e., an ABAB design for one student and

an AB design for the other student) for two 7-year-old African American students at risk for ED. The authors wanted to determine the extent to which the classroom teacher could assist in implementing the FBA procedures through structured interview information and reliably implementing the functional analysis conditions within the natural environment given other classroom responsibilities. The authors also sought to determine whether classroom-based functional assessments and functional analyses led to effective interventions. For this study, functional assessment interviews, direct observations, collaborative meetings with teachers, and functional analyses were part of the FBA process. The function-based intervention consisted of: (a) increased teacher praise and points for appropriate behavior, (b) self-monitoring of behavior, (c) limited reminders of class rules (attention to inappropriate behavior), (d) modeling to decrease task difficulty, (e) “help tickets” for academic assistance from peer, and (f) increased social reinforcement for task completion. Results from the study indicated that the function-based intervention decreased disruptive behavior and increased on-task behavior compared to baseline for group and independent work. The FBA procedures used in this study were successful in determining the function of inappropriate behavior and led to effective intervention. This study was an important addition to the literature because of the teacher involvement throughout the entire FBA process. However the major limitation was that no procedural fidelity data were collected on the FBA and intervention implementation.

Lo and Cartledge (2006) also targeted African American students in their investigation of the effects of FBA procedures and function-based support plans on the off-task behavior of four elementary-aged male students. The authors used a multiple-

baseline-across-participants design to examine the effectiveness of FBA procedures and function-based interventions that comprised several components, including (a) skills training, (b) consequence-based interventions, and (c) self-monitoring strategies. Results from this study indicated that all students reduced their levels of off-task behavior when function-based behavior intervention plans were used, and a functional relationship was established between the function-based interventions and decreases in the participants' off-task behavior. This study also added to the research base by providing evidence that behavior levels were maintained after removal of the interventions. Furthermore, generalization data, collected during instructional periods in which interventions were not provided, revealed moderate decreases in off-task behavior for all participants. Finally, this study examined the relationship between function-based interventions and disproportionality in special education; findings indicated that all four students remained in their current placements, without referrals to special education for the two at-risk students or more restrictive placements for the two students already identified with ED. This study adds to the support of function-based interventions being appropriate for African American students at risk for ED. One limitation to this study was that it was primarily experimenter delivered. The authors suggested that future research involve teachers in the FBA and intervention implementation process to produce maximum effects.

#### *Function-based Versus Nonfunction-based Interventions*

Despite the effectiveness of function-based interventions for students at risk for developing ED and the promises function-based interventions may hold as a means to reduce disproportionality for African American students, several factors have limited the

dissemination and adoption of such approaches in school settings. First, the data on the high rates of discipline referrals indicate that teachers are often guided by negative reinforcement; by having students with problem behaviors removed from the classroom setting, teachers escape the behavior. This, in turn, can also act as negative reinforcement for students, resulting in higher rates of inappropriate behavior if escape is the behavioral function. Second, many strategies in the current literature such as token economies, self-management, and behavioral contracts have shown effectiveness with students with ED. These strategies, however, are often used to address the topography of the behavior rather than its function. Thus, it remains unclear whether or not it is always necessary to address the function of behavior. Comparison studies of function-based interventions versus those not based on function but have a research base would help the field determine the needs for function-based interventions. Results from such comparisons may provide stronger rationale for teachers to invest in FBA.

To date, only six studies have examined the comparative effects of function-based versus nonfunction-based interventions on problem behaviors of students with or at risk for disabilities. The seminal study, conducted by Carr and Durand in 1985, used a reversal design to determine if verbal communication training matched to the perceived function of a child's problem behavior resulted in decreased problem behavior compared to verbal communication training that did not match the perceived function. Specifically, students for whom adult attention had been the identified function were taught to solicit attention by asking "Am I doing good work?" To control for the possibility that a child may decrease disruptive behavior by being taught any communicative phrase, an irrelevant response phase was introduced. For the same students whose function was



adult attention, a second verbal statement, “I don’t understand,” was taught as the irrelevant response. Results indicated that the function-based verbal communication training was more effective than nonfunction-based verbal communication training in reducing the disruptive behavior of four students with developmental disabilities (age range 7-14) in a day school program. This was the first study of its kind to provide evidence that intervention strategies are not as effective unless the function of behavior is addressed.

A decade and a half later, Ellingson, Miltenberger, Stricker, Galensky, and Garlinghouse (2000) examined the effectiveness of function-based versus nonfunction-based interventions on the problem behaviors of three adolescent students with developmental disabilities. The authors used a reversal design to determine if function-based interventions consisting of noncontingent attention, differential reinforcement of alternative behavior (DRA), prompting, and extinction were more effective than an alternative function or nonfunctional interventions that were likely to be used in typical classrooms in decreasing the pounding, aggressive, and off-task behaviors of the participants. Results of this study demonstrated that the function-based intervention was more effective in decreasing the pounding behavior for one student. Although findings were less conclusive, the study also showed that the function-based interventions were superior to the nonfunction-based interventions in reducing the targeted problem behavior of the other two students. By collecting procedural fidelity data, this study provided support that teachers can be meaningfully involved in the development and implementation of FBA and interventions in the classroom. This study did not conduct functional analysis manipulations (FAM) when unclear patterns emerged regarding the

function of one student's behavior; therefore, the authors expressed a need to conduct an FAM when indirect and direct assessment data do not reveal an obvious function. Also, the brief phases of the reversal design limited the ability for a clear functional relationship to be established with one of the students. Another limitation was that there was no information included on any empirical support regarding the nonfunction-based interventions chosen for this study. Such information would have allowed a true comparison to be made between the two intervention types.

As a systematic replication of the study by Ellingson et al. (2000), Ingram, Lewis-Palmer, and Sugai (2005) used a reversal design to compare a function-based versus a nonfunction-based intervention for two sixth-grade male students with challenging behaviors but no identified disabilities. For both students, a function-based and nonfunction-based intervention plan was developed. Function-based intervention plans consisted of setting event, antecedent, behavior teaching, and consequence manipulations that were based on the FBA results. Nonfunction-based interventions were empirically supported and created based on maintaining consequences not indicated or supported by the hypothesis statements made during the functional assessment interviews and observations for each student. Experts in the field of ABA, especially in the area of function-based support, rated each intervention regarding their level of technical adequacy (i.e., matched or not matched to the hypothesis made) for each student. Results from this study indicated that the function-based interventions were consistently more effective in decreasing the participants' problem behaviors than the nonfunction-based interventions. Limitations to this study were that functional analyses were not conducted to validate the hypothesis statements for both students' perceived function. Additionally,

social validity data were not available to determine teachers' preferences in the interventions. The authors recommended that additional systematic replications are needed to add to the research base regarding the effectiveness of function-based interventions with other populations of students.

Newcomer and Lewis (2004) used a multiple-baseline-across-participants design with an embedded alternating treatments design to investigate the efficiency of function-based interventions compared to traditional interventions on the aggressive and off-task behaviors of three elementary students at risk for failure as a result of their behavior. The function-based interventions included antecedent, instructional, and consequence strategies whereas the nonfunction-based interventions focused on the topography (i.e., how the behavior looks) of behavior and was consistent with existing systems and prevailing conditions in the classroom. Results from this study showed that function-based interventions were more effective than the interventions that focused on topography in decreasing the problem behavior of the three students. One major limitation to this study was the possible order effects because nonfunction-based interventions were introduced before function-based interventions for all students. Furthermore, although this study involved a school team-based approach (including the classroom teachers) in conducting the FBA procedures, and developing and implementing the interventions, procedural fidelity data were unavailable to support the reliability of such efforts.

In 2007, Payne, Scott, and Conroy extended the research base on function-based versus nonfunction-based interventions by using an alternating treatments design to compare the effects of both types of interventions on the off-task and noncompliant

behavior of four elementary students with LD or mild intellectual disabilities. For two students whose behavioral functions were attention from a specific peer, the function-based interventions consisted of reinforcement of on-task behavior by providing break time to spend together with peers, contingent upon attending to teacher during instructional activities and academic tasks (replacement behavior). The nonfunction-based intervention for those same students was access to teacher attention via teacher prompts and reprimands. For a third student whose behavioral function was escape from difficult tasks, the function-based intervention was to allow escape from task demands by earning “B Passes” upon completing small (i.e., 10-min) tasks, and the nonfunction-based intervention was increased teacher attention via verbal prompts and reprimands. For the fourth student whose function was to gain teacher attention, the function-based intervention was frequent verbal encouragement from teacher and praise for appropriate behavior, contingent upon replacement behavior whereas the nonfunction-based intervention was planned ignoring by teacher. Results from this study indicated that all four students decreased problem behavior at higher rates during the function-based interventions than during the nonfunction-based interventions. One limitation to the study was the lack of treatment fidelity data regarding the implementation of the interventions.

In the most recent study, Filter and Horner (2009) used a reversal design to examine the effects of function-based versus nonfunction-based academic interventions on the problem behavior and task engagement of two fourth-grade male students with histories of problem behavior. The function-based interventions included antecedent and/or consequence manipulations chosen based on the behavioral function to reduce the problem behaviors for both students. The nonfunction-based interventions were based on

empirically supported interventions successfully implemented in school settings but still allowed both students to continue being exposed to the maintaining consequences of their problem behaviors according to the functional analysis results. Similar to the study by Ingram and colleagues (2005), experts rated the interventions on a 5-point Likert-type scale where a 1 indicated strongly nonfunction based and a 5 indicated strongly function based. Interventions with ratings 2.5 or lower were used as the nonfunction-based interventions and those with a 4.0 rating or above were used as the function-based interventions in this study. Results of this study indicated that both students exhibited lower rates of problem behaviors and higher levels of task engagement during the function-based interventions than those during the nonfunction-based interventions. The authors indicated a continued need for research on function-based versus nonfunction-based interventions, with a special need to address the fidelity of implementation and transfer of implementation from the experimenters to general education classroom teachers.

### *Summary*

To date, research has shown the importance of creating function-based behavior support plans that are technically sound and derived from FBA results (e.g., interviews, observations, functional analysis) and abide by the principles of ABA (O'Neill et al., 1997). Even though several comprehensive reviews (i.e., Heckaman et al., 2000; Lane et al., 1999; Reid & Nelson, 2002) and additional recent research studies (e.g., Kamps et al., 2006; Lane et al., 2007; Lo & Cartledge, 2006; Moore et al., 2005; Stahr et al., 2006) provide empirical support on the effectiveness of function-based interventions with students with or at risk for ED, only one study (i.e., Lo & Cartledge) has purposefully

focused on targeting African American elementary age students as a means to address their overrepresentation in special education and disciplinary referrals. The need for investigating the effects of function-based interventions for African American students is great and such investigation will extend our effort in preventing and intervening in disproportionality of this vulnerable student population. Furthermore, the field is in need of continued research to demonstrate the essential implementation of function-based interventions for students with problem behavior in comparison to interventions that are commonly used for reducing problem behaviors in school settings. Six studies have sought to specifically examine the effectiveness of function-based interventions as compared to nonfunctional classroom interventions on the reduction of problem behavior among students with or at risk for disabilities. Although the results of these studies support the use of function-based interventions as a more effective means than nonfunction-based interventions, the research base remains very narrow in scope. Further research is warranted to address African American population as the target participants, to include fidelity data collection, and to involve classroom teachers as the implementers.

#### *Professional Development on Functional Behavioral Assessments*

Because of requirements enforced by IDEA as a means to address the problem behaviors of students with disabilities, FBA is primarily implemented within the realm of special education. This means special education teachers, school psychologists, and other special education personnel are most often involved in FBA implementation. In order for FBA to be validated as a proactive approach to addressing problem behavior for students with and at risk for ED, effective training and professional development on FBA is critical for all education professionals who work closely with this population.

*Training of Special Education Personnel on FBA*

With the mandates issued through IDEA (1997) and IDEA (2004) for states to use FBA and interventions to address problem behaviors of students with disabilities, preservice and inservice training on FBA has begun to increase for special education personnel. Researchers continue to investigate the critical components necessary to train school personnel most effectively. For example, Conroy et al. (2000) recommended that FBA training be conducted across multiple global content knowledge areas that have evolved in the literature, including: (a) knowledge and application of ABA, (b) knowledge and application of functional assessment and analysis techniques, (c) knowledge and development of multi-component interventions linked to FBA, (d) demonstration of collaboration skills, and (e) development of attitudes and beliefs regarding the efficacy of using FBA to identify functions of student's problem behavior rather than using behavioral strategies that do not address the function of behavior. Additionally, the authors condemn the typical 1-day inservice training stating that it does not lead to a teacher's ability to maintain the taught skills or generalize such skills to other settings or students. Conroy and colleagues recommended that effective training on FBA should take place in collaboration with college and university faculty who can provide the most current knowledge from emerging research on FBA, and that it should incorporate modeling and performance feedback on school personnel's implementation of FBA strategies.

To add to the efficacy of training teachers on FBA, Van Acker, Boreson, Gable, and Potterton (2005) conducted 1- and 2-day inservice trainings on the FBA process and the development of function-based interventions to school personnel who were involved

with or responsible for training IEP team members in FBA implementation. Prior to the inservice training, participants from more than 200 school districts submitted their FBAs and intervention plans for a critical review by the authors in the study. The authors found that the majority of the FBAs submitted had serious flaws and there was a general failure to verify the hypothesized function of the behavior before an intervention was attempted. Additionally, many of the teams did not consider the function of the behavior identified in the FBA when developing the subsequent intervention plan. Using both descriptive and chi square analyses, the authors demonstrated that participants who completed 2 or more days of inservice training produced better FBA results than those who had completed less training. This finding is consistent with professional development literature in that one-day or half-day trainings were often insufficient and that a longer period of training (e.g., more than 14 days) with follow-up support after initial training led to better effects on student performance (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007).

More recently, Dukes, Rosenberg, and Brady (2008) conducted a post-test only group design in a large urban school district in the southeastern U.S. to investigate the effectiveness of a district-wide training on the FBA process. Of the 125 participating special education teachers, 73 received the training and 52 received no training. The training was a short-term inservice program conducted in collaboration with experienced personnel from a local university. The training structure included three 7-hour days of workshops, case study practice, and role-play activities. The first two days were consecutive and the third training day took place 6 weeks later. The content of the training centered around (a) background of FBA and identification of behavioral



function(s) and (b) basic meaning and purpose of behavioral interventions. All 125 participants completed an evaluation survey instrument consisting of three sections including: (a) a question as to whether or not they participated in the training, (b) case study scenarios in which participants had to identify the function of the problem behavior and make a recommendation to promote behavior change, and (c) five multiple-choice questions designed to evaluate participants' knowledge of function of problem behavior. The authors used a factorial ANOVA to compare the trained and untrained groups on their knowledge of behavioral function and ability to make recommendations for behavior change. Results from the analysis indicated that there was a significant difference between trained and untrained teachers' scores on the knowledge of behavior function. This finding suggests that special education teachers who received the training were more accurate in the knowledge-based questions about the functions of problem behavior. However, there was no significant difference between trained and untrained teachers' scores on their ability to make recommendations for behavior change. In other words, the training provided on FBA did not result in qualitatively different recommendations for promoting behavior change. The authors suggested that training models explore options such as coaching and performance feedback in addition to inservice training that allow professionals to become fluent not only in knowledge but in acquisition of a new skill (e.g., developing interventions based on FBA) before being required to implement it independently in the natural setting.

#### *Training of General Education Teachers on FBA*

Although research on effective training practices of FBA has been conducted more frequently over the past 5 years, much of it has been oriented towards training

special education personnel and other specialists to address the mandates in IDEA (2004) regarding students with disabilities who have documented behavior problems (e.g., Dukes et al., 2008; Ervin et al., 2001; Van Acker et al., 2005). Scott and colleagues (2004) conducted a systematic review of the literature published from 1995 to 2000 in which FBA was conducted in general education settings in public schools involving students with mild disabilities, an ED diagnosis, or with no special education or psychiatric identification. Results from the review of the 12 studies revealed that the FBA procedures were primarily researcher-directed with minimum involvement from the general education teachers. The authors identified two possible factors to be associated with the lack of general education teachers' involvement in the FBA process. First, the large teacher-to-student ratio (e.g., average class size in U.S. elementary schools is 24.1) in a general education classroom makes it difficult for general education teachers to conduct the individualized assessments or behavior plan independently, when compared to special education teachers in a more exclusionary setting (e.g., resource classroom). Second, FBA has typically been the responsibility of a specialist such as a special education teacher or school psychologist. Many general education teachers lack even the foundational skills necessary to begin the FBA process because it is neither embedded into preservice programs nor is it offered to general education teachers as inservice training. Because many general education teachers lack confidence in their knowledge of FBA, they tend to rely on the expertise of trained specialists. That lack of confidence paired with time constraints make it unlikely that general education teachers will use FBA as a proactive means for addressing problem behavior; instead, they may fall back on methods (e.g., interventions based on topography, exclusionary practices) that require

less time, skill, and effort (Scott et al., 2004). If FBA is to be validated as a proactive approach for use with at-risk students in the general education classroom, training must be made available to general education teachers.

In order to make the FBA a more efficient and effective procedure in the general education classroom, Scott et al. (2004) further provided recommendations to researchers, including: (a) focusing on the degree of training necessary for school-based personnel to adequately implement FBA procedures within the context of their everyday roles in the school setting; (b) research in public schools must focus on the teacher's ability to implement FBA procedures by removing the researcher as the leader of the implementation process; and (c) research should focus on validating alternative and indirect FBA methodologies that may be necessary when attempting to implement FBA in the general education setting. Despite these useful recommendations, challenges regarding efficiency of the FBA process in the general education settings are still evident. For example, Chitiyo and Wheeler (2009) conducted a study to identify the difficulties teachers in a Midwestern school district faced after receiving training on FBA and PBS implementation. Twenty-one participants, including 19 general education teachers, completed a 24-item questionnaire consisting of items related to PBS components according to best and effective practices identified in the research (e.g., understanding basic principles of PBS, conducting FBA, collecting and recording data, formulating hypotheses using data from FBA) and were asked to rate the items by level of difficulty. Results from the study indicated that skill areas reported as most problematic were conducting FBAs ( $M = 4.19$ ) and using functional assessment data to formulate hypotheses ( $M = 4.10$ ). The most difficult FBA techniques were the use of instructional

antecedents to prevent challenging behavior ( $M = 4.05$ ) and teaching alternative replacement behaviors ( $M = 4.70$ ). Additionally, the participants indicated specific challenges during their intervention implementation including lack of time, inadequate training, lack of consistency among staff, and lack of resources, administrative and parental support. The results of this study indicate the importance of research in identifying systematic FBA training procedures that can be applied as best practice while at the same time address the needs of general education teachers.

To explore the issue of school personnel's professional development needs surrounding FBA and behavioral interventions, Pindiprolu and colleagues (2007) conducted a descriptive study of special educators and general educators, administrators, and support personnel to elicit their own professional development needs in multiple areas related to special education. The authors sent out 450 surveys to school personnel in 10 Midwestern states in the U.S. and received 156 responses. Among the teachers who responded, 30.8% ( $n = 16$ ) were general educators and 65.4% ( $n = 34$ ) were special educators. Overall, the three most frequently cited areas of need identified by all respondents were: (a) interventions for behavior problems, (b) FBA, and (c) inclusion strategies. Additionally, respondents were specifically asked to rate their skill level with FBA. General educators indicated that they were least skilled in (a) interviewing caregivers regarding student problem behavior, (b) hypothesis testing of the function of problem behavior and recording procedures for measuring problem behavior, and (c) conducting ongoing assessment of changes in behavior during intervention. This study showed that school personnel, including general education teachers, perceive a strong

need for professional development in FBA skills and developing behavioral interventions based on FBA results.

### *Summary*

Professional development on FBA began as a special education initiative to address federal legislation handed down by IDEA (2004). Although research on critical components of FBA training have been conducted (e.g., Conroy et al., 2000), the research base is still emerging and inconsistent regarding best practice in general education classrooms. Researchers and professionals in education have now begun to shift the focus of FBA from being a reactive method for addressing problem behavior for students with disabilities to a preventive and proactive strategy for reducing problem behavior *before* students are referred for special education. This means that general education teachers need to be actively involved in the intervention planning process. Unfortunately, only a few studies offer insight as to how best to train general education teachers on FBAs and interventions (Chitiyo & Wheeler, 2009; Scott et al., 2004). Training that extends beyond one day inservice workshops, covers basic ABA and PBS fundamental skills, and offers coaching and performance feedback are a few of the suggestions recommended. Future research on FBA and professional development that considers the needs of the general education teachers must take place to increase the likelihood that efficient and effective FBA practices occur.

### **Summary of Literature Review**

Disproportionality has been a persistent problem in special education for decades. To address this issue, IDEA (2004) issued mandates that states take data on disproportionality rates and create effective programs and interventions to decrease

disproportionality. Despite these mandates, African American students continue to be disproportionately represented in the ED category in special education (e.g., Oswald et al., 1999; Skiba et al., 2005). Additionally, African Americans represent the highest percentages of students identified as at risk (Gay, 2000). They also receive a disproportionate number of referrals for disciplinary actions (Cartledge & Dukes, 2008; Skiba et al., 2002). Even though many hypothesized reasons for such disproportionate rates have been researched (e.g., poverty, inherently bad behavior, cultural bias, ineffective behavioral management), the findings are conflicting. Disproportionality among this population continues, and successful educational outcomes are far too infrequent.

One promising intervention that can decrease exclusionary practices imposed on African American students and address disproportionality in both special education and disciplinary action is to use FBAs and function-based interventions. There are four major components or phases of FBA that can be found in the literature including: (a) indirect informant methods that are used to define and narrow down the environmental and contextual variables that may affect the behaviors of concern, (b) direct observations that allow for developing summary statements or hypotheses regarding behavioral function, (c) functional analysis manipulations that allow for verification of generated hypothesis statements, and (d) behavior support plan development in which interventions are developed based on the results of the first three FBA phases (Alberto & Troutman, 2006; Cooper et al., 2007; O'Neill et al., 1997).

The effectiveness of FBAs and function-based interventions for students with ED and those at risk for developing ED have been well documented (e.g., Heckaman et al.,

2000; Lane et al., 1999; Reid & Nelson, 2002). However, only two studies have involved African American students as participants in FBA implementation (i.e., Kamps et al., 2006; Lo & Cartledge, 2006) and only one included African Americans as a means to address disproportionality (i.e., Lo & Cartledge). Research is still needed to investigate the effects of function-based interventions for African American as such investigations may help extend our effort in preventing and intervening in disproportionality of this vulnerable student population. Additionally, the field is in need of more research to demonstrate the essential implementation of function-based interventions for students with problem behavior in comparison to interventions that are commonly used for reducing problem behaviors in school settings. Only six studies have sought to specifically examine the effectiveness of function-based interventions as compared to nonfunctional classroom interventions on the reduction of problem behavior among students with or at risk for disabilities. Although the results of these studies support the use of function-based interventions as a more effective means of reducing problem behavior than nonfunction-based interventions, the research base remains very narrow in scope. Further research is needed to address African American population as the target participants, to include fidelity data collection, and to involve general education teachers as implementers. The professional development on FBA, however, has largely focused on special education personnel. The research base on best practice in general education settings is still emerging and inconsistent at best (e.g., Conroy et al., 2000). In order for FBAs and function-based interventions to be effective in preventing problem behavior of African American students before they are referred to special education, research on FBA and professional development targeted to general education teachers must take place.

## CHAPTER 3: METHOD

### *Participants and Participant Selection Criteria*

Participants in this study were 4 fifth-grade African American male students at risk for ED. African American students were specifically targeted for this study because of the disproportionality of this population in the special education referrals, especially in the ED category, and disciplinary referrals. Additional criteria for participation included teachers' recommendations of students in highest need of more intensive and individualized behavioral interventions and informal teacher observations of students who demonstrated high levels of challenging social behavior, regular student attendance, and signed parental consent and student assent forms. Inclusion of female students was acceptable for this study, but none were referred by the general education teachers.

Once students were identified using the above criteria, each classroom teacher completed the *Social Skills Improvement System Rating Scales* Teacher Form (SSIS; Gresham & Elliott, 2008) to verify each student's "at-risk" status. The SSIS is an individually administered, standardized procedure measuring three subscales: *Social Skills*, *Problem Behaviors*, and *Academic Competence*. For the purpose of this study, only ratings on the *Social Skills* and *Problem Behaviors* subscales were used. There are 46 items for the *Social Skills* subscale measuring the following seven domains: communication, cooperation, assertion, responsibility, empathy, engagement, and self-control. For each item, a rater indicates the importance of each social skill using a 3-point scale (i.e., Not Important, Important, Critical) and the perceived occurrence frequency



using a 4-point scale (i.e., Never, Seldom, Often, Almost Always). There are 30 items for the *Problem Behavior* subscale addressing behaviors related to four categories: externalizing, bullying, hyperactivity/inattention, and internalizing. For each item on the *Problem Behavior* subscale, the rater indicates a student's behavioral frequency using the same 4-point scale described above. According to these authors, results from the SSIS were compared to normative scores developed by a nationwide standardization sample of 4,700 children aged 3 through 18 years who represent the population of the United States across gender, race, socioeconomic status, and geographic location. The median scale and subscale internal consistency reliability coefficients of the SSIS teacher form for students aged 5 to 12 are .95 and .85, respectively. Median test-retest reliability coefficients for scale and subscales for the teacher form for students aged 3 to 18 are .83 and .81, respectively. This measure was used to determine teachers' perceptions on the participants' social behaviors by checking the degree to which a certain social skill or problem behavior is observed during a certain period of time. Only students receiving "Below Average" levels or lower on two or more of the *Social Skills* subscales (indicating that they exhibit fewer than the average number of social skills for individuals in their norm group) or "Above Average" level or higher on two or more of the *Problem Behaviors* subscales were eligible for participation in this study.

Based on their understanding of the students needed for inclusion in this study, the first two teachers to volunteer to participate were chosen. Originally, the teachers nominated six students (i.e., three students each) for this study. However, one student was excluded because he was already receiving special education services under the category of Intellectual Disability (ID), and an FBA was soon to be conducted by his special

education teacher due to his suspensions from school. A second student was excluded because his school attendance record was poor. The resulting four participants came from two classrooms with two students from each class. The purpose of having two participants from each classroom was two-fold. First, having one student from each of two classrooms allowed for two students to receive the interventions at once and for the counterbalancing of the nonfunction-based and function-based interventions to control for sequencing effects. Second, each teacher was to conduct the FBA with one student when training, coaching, and performance feedback were given and then generalize those skills by implementing the FBA with a second student independently.

**Todd.** Todd was an 11-year-old African American student in Mrs. Bart's fifth-grade classroom. He was referred by his teacher for his inability to stay focused and on task during individual work periods and for aggressive behaviors when frustrated, such as banging his fist on his desk or throwing materials in the floor. Results from the SSIS completed by Mrs. Bart indicated that Todd fell in the "Below Average" range on the *Communication, Cooperation, Engagement, and Self-Control Social Skill* subscales. His overall standard score of 68 on the Social Skills Scale, indicated a rank of 2 percentile. This means that 98 percent of students in his age norm exhibit higher social skills than Todd. He fell within the average range on all problem behavior subscales, and his overall standard score of 113 on the Problem Behaviors Scale indicated a rank of 81 percentile when compared to the norm sample of his same-age peers. However, because he exhibited deficiencies in four social skill domains and ranked at the 2<sup>nd</sup> percentile, the experimenter and teacher agreed that Todd was still in need of individualized behavior support that could be addressed through the FBA.

**Alan.** Alan was an 11-year-old African American student in Ms. Jones' fifth-grade classroom. He was referred by Ms. Jones due to his inability to stay on task during whole group instruction. She described Todd's behavior as staring out into space, fidgeting with his hair or other objects in his possession, and constantly putting things in his mouth. Results from the SSIS indicated that Alan fell in the "Below Average" range on the *Communication, Cooperation, Assertion, Responsibility, and Self-Control* Social Skill subscales. His overall standard score of 52 on the Social Skills Scale, indicated a rank of 1 percentile. This means that Alan exhibits fewer age-appropriate social skills than 99 percent of students his age in the norm sample. He also fell in the "Above Average" range on the *Externalizing and Hyperactivity/Inattention* Problem Behaviors subscales. His overall standard score of 124 on the Problem Behaviors Scale ranked him in the 93<sup>rd</sup> percentile when compared to the norm sample group.

**Shaun.** Shaun was referred by his teacher for inability to focus and frequent off-task behavior that consisted of looking around during whole-group and individual instruction, talking to others about non-task related subjects, and walking around the room without permission. Results from the SSIS completed by Mrs. Bart indicated that Shaun fell in the "Below Average" range on the *Communication and Cooperation* Social Skill subscales. His overall standard score of 79 on the Social Skills Scale ranked him in the 8<sup>th</sup> percentile when compared to the norm sample group. He fell within the average range on all problem behavior subscales, and his overall standard score of 101 on the Problem Behaviors Scale indicated a rank 55<sup>th</sup> percentile when compared to the norm sample.

**Jaquan.** Jaquan was referred by Mrs. Jones for talking out during whole-group instruction, mumbling under breath, and smacking lips, rolling eyes and arguing back after being reprimanded or receiving rule reminders. Results from the SSIS completed by Mrs. Jones indicated that Jaquan fell in the “Below Average” range on the *Cooperation*, *Responsibility*, and *Self-Control* Social Skill subscales. His overall standard score of 79 on the Social Skills Scale ranked him in the 8<sup>th</sup> percentile when compared to the norm sample group. Additionally, he scored in the “Above Average” range on the *Externalizing*, *Bullying*, and *Hyperactivity/Inattention* Problem Behaviors subscales. His overall standard score of 117 on the Problem Behaviors Scale indicated a rank of 87<sup>th</sup> percentile when compared to the norm sample of his same-age peers.

Based on each teacher’s recommendation of one student in highest need of the FBA, Todd and Alan were selected as the first two students to begin the study (i.e., Student A from each class). Once the teachers had completed the FAI, FAO, FAM, and completed at least one function-based and one nonfunction-based phase with Todd and Alan, they both began the FBA process independently with Shaun and Jaquan (i.e., Student B from each class). The teachers completed the FAI, FAO, and FAM phases with Shaun and Jaquan, but based on the FAO and FAM results, both students exhibited problems behaviors at low frequencies that the teachers elected to discontinue the FBA process. Therefore, no behavioral interventions were developed for Shaun or Jaquan. Shaun and Jaquan’s FBA results through the FAM procedures are described in the results section (i.e., Chapter 4, Part 1: Functional Behavioral Assessment Results).

*Settings*

The setting of the study took place in an urban public elementary school located in a metropolitan district in the Southeastern United States. The school serves approximately 380 students in grades kindergarten through five. It is considered a priority school indicating that less than 50% of students are performing at grade level. The school has a student enrollment of 63.75% African American students, 17.70% Caucasian students, 11.73% Hispanic students, 6.40% Multi-racial students, and .43% Asian students. Students with disabilities make up approximately 22% of the school population, and 86.05% of all students receive free or reduced price lunch. The school is involved in its third year of a school improvement plan sanctioned by the state. This plan requires improvement activities such as afterschool tutoring services. The school in this study is involved in schoolwide behavioral policy based on the Restitution Model (Gossen, 1996). This model involves redirecting a student in a way that allows him or her to choose how to fix the problem and then re-enter the group or class as a valued member (Gossen, 1996). Training for the FBA process alternated between Mrs. Bart's and Mrs. Jones' room after school hours. The FBA and delivery of function-based and nonfunction-based interventions occurred in the general education classrooms of both teachers.

Mrs. Bart had 14 students and had desks arranged in three groups of four students. The two participants (i.e., Todd, Shaun) had desks that were isolated from other students due to their inappropriate behaviors. During the reading stations block, stations were set up at different parts of the room to allow student groups to be spread out. The station in which Mrs. Bart delivered small group instruction took place at a small U-shaped table at the back of the room. Computers were located at the front of the room, with three

computers being group together in the left corner and two other computers being located at the white board along the left wall.

Ms. Jones had 17 students and arranged student desks into three groups of four desks and one group of five desks. Student computers were located in two areas of the room. Three computer desks were grouped together along the far right wall, and three more computer desks were located along the far left wall. Ms. Jones' laptop, Elmo© smart-tech projector and desk were located at the front center of the student desk groups all with the class SMARTboard© as the central focal point for whole group instruction. During the time of day in which the study took place Ms. Jones had 17 students in the classroom at any one time, because three students would come in from tutoring and three more students would leave for tutoring.

#### *Experimenter*

The experimenter for the study was a full-time student working towards a doctoral degree in special education and had 5 years of experience teaching students with mild to moderate disabilities in a public school system. The experimenter received a Bachelor of Arts degree in Psychology and Exercise and Sport Science and gained licensure in special education (i.e., General Curriculum, K-12) through a graduate teacher education program. She also received a Master of Arts in Teaching degree in special education. The experimenter served as the primary trainer and data collector.

The experimenter had received previous training on FBA and behavioral interventions while working as a special education teacher. She also participated in professional development specific to working with students identified as ED or who had behavioral problems. She taught students with ED and other mild to moderate disabilities

and conducted FBAs on a continual basis during her 5 years of teaching. As a doctoral student, she took courses that allowed her to gain expertise in Applied Behavior Analysis (ABA) and cotaught graduate level coursework on FBA and interventions. She also independently taught a classroom management course upon which ABA was the foundation.

### *Materials*

Materials used for the FBA process were taken from the *Functional Assessment and Program Development for Problem Behavior* handbook developed by O'Neill and colleagues (1997). Specifically, copies of the teacher-directed functional assessment interview (FAI) form, functional assessment observation (FAO) form, and competing behavior model forms were used. Copies of the *SSIS* (Gresham & Elliott, 2008) for teachers were provided. Additionally, each teacher received her own copy of the handbook. MotivAiders© were also used by both the teachers and experimenter to assist during data collection and as part of the self-management interventions for Todd and Alan. MotivAiders© are electronic devices that use a vibrating signal at set intervals as a reminder or prompt. Often times they are used by teachers or researchers to record behavior or by students to monitor their own behavior. For the direct observation sessions, materials included copies of the scoring sheets, a clipboard, and a pencil for recording data. Procedural fidelity checklists were used for each phase of the FBA process. Details of these forms will be described in Part II of the Procedures (i.e., Comparison of function-based and nonfunction-based interventions) in this chapter (see Appendices K through Q).

### *Dependent Variables and Measurement*

The primary dependent variable in this study was the problem behavior individualized for each student based on the results from the FAI and FAO. For Todd, the dependent variable was the percent of intervals of off-task behavior, defined as: (a) eyes not on teacher or instructional materials for 3 s or more; (b) playing with objects within reach; (c) humming or singing aloud during small group work; or (d) talking to self or others about non-task related topics. The dependent variable for Alan was the percent of intervals of off-task behavior, defined as: (a) eyes not on teacher or instructional materials for 3 s or more; (b) playing with hair or objects within reach; (c) constant body movement (e.g., kicking legs against desk, shaking arms); (d) talking to self or others about non-task related topics; or (e) out of seat (legs on chair, rocking back and forth). The data recording method used for both students was 1 min momentary time sampling (MTS). This recording method was used for multiple reasons. First, MTS is very convenient for teacher use because it does not require undivided attention on the targeted student. This allows both teachers to continue ongoing instruction, while recording behavior only at the end of each interval. Choosing a data collection method that was practical for teacher use was important as teachers were also data collectors in this study; their abilities to feasibly conduct the FBA was a primary focus of this study. Additionally, MTS is most appropriate for more continuous behaviors, such as the off-task behavior targeted in this study (Cooper et al., 2007). Observation sessions lasted for 40 min, (i.e., 10:05-10:45 A.M.) per day during small group reading stations for Todd and 30 min (i.e., 10:45-11:15 A.M.) per day during whole group guided reading instruction for Alan. Data collection occurred five times per week. The experimenter



collected data in the participants' general education classrooms. Percentages of the intervals of off-task behavior were calculated by dividing the number of intervals of occurrences of "off-task" behavior by the total number of intervals of observations (i.e., 40 for Todd, 30 for Alan) and multiplied by 100.

The secondary dependent variable was the appropriate replacement behavior chosen as a part of the function-based intervention plans created by each teacher for Todd and Alan. For both students, the replacement behavior chosen was self-management. Specifically, each student self-monitored his behavior, self-evaluated to determine if he had earned a break, and self-reinforced through a 2 min break for ever 10 min of on-task behavior (See Appendix A for an example self-management chart used by the students). It was the self-reinforcement aspect of the replacement behavior that served the escape function validated for each student through the FAMs. Data on the accuracy of self-management behavior were recorded during the same observational sessions as the problem behaviors described above for each student across all baseline and intervention phases. Accuracy of self-management was counted each time a student, self-monitored, self-evaluated, and self-reinforced his behavior. Self-management accuracy data were collected using frequency recording, because both students self-monitored at set, discrete times during the observation sessions. Both students self-monitored their own behavior at the end of 2 min intervals. Todd had a total of 20 opportunities to self-monitor his own behavior during each 40-min session. Alan had a total of 15 opportunities to self-monitor his own behavior during the targeted 30-min observational session. The self-management accuracy data were converted to percentages just as off-task behaviors were, because some observation sessions did not last the full length of time for each student. For

example, Todd would sometimes arrive from his tutoring sessions late, causing observation sessions to last fewer than 40 min. This would affect the number of opportunities he would also have to self-manage his behavior. Also, both off-task behavior and self-monitoring behavior data were placed on the same graph for better visual comparisons to be made, so it was appropriate for both types of behavior to be recorded using the same conversion unit of measurement.

**Interobserver reliability.** In order to establish interobserver reliability on the two dependent measures, a second observer used the same score sheet used by the primary data collector to collect data on both behaviors for 41.6% of the observational sessions. The second observer was a paraprofessional who rotated among all fifth grade classrooms throughout the school day. This individual was trained by the primary investigator by (a) providing her with the operationalized definitions of off-task behavior that had been created for each student, (b) explaining the MTS recording system and how to use the MotivAider© device to aid in recording, and (c) by having practice observation sessions with the primary investigator until a minimum of 90% agreement was reached. After the first practice session, scores from both the primary investigator and second observer were compared for agreement. Interobserver reliability was 100% for the practice session, so no more practice sessions were necessary. In addition to the interobserver reliability data collected on the two dependent variables, reliability data were also collected for 43.8% of the times treatment fidelity data were collected across all phases for both students. Prior to the implementation of each phase (i.e., FAI, FAO, FAM, Plan, Baseline, Function-based, Nonfunction-based), the experimenter went over the procedural fidelity checklist in detail with the paraprofessional for each specific phase. Interobserver reliability data

collection was distributed evenly across each participant and across all conditions of the study. The behavioral data were calculated using an interval-by-interval analysis of observations, by dividing the number of agreements divided by the number of agreements plus disagreements, multiplied by 100.

#### *Teacher Satisfaction Questionnaire*

Teacher satisfaction data were collected at the conclusion of the study to measure the outcome of the study from teachers' perspectives (see Appendix B). Teachers completed a 16 item questionnaire using a 4-point Likert rating scale (e.g., 1 = Not at all to 4= Very important) that addressed the following: (a) the importance of training components and behavioral interventions; (b) degree of improvement in the target behaviors; (c) appropriateness, effectiveness, and practicality of the interventions used; and (d) changes in perceptions, likelihood of continued use, and potential changes that would be made in the development or implementation of one or more of the interventions. The questionnaire required approximately 10 min for teachers to complete.

Additionally, using the same 4-point Likert rating scale, teachers were asked at the beginning of the study and again on the satisfaction questionnaire the extent to which they felt each targeted student needed to be referred for both special education services under the category of ED and for disciplinary action. This was done to determine what effect, if any, the study interventions may have had on altering the teachers' perceptions of students' need for special education services or disciplinary action.

#### *Experimental Design*

A single-subject, ABABCBC multiple treatment reversal design (Cooper et al., 2007) was used to compare the effects of function-based and nonfunction-based

interventions on the problem behavior and replacement behavior of participants. In a multiple treatment reversal design, two or more treatments are compared to determine which one has a greater impact on the dependent variable(s). The multiple treatment design is similar to the reversal (ABAB) design but a second intervention (C) is added to the design sequence (Tawney & Gast, 1984). Using this design, condition B represented the function-based intervention and condition C represented the nonfunction-based intervention for each student. Because two students (i.e., Todd and Alan) completed the entire study, phases were counterbalanced across both students to control for possible sequence effects. Todd received the function-based intervention first after baseline (ABABCBC), and Alan received the nonfunction-based intervention first after baseline (ACACBCB).

Additionally, an alternating treatments design was used for the functional analysis portion of the FBA to verify the hypothesized function of each student's behavior. The alternating treatments design is known for its rapid alternation of two or more distinct treatments, or in this case, conditions while the change in the target behavior is measured (Barlow & Hayes, 1979; Cooper et al., 2007). In an alternating treatments design the data paths for each treatment are compared with each other. When minimal or no overlapping data exist and all paths have stable levels, experimental control is established. To determine the most effective treatment or condition, the vertical distance between data paths is examined. The greater the vertical distance, the greater the differential effects of the two treatments are on the targeted behavior. In this study, potential functions (i.e., escape, attention) of problem behavior were examined by manipulating present versus absent conditions for each student using the alternating treatments design described

above. The condition in which each student exhibited the highest rates of problem behavior confirmed the primary function of each student's problem behavior. A minimum of three data points were collected during each condition so that stronger results were able to be obtained.

### *General Procedures*

The study began by training both general education teachers together on the four major components of FBA as outlined by O'Neill et al. (1997): (a) informant method of gathering information through the Functional Assessment Interview (FAI); (b) direct observation of behavior using the Functional Assessment Observation form (FAO); (c) functional analysis manipulations to verify initial hypotheses (FAM); and (d) behavior support plan development and implementation. Additionally, the general education teachers received training on introductory applied behavior analysis components recommended as best practice in the field (e.g., Conroy et al., 2000). The training was divided into four modules. After each training module was completed, each teacher was responsible for completing that portion of the FBA process with the first of two students (i.e., Student A). For example, after teachers had been trained on how to complete the FAI, each was responsible for completing the FAI with Student A. The selection of the first student in each classroom was based on teacher recommendation of highest rates of problem behavior. Results from the *SSIS* rating scales for social skills and problem behavior were also taken into consideration when determining order of entrance into the intervention. The student in each classroom with the highest level of need based on the above criteria was the first to begin the FBA process. In this case, Todd was the first to begin in Mrs. Bart's classroom and Alan was first to begin in Mrs. Jones' classroom. In

addition to the inservice training modules, both teachers received coaching and performance feedback as needed when they conducted each phase of the FBA with Student A. Once the four training modules were completed and as the last component of the FBA, each teacher worked with the experimenter to create a function-based behavior support plan based on the results of the FAI, FAO, and FAM. Also, the experimenter, in partnership with the teacher, created a nonfunction-based intervention for the same student to examine the comparative effects of both interventions on the targeted behavior. After all four parts of the FBA were completed for Student A, including implementation of both function-based and nonfunction-based interventions, both teachers were to repeat the entire FBA process with a second student (i.e., Student B) for the experimenter to measure teachers' ability to transfer learned skills to a new student. With Student B, the teachers did not receive any additional training, coaching, or performance feedback as they completed the components of the FBA. Data on teacher fidelity were graphed for visual data analysis. Each phase of the study is described in more detail in the sections below. Additionally, Appendix C provides a schedule of study implementation across all phases.

#### *Procedures Part I: Training Modules and FBA Implementation*

Training consisted of four distinct modules that are closely aligned with the phases of FBA. Specifically, the training modules included: (a) ABA basics, Positive Behavior Support and FBA overview, and the functional assessment interview (FAI); (b) validating the FAI through direct observation using FAO form; (c) functional analysis hypotheses and manipulations (FAM); and (d) building and implementing behavior support plans. See Appendix D for an outline of each training module and its content

objectives. Each training module lasted approximately 2-3 hrs and was delivered using a PowerPoint© format with both participating teachers. The experimenter used model-lead-test procedures, provided multiple exemplars, and gave opportunities to practice learned content in each session. Training also included opportunities to practice correspondence between the FAI, FAO, and FAM to ensure that the participants are able to gather the appropriate information in one phase and use it accurately in each subsequent phase. This was done through a worksheet created by the experimenter that the teachers completed at the end of FAO phase to prepare for the FAM (see Appendix E for correspondence worksheet). Correspondence across all phases of the FBA process is important in ensuring the hypothesis regarding the behavioral function is accurate. Upon completion of each module, each teacher implemented the specific FBA phase learned in the module with Student A (i.e., Todd, Alan) in her respective classroom. Detailed descriptions for each component of implementation are provided below in separate subheadings. The experimenter was present when each phase was implemented with both Todd and Alan and provided coaching and performance feedback to each teacher only as needed (i.e., if she performed a step incorrectly). During this time, the experimenter provided reinforcement (e.g., verbal praise) when procedures were implemented as taught. The experimenter provided guidance and offer improvement strategies in vivo when procedures were implemented inappropriately. Results from each phase of the FBA will be presented in chapter 4.

**Functional assessment interviews (FAI).** Module 1 included training the general education teachers on: (a) the importance and understanding of human behavior; (b) assumptions and characteristics of the Behavioral Approach; (c) practice with the three-

term contingency; (d) definition, characteristics, concepts, and principles of ABA; (e) definition, characteristics, assumptions, and desired outcomes of PBS; (f) how ABA, PBS, and FBA are interrelated; (g) common terminology (e.g., function-based interventions, functional assessment); (h) steps to develop effective PBS plans; and (i) completing the FAI phase. Upon completion of module 1, each of the two participating classroom teachers completed the *Teacher-Directed Functional Assessment Interview* form (FAI; O'Neill et al., 1997) with Todd and Alan in their respective classrooms (see Appendix F). The interview was semistructured in nature and designed to identify: (a) description of the behaviors of concern; (b) general and more immediate physical and environmental factors that predict the occurrence and nonoccurrence of the problem behaviors; (c) potential functions of the behaviors in relation to the outcomes or consequences that are maintaining them; and (d) development of summary statements describing relationships among situations, behaviors, and their functions. Specifically, the FAI consists of the following 11 sections: (a) description of the behaviors (e.g., topography, duration, frequency); (b) definition of potential ecological/setting events (e.g., medications, medical or physical problems, sleep cycles, daily routines); (c) definition of immediate antecedents events for occurrences and nonoccurrences of problem behavior (e.g., physical setting, time of day, people, activity); (d) identification of consequences or outcomes of the undesirable behaviors that may be maintaining them (e.g., behavior, specific situations, what student gets or avoids); (e) ratings of overall efficiency of problem behavior; (f) identification of socially appropriate alternative behaviors already in the student's repertoire; (g) identification of primary forms of expressive communication; (h) approaches that do and do not work well with the student



during activities or teaching sessions; (i) identification of potential reinforcers; (j) history of undesirable behaviors, interventions and effects of those interventions that have been attempted in the past; and (k) development of summary statements for each major antecedent and/or consequence identified (O'Neill et al., 1997). Gathering data for each form required approximately 45 min. Each teacher used the FAI as a self-guided tool to complete the form.

**Functional assessment observations (FAO).** During training module 2, teachers were trained on how to validate the information collected from the FAI through taking systematic direct observations. Specifically, module 2 included: (a) a brief review of training module 1; (b) the purpose of conducting FAOs, (c) the function of the FAO form, (d) navigating through and using the FAO form, (e) recommended length of observations, (f) the content of the FAO, (g) developing hypothesis statements, and (h) practicing using the FAO form using case scenarios. After training on module 2 was completed, direct observations of Student A took place at times in which the identified problem behavior was most likely to occur as indicated from the interview results. Data were collected using the *Functional Assessment Observation Form* (FAO; O'Neill et al., 1997). The FAO form is structured to maximize the amount of comprehensive information that can be obtained without requiring lengthy write-ups or documentation. It is organized around problem behavior events and allows predictor events and consequences associated with problem behavior to be documented. The form allows space for data to be collected across the following eight sections: (a) identification/dates, (b) time intervals, (c) behaviors, (d) predictors, (e) perceived functions, (f) actual consequences, (g) comments, and (h) event and date record (see Appendix G). Each

observation session lasted 20 min and occurred during the time of day in which the problem behavior for each student occurred at the highest rates. Each classroom teacher was trained to collect observation data for 2 to 5 days or until a minimum of 15 to 20 occurrences of the target behaviors were observed. Data from the completed FAO were analyzed and interpreted by each teacher so that summary statements regarding the hypothesized functions of problem behavior were revised. Patterns revealed from the FAO allowed for the appropriate set-up of the functional analysis portion of the FBA.

**Functional analysis manipulation (FAM).** Training module 3 included: (a) a brief review of the first two training modules; (b) refining or revising the hypothesis statements; (c) completing the competing pathways summary statement; (d) guidelines for conducting FAMs; (e) two basic approaches to FAM (i.e., manipulating predictors, functions); (f) alternating treatments design; (g) manipulation in present versus absent conditions; (h) ideas for testing different summary statements; and (i) examples and practice with setting up their own FAMs. Upon completion of training module 3, hypothesized functions derived from the FAI and FAO were validated through the use of a functional analysis for each student. Functional analyses are used to validate hypotheses, especially when no clear patterns emerge during the interview or observation process. As previously mentioned, an alternating treatments design was used to manipulate possible antecedent and/or consequence conditions that were based on the results of the interviews and observations. The conditions were randomized using a free random sequence generator available online through [www.random.org](http://www.random.org). The functional analysis was individualized based on each student's information. A minimum of three

data points were collected for each condition of the functional analysis for all students so that clear data patterns emerged.

**Function-based intervention planning and implementation.** Training module 4 included: (a) a brief review of the first three training modules; (b) features of good behavior support plans that make problem behavior irrelevant, inefficient, and ineffective; (c) developing a competing behavior model; (d) practice with a case scenario; (e) examples of setting event/antecedent modifications; (f) examples of teaching alternative skills; (g) examples of consequence strategies; (h) practicing the competing behavior model with Todd/Alan; and (i) a review of what was learned in the fourth training module. After completion of training module 4, each classroom teacher was guided in the development of function-based interventions for Student A based on the data collected from the FAI, FAO, and FAM. During the function-based intervention development phase, the selection of strategies used depended on the best contextual fit. Because the classroom teachers were highly involved in the intervention development, strategies were selected based on the ease in which they could be delivered consistently and feasibly by teachers given other variables occurring within the natural classroom context. The *Competing Behavior Model* (O'Neill et al., 1997) was used to list strategies across the four-term contingency (i.e., setting events, antecedents, behavior, consequences) and the most salient strategy for each part of the contingency was chosen that matched the hypothesis statement (i.e., the behavioral function) for each student (see Appendix H for the *Competing Behavior Model*). Appendix I includes an example of a function-based intervention example.

**Nonfunction-based intervention planning.** In addition to the function-based intervention, an intervention was created that did not serve the hypothesized behavioral function. This intervention was individualized for each student. These strategies did not remove problem antecedents or neutralize problem events. Additionally, all four parts of the four-term contingency were addressed so that one strategy per part was created for the nonfunction-based intervention. The nonfunction-based intervention was created so that access to the function was blocked (e.g., no access to a break for an escape function, receiving planned ignoring for an attention function). See Appendix I for an example of a nonfunction-based intervention.

**Expert ratings.** Three experts in the field of ABA who were not directly involved in this research study were asked to rate the technical adequacy and the match between the FBA-based hypothesis statements and the intervention strategies (function-based or nonfunction-based) for all interventions using a 5-point Likert scale. The procedures used in this study were similar to those used by Filter and Horner (2009) and Ingram et al. (2005). Two of the three experts recruited in this study held higher education faculty positions and taught coursework in ABA. The third expert was the director of psychology at a developmental center for individuals with intellectual and other developmental disabilities. All three experts had years of extensive training in ABA and FBA. The experts were asked to examine the two proposed intervention packages with no distinguishing terms to indicate which interventions were function-based or nonfunction-based. The experts used the Likert scale to rate each intervention package on the degree to which the intervention package made the targeted problem behavior (a) irrelevant, (b) inefficient, and (c) ineffective. Ratings of 1 referred to not at all (irrelevant, inefficient,

ineffective) and a 5 referred to strongly (irrelevant, inefficient, ineffective). The scores on the three items were averaged together for each intervention package. The means from the three experts were then averaged a final time, and intervention packages with a mean rating of 4.0 or above were used as function-based interventions and interventions with ratings of 2.5 or below were used as nonfunction-based interventions (see Appendix J).

*Procedures Part II: Comparison of Function-based and Nonfunction-based Interventions*

The following procedures were conducted with Todd and Alan in each of the two classrooms immediately upon completing Part I procedures described above. Once all four phases of the FBA were completed with Todd and Alan, including implementation of the function-based and nonfunction-based interventions, each teacher was to repeat the entire FBA process and intervention implementation with Shaun and Jaquan independently with no additional training, coaching, or performance feedback from the experimenter.

**Baseline.** During baseline, no participants were exposed to any new behavioral interventions and no replacement skills were directly taught in the school setting. However, because the school in this study was involved in schoolwide Restitution, it is assumed that, by definition, the school had an agreed upon and common approach to discipline, through the use of schoolwide and classroom social contracts, and procedures in place for teaching these expectations to students. Participants in this study were included based on their perceived continuing need for behavioral interventions despite efforts already in place by the schoolwide “Restitution” disciplinary policy to promote socially appropriate behavior in the school setting. The participating teachers were

instructed to continue their behavior management strategies as they have done previously without making any changes.

Additionally, Mrs. Bart and Ms. Jones used a token economy system called “The Buck System” in their classrooms to encourage class participation and overall appropriate classroom behavior. The Buck System involved each teacher “catching” individual students behaving appropriately and rewarding the behavior by providing students with generalized token reinforcers (i.e., dimes made out of cardstock paper) that would be replaced with a “buck” after each student acquired 10 dimes. Bucks could be exchanged by students every Friday for tangible prizes (e.g., erasers, pencils, bracelets, edibles) that had been agreed upon by the class as a whole prior to the token economy’s implementation. Teachers would reward students for behaviors, such as working quietly, raising hands, and helping other students.

**Function-based intervention phase.** The strategies developed by each teacher during the function-based intervention planning training module were implemented with Todd and Alan for a minimum of three sessions or until a stable data pattern was observed. During each session of implementation with Todd and Alan, each teacher received coaching and performance feedback by the experimenter to ensure that strategies developed during the planning process were being implemented appropriately. This was done so that the teacher could improve implementation fidelity. Performance feedback and coaching were to be unavailable to teachers when they implemented the function-based interventions with Shaun and Jaquan to determine teachers’ generalization of their learned skills.

**Nonfunction-based intervention phase.** This phase was similar to the function-based intervention phase in that the nonfunction-based strategies developed by the teacher and experimenter were implemented. As previously indicated, these strategies were contraindicative to the perceived function of each student's problem behavior. During this phase, coaching and performance feedback was also given as needed during each session with Todd and Alan to ensure that the nonfunction-based intervention was being implemented with fidelity. By doing so, accurate comparisons regarding fidelity and student outcomes could be made across both function-based and nonfunction-based conditions. Again, data were collected over a minimum of three sessions during this phase until clear trends in the data emerged. Performance feedback and coaching were to be unavailable to teachers when they implemented the nonfunction-based interventions with Shaun and Jaquan to determine teachers' generalization of their learned skills.

#### *Procedural Fidelity*

Task analyses were created for the baseline condition and for each component of the FBA process for procedural fidelity measure. Specifically, seven checklists (i.e., baseline, FAI, FAO, FAM, plan development, function-based intervention implementation, nonfunction-based intervention implementation) were developed to assess the fidelity of development and implementation by each teacher. See Appendices K through Q for all fidelity checklists. These checklists were individualized for each teacher based on the FBA results for each specific phase. The experimenter collected the data 100% of the time for each teacher. Fidelity was calculated as the number of steps followed correctly divided by the total number of required steps, and multiplied by 100. Interobserver agreement of the fidelity measure was also conducted for a minimum of

30% of the completed fidelity measures by the secondary observer (i.e., paraprofessional).

**Generalization of teacher behavior.** Fidelity data were taken on the classroom teacher's ability to implement all FBA procedures with a second student (i.e., Shaun and Jaquan). After all training sessions and all phases of the FBA were implemented for Todd and Alan, each teacher then replicated the FBA process with Shaun and Jaquan without the experimenter's support. Data on the accuracy of implementation were graphed for analysis.

#### *Data Analysis*

Since the primary focus of the study was on improvements in students' social behavior, the data from direct observations were graphed across all conditions for each participant to allow for visual analysis (i.e., changes in level and/or trend) of the comparative effects of the function-based versus nonfunction-based interventions to determine which intervention had a greater impact on each student's targeted social behavior. Additionally, fidelity data were graphed so that results could be analyzed descriptively.



## CHAPTER 4: RESULTS

This chapter presents findings of the study. Results for interobserver reliability and fidelity measures are presented first followed by the FBA process (Part 1) results. Finally, results for each research question are provided.

### **Interobserver Reliability**

#### *Students' Off-task and Replacement Behavior*

The trained second observer collected interobserver reliability data for 41.6% of the behavior observations for the both dependent variables (i.e., students' off-task behavior, student's self-management replacement behavior) for Todd and Alan. Overall interobserver reliability ranged from 97.5% to 100.0% with a mean of 99.9%. Interobserver reliability was 100.0% across all baseline phases. During the function-based intervention, interobserver reliability ranged from 97.5% to 100.0% with a mean of 99.7%. During the nonfunction-based intervention, interobserver reliability was 100%. Table 1 below shows mean interobserver reliability results separated by student.

Table 1: *Mean Interobserver Reliability Results by Student*

Student	Baseline Phases	Function-based Phases	Nonfunction-based Phases
Todd	100.0%	99.5% (range 97.5-100%)	100.0%
Alan	100.0%	100.0%	100.0%

### *Teacher Fidelity of Implementation*

In addition to interobserver reliability of students' behavior, the second observer also collected interobserver reliability data on each teacher's ability to implement all phases of the FBA process. The second observer collected the data for 43.8% of the fidelity checks. Overall interobserver reliability ranged from 93.6% to 100.0% with a mean of 99.4%. Interobserver reliability during the FAI for all 4 students ranged from 93.8% to 100.0%, with a mean of 98.5%. Interobserver reliability during the FAO for all 4 students was 100.0%. During the FAM, interobserver reliability for all 4 participants ranged from 93.6% to 100.0%, with a mean of 98.2%. Mean interobserver reliability for plan development for Todd and Alan was 100%. During baseline phases, function-based intervention phases, and nonfunction-based intervention phases, mean interobserver reliability for both Todd and Alan was also 100.0%.

### *Part I: Functional Behavioral Assessment Results*

**FAI, FAO, and FAM.** The FAI, FAO, and FAM were completed for all four participants. Results from the FAI were used to determine which behaviors would be the focus of the FAO for each student and when the observations would take place. Based on the FAO training they received, both teachers used the FAI results to determine which targeted behaviors occurred at a low to moderate frequency (fewer than 20 times per day). These behaviors were then recorded on the FAO form and targeted for observation. Both teachers chose to observe behavior by instructional blocks during the entire school day to allow them to confirm or revise times and settings during which the behaviors were most likely to occur. Prior to implementation of the FAO, each teacher further refined the topography of each behavior they were to observe. Results from the FAO

were then used to set up the FAM so that the behavioral function for each student could be confirmed. Results for the FAI, FAO, and FAM are presented below for each student.

**Todd.** Results from the FAI (see Appendix R for completed FAI for Todd) for Todd indicated four problem behaviors that were to be the focus of the FAO. These behaviors were being off-task, physical tantrums, punching objects, and arguing back with peers or adults. The FAI also indicated that most of these behaviors occurred in the morning time before lunch. No specific setting event was identified.

Results from the FAO (see Appendix S for Todd's completed FAO form), with observations taking place over a 3-day period, indicated that Todd's highest rates (i.e., 13 of 15 occurrences) of inappropriate behavior were off task in nature (i.e., not working on individual task, fidgeting, playing with tangibles within reach, talking to peers about non task-related topics, eyes not on work for more than 3 s). The predictors appeared to be alone time or during partner work that occurred during the shared reading block and the guided reading/stations block. The actual consequences delivered by Mrs. Bart were verbal redirects or ignoring the behavior. The FAO results revealed that there were two perceived functions of escape or teacher attention. Because slightly more off-task behaviors occurred when the function was escape (i.e., 9 of 15 occurrences), the experimenter and teacher chose to test escape as the hypothesized function during the FAM.

To validate the behavioral function, the FAM was set up for Todd using an alternating treatments design with escape and no escape as the two conditions being manipulated. The FAM took place during 16-min observation sessions using 1-min MTS, with both the escape and no escape conditions lasting 8 min each. The order of conditions

for each observation session was randomly chosen to control for sequence effects. During the no escape condition, Mrs. Bart set her MotivAider to 1-min intervals and would elicit a quick verbal reprimand (e.g., “Todd, get back to work.”) with no further attention given for any instance of off-task behavior at the end of each interval. During the escape condition, Mrs. Bart used the MotivAider again and presented Todd with a break card that allowed him to rest (i.e., put his head down) for 40 s. Todd was trained prior to the FAM by the primary investigator on how to use the break card. Results from the FAM for Todd are shown in Figure 1. During the first FAM session, Todd had three occurrences of off-task behavior during the No Escape condition and one occurrence during the Escape condition. The second FAM session yielded three occurrences of off-task behavior in each of the two conditions, and the third session resulted in one occurrence of off-task behavior during the No Escape condition and two during the Escape condition. During the first three FAM sessions, the primary investigator and Mrs. Bart observed that Todd’s off-task behavior appeared at higher rates when he was transitioning from station to station during the reading block. Because of this observation, two transitions were contrived into the subsequent FAM sessions beginning with the fourth session. Sessions four through six resulted in higher occurrences (i.e., 7, 2, 3) of off-task behavior in the No Escape condition than in the Escape condition (i.e., 1, 0, 1). The data path for the No Escape condition showed a highly variable and slightly increasing trend with the data path for the Escape condition showing some level of stability and a slightly lower occurrence level. After six sessions the escape function was validated, because there were no overlapping data points in the final three sessions and higher rates of off-task behavior occurred when Todd’s access to escape was blocked.

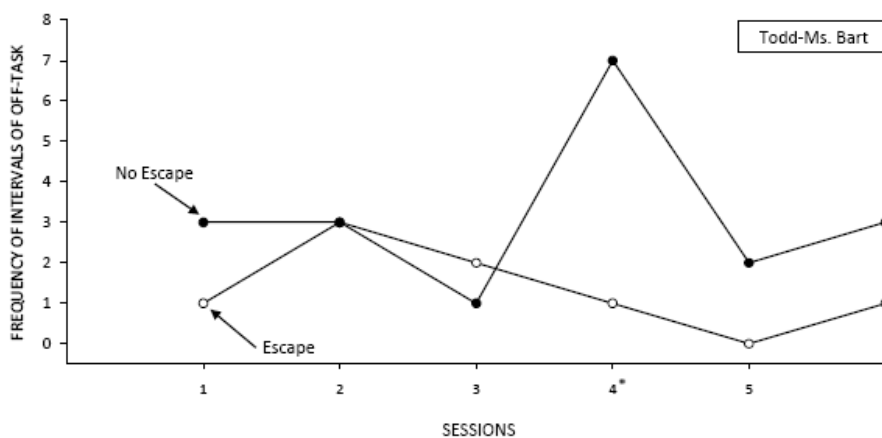


Figure 1. Results of Todd's FAM

*Note.* \* indicates that two transitions were contrived into the 16 min observation period beginning with session 4

**Alan.** On the FAI (see Appendix T for Alan's completed FAI form), Ms. Jones indicated five behaviors that were most problematic for Alan. These behaviors were talking out, fidgeting, ignoring directions, out of seat, and dishonesty. These behaviors were most likely to have occurred during reading (whole group or independent work), math, and science blocks. No specific setting event was identified.

Results from the FAO (see Appendix U for Alan's completed FAO form) indicated that Alan's off-task behavior (i.e., talking to self or others about non-task related topics, constant body movement, playing with hair or objects within reach, out of seat, eyes not on teacher or instructional materials for 3 s or more) were the only behaviors to occur (i.e., 16 out of 16 times). The FAO sessions were conducted over a span of 2 days. The specific predictor appeared to be whole group instruction (i.e., 10 of 16 occurrences). The FAO results also revealed that the perceived function indicated by Ms. Jones was most often escape from tasks or activities, while the actual consequences delivered were either redirections or ignoring the behavior.

To validate the behavioral function, the FAM was set up for Alan using the exact same procedures as Alan's FAM. The first FAM session resulted in five occurrences of off-task behavior during the No Escape condition and three occurrences during the Escape condition. In the second FAM session, Alan exhibited four occurrences of off-task behavior during the No Escape condition and one occurrence during the Escape condition. Session three yielded no off-task behavior in either condition, and the final FAM session resulted in three occurrences of off-task behavior in the No Escape condition compared to one occurrence in the Escape condition. The data paths for the No Escape and Escape conditions showed variability, with only one overlapping data point in the third session. There was clear separation between the data paths for three of the four sessions, indicating that the escape function was validated as the behavioral function. Additionally, higher rates of off-task behavior occurred when Alan's access to escape was blocked. The results of Alan's FAM are shown in Figure 2 below.

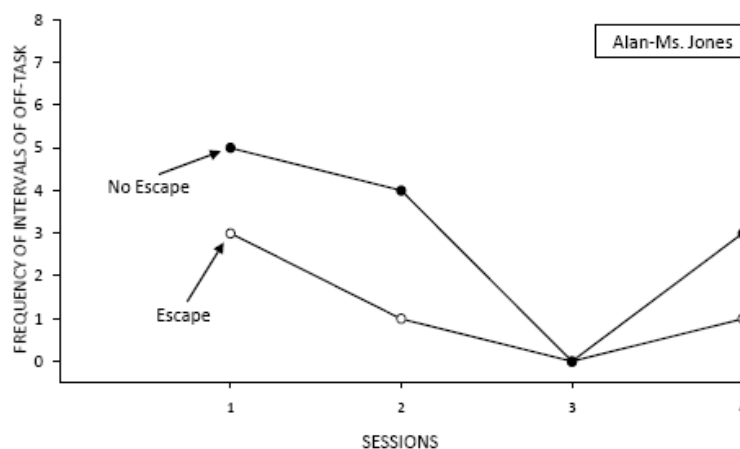


Figure 2. Results of Alan's FAM

**Shaun.** Shaun's FAI results (see Appendix V for Shaun's completed FAI form) indicated that off-task behavior, such as wandering around the room, talking to others,

and eyes not being on instructional materials were most problematic and the only behaviors identified by his teacher. These behaviors were most likely to occur in the morning before lunch, especially during reading and math stations. Additionally, Mrs. Bart identified that increases in noise and movement of other students and pairing him with particular student for partner work tended to be triggers of his off-task behavior. There were no clear setting events.

Results from Shaun's FAO (see Appendix W for Shaun's completed FAO form) revealed that the problem behaviors for which he was originally referred were occurring at significantly lower rates than earlier in the school year. Specifically, after four days of observation, Shaun only exhibited 10 occurrences of off-task behavior. More than half (i.e., 7 of 12) of all Shaun's off-task behavior occurred during the reading stations and guided reading blocks before lunch. The predictor most often chosen by Mrs. Bart was that a demand or request had been made (i.e., 6 of 12 occurrences). The FAO also yielded that escape was the potential function of his off-task behavior. Though Shaun's targeted behaviors were occurring at such low rates, both the experimenter and Mrs. Bart chose to follow through with the FAM to determine whether or not the FBA should continue into the plan development phase.

Shaun's FAM was set up using the same procedures as Todd and Alan's FAM; however, because his behaviors were occurring less frequently, each FAM session was extended to 32 min. Both the escape and no escape conditions lasted 16 min each, and order of conditions was randomized from session to session. After three FAM sessions, Shaun only exhibited one occurrence of off-task behavior. Results of his FAM are shown

in Figure 3 below. Because of the low occurrences of problem behavior during both FAM conditions, no clear function could be validated.

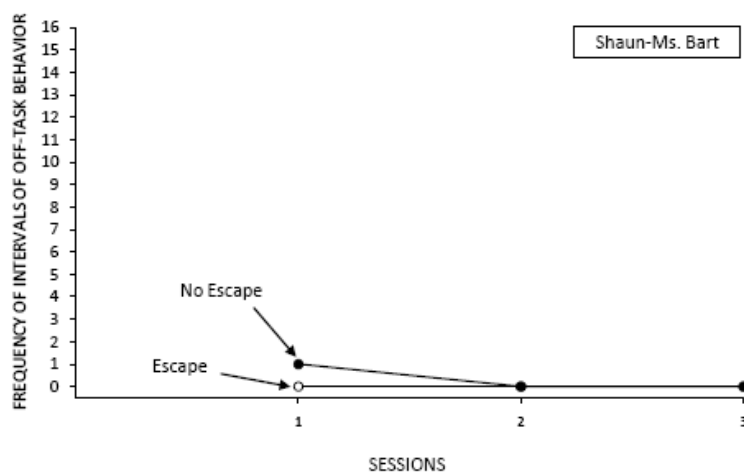


Figure 3. Results of Shaun's FAM

**Jaquan.** FAI results (see Appendix X for Jaquan's completed FAI form) indicated that Jaquan's problem behaviors were talking out during instruction, mumbling under breath, and talking back in an argumentative tone when being redirected by Ms. Jones. These behaviors were most likely to occur throughout the day during whole-group, content area instruction. Similar to Shaun's FAO, results from Jaquan's FAO revealed that the problem behaviors for which he was originally referred were occurring at significantly lower rates than earlier in the school year. Specifically, after 3 days of observation, Jaquan only exhibited 12 occurrences of talking-out behavior and no occurrences of other problem behavior. Results from the FAO (see Appendix Y for Jaquan's completed FAO form) conducted on Jaquan revealed that his talking-out behavior occurred at the highest rates during whole group math instruction that occurred after lunch. Ms. Jones indicated that the perceived function of his talking-out behavior



was attention. Similarly, there was no clear setting event that might have temporarily altered the value of antecedent or consequence events.

To test this hypothesized function, Ms. Jones and the experimenter set up the FAM so that contingent attention and noncontingent attention were the two conditions being manipulated. Again, because Jaquan’s problem behaviors were occurring at much lower rates than earlier in the school year, each FAM session was extended to 32 min to increase the chance of observing the targeted behavior. Jaquan’s FAM was set up using an event recording method because of the discrete nature of his talking-out behavior. Ms. Jones used a MotivAider that was set to vibrate at 2-min intervals during the 16-min noncontingent attention condition. During this condition, Ms. Jones delivered noncontingent verbal praise (e.g., “You are doing a great job raising your hand, Jaquan.”) every 2 min. During the contingent attention condition, Ms. Jones delivered a verbal rule reminder after every occurrence of talking-out behavior during the 16 min period. The order of conditions was randomized across the three FAM sessions. Results from Jaquan’s FAM are shown in Figure 4 below. Because of the low occurrences of problem behavior during both conditions, no clear function could be validated.

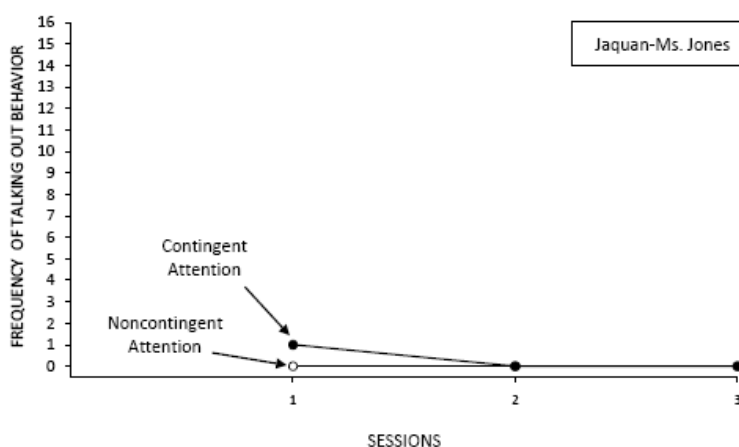


Figure 4. Results of Jaquan’s FAM

**Development of interventions.** Because Shaun and Jaquan's problem behavior for which they were originally referred had decreased greatly (as evidenced by the FAO and FAM results), both teachers felt there was no longer a need to develop a behavior plan based on the FBA results. Both teachers also noted anecdotally that Shaun and Jaquan had both been seen by physicians and placed on medication that appeared to decrease the rates of problem behaviors seen in the classroom. The experimenter kept anecdotal records as well. For example, during one of the FAM sessions for Jaquan, Ms. Jones delivered noncontingent attention through verbal praise by stating, "Jaquan, I'm really proud of how well you are doing with raising your hand." Jaquan responded with the statement, "Well Ms. Jones, I have been doing a better job at remembering to take my medicine." Because of the teachers' decisions to discontinue the FBA process for Shaun and Jaquan, only the function-based and nonfunction-based interventions for Todd and Alan will be discussed.

Hypothesis statements were made for each student as part of the FAI, and then revised after the FAO. The FAM validated the function hypothesized, and teachers used the final hypothesis statements for each Todd and Alan to develop the intervention packages. The final hypothesis statement developed for Todd was: "When given independent or partner work (reading stations), Todd will engage in off-task behavior to avoid task completion. This is more likely to occur during transitions between activities." Alan's final hypothesis statement was: "When in whole group instruction, Alan will engage in off-task behavior to avoid or escape the activity."

**Todd.** The function-based intervention plan created for Todd by Mrs. Bart involved an antecedent strategy of creating a laminated schedule for the reading stations

block for him to keep at all times during that specified period. As a teaching strategy, Todd was trained by Mrs. Bart on how to self-manage his on-task behavior through the use of a laminated self-management chart and a MotivAider electronic device that vibrates at set time increments. Todd recorded his behavior in 2- min intervals and at the end of 5 intervals (i.e., 10 min total), reinforced his own behavior by self-initiating a 2- min break. This occurred for a total of 48 min during reading stations. Specifically, 40 min were used to self-monitor and the remaining 8 min were Todd's four potential break times during the reading station block. During the first function-based intervention phase (i.e., three sessions), Mrs. Bart also monitored Todd's behavior using a second identical self-management chart and her own MotivAider that was set in sync with Todd's. She performed checks at the end of each 10-min block during those sessions as a reliability and integrity measure for accuracy of Todd's self-management behavior. In subsequent function-based phases, Mrs. Bart decreased her reliability checks to once per phase. As a consequence strategy, Mrs. Bart practiced extinction of Todd's off-task behavior by quickly pointing to Todd's self-management chart for redirection of on-task behavior. No verbal prompts or rule reminders were given. Todd's on-task behavior was self-reinforced through his own initiation of a 2-min break when earned.

The nonfunction-based intervention chosen for Todd included an antecedent strategy of verbal encouragement prior to the start of the reading station block. Mrs. Bart would initiate phrases to Todd, such as "I know you can do well during reading stations today." This occurred daily during each nonfunction-based phase. As a teaching strategy, the teacher re-taught on-task behavior expectation to the entire class (e.g., bottom in seat, pencil in hand, no talking to others, working on assignment). Variations of this

expectation were repeated daily prior to the start of reading stations. As a consequence strategy, opportunities for breaks were blocked. Specifically, Todd was given no break upon the completion of a task or upon transitions from station to station. He was either redirected to the current assignment, given the next assignment, required to move to the next station, or was to read his Accelerated Reader (AR) book upon completion of a task. A summary of both his function-based and nonfunction-based interventions are shown in Table 2.

Table 2: *Function-based and Nonfunction-based Interventions for Todd*

<b>Student Name:</b>	<b>Setting Event:</b>	<b>Antecedent:</b>	<b>Behavior:</b>	<b>Off-task (i.e. eyes not on teacher or instructional materials for 3 sec or more; playing with objects within reach)</b>	<b>Typical Consequence:</b>
Todd	Transitions during independent reading stations	Reading stations (independent/small group)			Redirection; ignoring
<b>Function-based Intervention:</b>	laminated schedule during reading stations		Self-manage behavior using a laminated self-management chart and Motivaider device; records behavior in 2-min intervals; self-initiates 2-min break after every 10 min on task		Teacher uses extinction of off-task behavior by quickly pointing to Todd's self-monitoring chart as a redirection for on-task behavior.  Reinforcement of replacement behavior through self-initiation of 2-min break
<b>Nonfunction-based intervention:</b>	Teacher provides encouragement prior to start of reading stations (e.g., "I know you will do a great job during stations today.")		Teacher re-teaches on-task behavior expectation to entire class: bottom in seat, pencil in hand, work on assignment		No break upon completion of task or changing of reading station; student given next assignment/task/move to next station

**Alan.** The function-based intervention plan created for Alan by Ms. Jones was very similar to Todd's. Alan's intervention involved the antecedent modification of relocating his desk so that it was in closer proximity to Ms. Jones and away from peers. As a teaching strategy, Alan was trained by Ms. Jones on how to self-manage his on-task behavior through the use of a laminated self-management chart and a MotivAider electronic device that vibrates at set time increments. Alan recorded his behavior in 2-min intervals and at the end of 5 intervals (i.e., 10 min total), reinforced his own behavior by self-initiating a 2-min break. This occurred for a total of 30 min during reading stations. Specifically, 26 min were used to self-monitor and the remaining 4 min were Alan's two potential break times during the guided reading block. During the first function-based intervention phase (i.e., 3 sessions), Ms. Jones also monitored his behavior using a second replicated self-management chart and her own MotivAider that was set in sync with Alan's. She performed checks at the end of each 10 min block during those sessions as a reliability and integrity measure for accuracy of Alan's self-management behavior. In subsequent function-based phases, Ms. Jones decreased her reliability checks to once per phase. As a consequence strategy, Ms. Jones practiced extinction of Alan's off-task behavior by quickly pointing to Alan's self-management chart for redirection of on-task behavior. No verbal prompts or rule reminders were given. Alan's on-task behavior was self-reinforced through his own initiation of a 2-min break when earned.

The nonfunction-based intervention chosen for Alan was almost identical to Todd's. It included an antecedent strategy of verbal encouragement prior to the start of the guided reading block. Ms. Jones would initiate phrases to Alan, such as "I know you will do a great job during our reading lesson today." This occurred daily during each

nonfunction-based phase. As a teaching strategy, the teacher re-taught on-task behavior expectation to the entire class (e.g., bottom in seat, pencil in hand, no talking to others, working on assignment). Variations of this expectation were repeated daily prior to the start of the guided reading block. As a consequence strategy, access to breaks were blocked. Specifically, Alan was given no break upon the completion of a task. He was either redirected to the current assignment, given the next assignment, or was to read his Accelerated Reader (AR) book upon completion of a task. A summary of both his function-based and nonfunction-based interventions are shown in Table 3 below.

Table 3: *Function-based and Nonfunction-based Interventions for Alan*

<b>Student Name:</b>	<b>Setting</b>	<b>Antecedent:</b>	<b>Behavior:</b>	<b>Typical</b>
"Alan"	<b>Event:</b> None noted	Guided Reading (whole group instruction)	Off-task (i.e. talking to self or others about non-task related topics; constant body movement; playing with hair or objects within reach; out of seat (legs on chair, rocking back and forth); eyes not on teacher or instructional materials for 3 sec or more)	<b>Consequence:</b> Redirection; ignoring
<b>Nonfunction-based Intervention</b>	Teacher provides encouragement prior to start of guided reading (e.g., "I know you will do a great job during our reading lesson today.")		Teacher re-teaches on-task behavior expectation to entire class: bottom in seat, pencil in hand, work on assignment	No break upon completion of task; student given next assignment/ task

<b>Function-based Intervention</b>	Alan's desk will be relocated so that it is in closer proximity to the teachers and away from peers	Self-manage behavior using a laminated self-management chart and Motivaider device; records behavior in 2-min intervals; self-initiates 2-min break after every 10 min on task	Teacher uses extinction of off-task behavior by quickly pointing to Alan's self-monitoring chart as a redirection for on-task behavior.  Reinforcement of replacement behavior through self-initiation of 2-min break
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**Expert ratings.** As previously described, three experts in the field of ABA who were not directly involved in this research study examined the proposed interventions with no distinguishing terms to indicate which interventions were function-based or nonfunction-based. Each intervention package was scored as a whole on the degree to which it made the identified problem behavior irrelevant, inefficient, and ineffective. The scores from the three items were averaged together for each intervention. The means across all three experts were then averaged together a final time and interventions with a mean rating above 4.0 were used as function-based interventions and interventions with ratings below 2.5 were used as non-function-based interventions. Results are shown in Table 4 below. The experts rated the function-based intervention for Todd with a mean total of 4.22 and a range from 3.67 to 4.67. Todd's nonfunction-based intervention was rated a mean of 1.78, with ranges from 1.67 to 2.00. Alan's nonfunction-based and function-based interventions earned the same ratings as Todd's experts, as both students' interventions were very similar in nature.

Table 4: *Expert ratings of interventions*

		Expert 1	Expert 2	Expert 3	Mean Total
Todd					
(FB)	Intervention 1	3.67	4.33	4.67	4.22
(NFB)	Intervention 2	1.67	1.67	2.00	1.78
Alan					
(NFB)	Intervention 1	1.67	1.67	2.00	1.78
(FB)	Intervention 2	3.67	4.33	4.67	4.22

*Part II: Research Questions*

**Research Question 1: What are the comparative effects of function-based versus nonfunction-based interventions on decreasing classroom problem behavior of African American elementary students at risk for ED?**

Results for the off-task and replacement self-management behavior for both Todd and Alan are presented in Figures 5 and 6 below. Each graph shows results across baseline, function-based intervention phases, and nonfunction-based intervention phases. Data for both off-task behavior and replacement self-management behavior are shown as percentages of observation intervals. Results for both students indicated a functional relationship between the function-based interventions and decreased off-task behavior. Additionally, results suggested that the function-based interventions were superior to nonfunction-based interventions in decreasing the off-task behavior of both students.

**Todd.** Figure 5 shows the graphed data of Todd's off-task and self-management behavior. During baseline, Todd's off-task behavior ranged from 31% to 51.6%, with a mean of 41.7%. Data during this phase were slightly variable with an increasing trend. During the first function-based intervention phase, Todd's off-task behavior dropped dramatically and remained low and stable, with a range of 0% to 2.5% of intervals of off-



task behavior and a mean of 0.8%. This is a change of 40.9% from baseline to the first function-based phase. During the second baseline phase, Todd's behavior increased to levels similar to those during the first baseline. Data were stable, ranging from 42.5% to 52.9%, with a mean of 48.1%. In the second function-based phase, Todd's off-task behavior decrease again and indicated zero trend and a stable data path. Data during the second function-based phase ranged from 0% to 2.5% with a mean of 1.7%. This is a change of 46.4% from the second baseline to the second function-based phase. When comparing both function-based intervention phases to both baselines, there are changes in level that indicate a functional relationship between the function-based intervention created for Todd and his off-task behavior.

When the nonfunction-based phase was implemented, the results show that Todd's off-task behavior increased with ranges from 34.3% to 45.0% and a mean of 40.4%. This mean is similar to the means during both baseline phases. During the final function-based phase, Todd's off-task behavior decreased to near-zero levels just as in the two previous function-based phases. The data during this phase ranged from 0% to 2.5% with a mean of 1.3%. During the final nonfunction-based phase, Todd's off-task behavior ranged from 36.1% to 39.5% with a mean of 37.7%. The data during this phase are similar to the levels exhibited during the previous baseline and nonfunction-based intervention phases.

When examining the comparative effects of the function-based versus nonfunction-based interventions on Todd's off-task behavior, the function-based phases resulted in considerably decreased percentages of off-task behavior when compared to the nonfunction-based intervention phases. These data indicate a functional relationship

between Todd's function-based intervention plan and decreases in off-task behavior and that the function-based intervention plan was more effective than the nonfunction-based intervention plan in decreasing his off-task behavior.

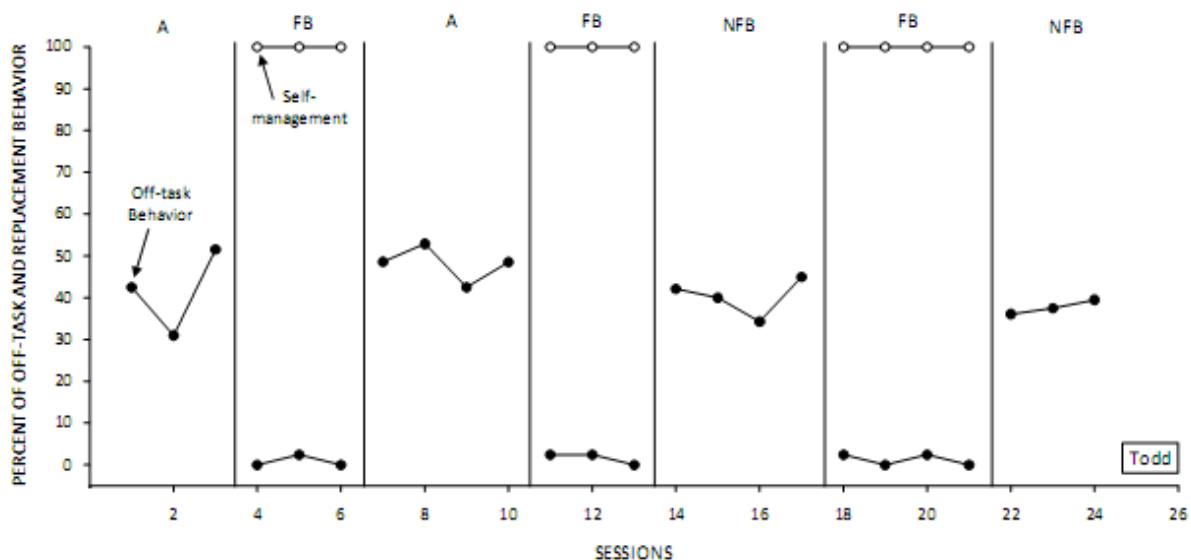


Figure 5. Percent of Todd's off-task and replacement self-management behavior across Baseline (A) phases, Function-based (FB), and Nonfunction-based (NFB) phases.

**Alan.** Figure 6 depicts Alan's graphed off-task and self-management behavior data. During the first baseline phase, Alan's off-task behavior data indicated an increasing trend with ranges from 43.3% to 56.7% and a mean of 50.0%. Because phases were counterbalanced across students, the nonfunction-based intervention was implemented first for Alan. During this phase, Alan's off-task behavior increased slightly. The data during the first nonfunction-based phase ranged from 66.7% to 76.7%, with a mean of 71.1%. Data from the second baseline phase were similar to those from the first nonfunction-based phase. Alan's off-task behavior ranged from 66.3% to 70.0%, with a mean of 66.7%. When the nonfunction-based phase was implemented a second time, his off-task behavior ranged from 56.7% to 73.3%, with a mean of 64.4%. There

were no changes in level or trend from the second baseline through the second nonfunction-based phase. The first implementation of the function-based intervention resulted in a considerable change in level of Alan's off-task behavior. During this phase, Alan's off-task behavior ranged from 6.7% to 13.3%, with a mean of 9.0%. When comparing the mean percentages of off-task behavior during the second nonfunction-based phase (64.4%) to the mean percentage of off-task behavior during the first function-based implementation (9.0%), there is a decrease of 55.4%. When the nonfunction-based intervention was implemented a third time, the data indicate another change in level. During this phase, Alan's off-task behavior increased greatly with ranges from 70.0% to 76.7% and a mean of 73.3%. During the final function-based phase, Alan's off-task behavior decreased again, with ranges from 0% to 6.7% and a mean of 4.2%.

When examining the comparative effects of the function-based versus nonfunction-based interventions on Alan's off-task behavior, the function-based phases resulted in considerably decreased percentages of off-task behavior when compared to both the nonfunction-based intervention phases and baseline phases. These data indicate a functional relationship between Alan's function-based intervention plan and decreases in off-task behavior and that the function-based intervention plan was more effective than the nonfunction-based intervention plan in decreasing Alan's off-task behavior.

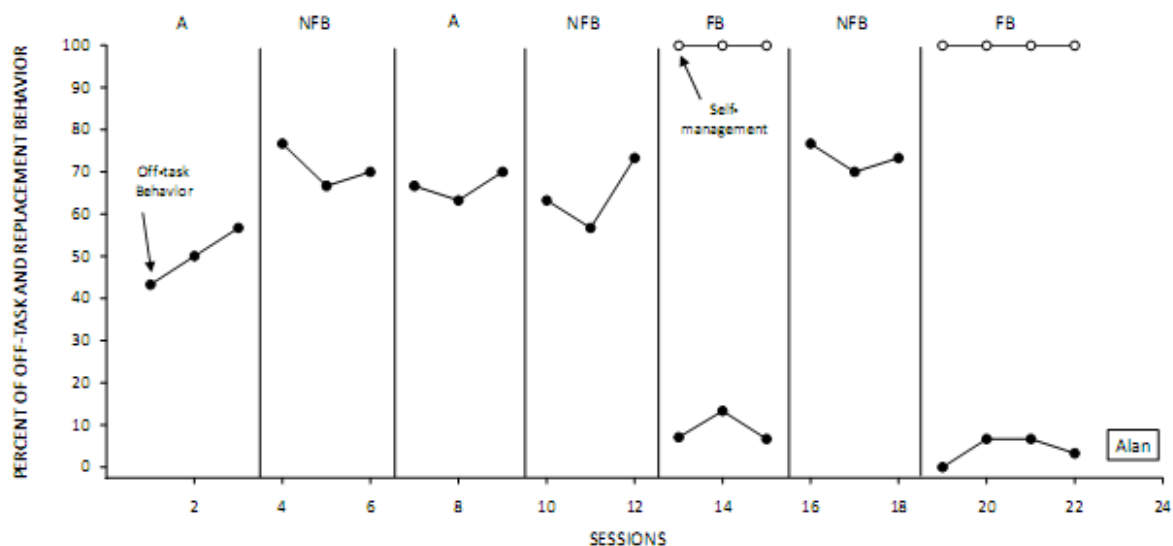


Figure 6. Percent of Alan's off-task and replacement self-management behavior across Baseline (A) phases, Nonfunction-based (NFB), and Function-based (FB) phases.

**Research Question 2: What are the effects of function-based interventions on increasing appropriate replacement behavior of African American elementary students at risk for ED?**

For both Todd and Alan, self-management of on-task behavior was the replacement behavior chosen by their teachers. As shown in Figures 5 and 6, Todd and Alan exhibited self-management off on-task behavior with an accuracy of 100% during all function-based phases. The data on the percentage of their off-task behaviors do not indicate levels of 0% for every session. This is because the experimenter took more exact data (i.e., 1 min MTS) than the students' self-management at 2 min intervals. Therefore, the experimenter was able to capture instances of off-task behavior that may have occurred within the 2 min intervals. During the baseline and nonfunction-based phases self-management was not used; therefore, no data were graphed during these phases.

**Research Question 3: To what extent does a training package that includes coaching and performance feedback improve general education teachers' abilities to conduct FBAs and implement function-based interventions with high fidelity?**

Procedural fidelity checklists were created for each phase of the FBA process, including the creation and implementation of function-based and nonfunction-based interventions for each student. Procedural fidelity checklists were also created for each teacher during the baseline phase to ensure that classroom management procedures remained in place. The experimenter was present every day and prepared to deliver performance feedback at the end of each session and coaching when steps were performed incorrectly.

**Mrs. Bart.** As evidenced by the graph in Figure 7, Mrs. Bart exhibited high levels of fidelity throughout each phase of the FBA process. Mrs. Bart's procedural fidelity ranged from 93.8% to 100.0%, with a mean of 99.8%. In fact, Mrs. Bart only had one instance of fidelity below 100.0%. This occurred during the FAI phase. Mrs. Bart missed 1 of 16 steps of the FAI procedural fidelity checklist by failing to record the respondent's names.

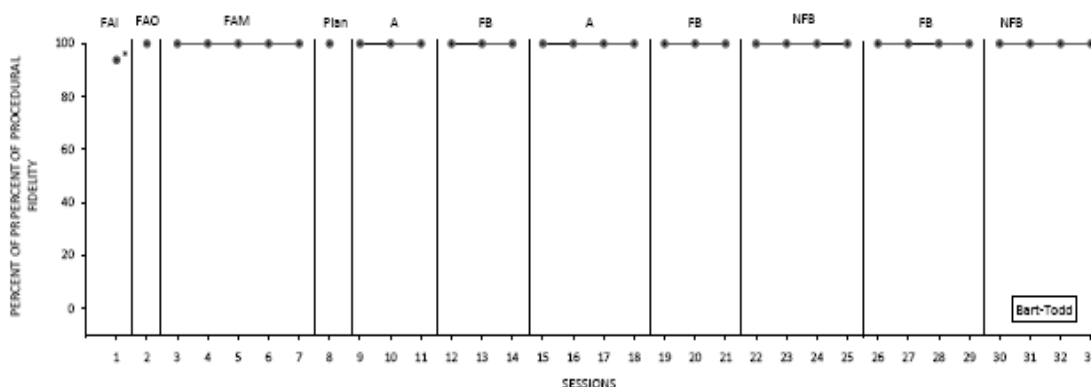


Figure 7. Procedural fidelity data throughout Todd's FBA and plan implementation for Mrs. Bart

*Note.* \* indicates coaching was provided

**Mrs. Jones.** Similar to Mrs. Bart, Figure 8 shows that Ms. Jones also exhibited high levels of fidelity throughout each phase of the FBA process. Ms. Jones' procedural fidelity ranged from 87.5% to 100.0%, with a mean of 98.3%. Ms. Jones had five sessions in which fidelity fell below 100.0%. Specifically, during the FAI phase, Ms. Jones missed 2 of 16 steps of the FAI procedural fidelity checklist by failing to record the date of the interview and interviewer name and respondent's names. During the FAM phase, all missed steps were a result of failing to record occurrences and nonoccurrences of the targeted behavior accurately. Because the experimenter was present, she was able to provide in vivo coaching at the moment of the missed step to increase the possibility of improving accuracy for the remainder of the session and for remaining FAM sessions. As shown on the graph, Ms. Jones improved her fidelity during the FAM after the first session. During the intervention implementation phases, Ms. Jones had one instance in which fidelity fell below 100%. During one nonfunction-based session, Ms. Jones failed to provide the verbal reminder of on-task behavior expectation to the entire class. During this session, the experimenter reminded Ms. Jones of this step and she immediately provided the reminder; however, this resulted in fidelity of 87.5% for that day.

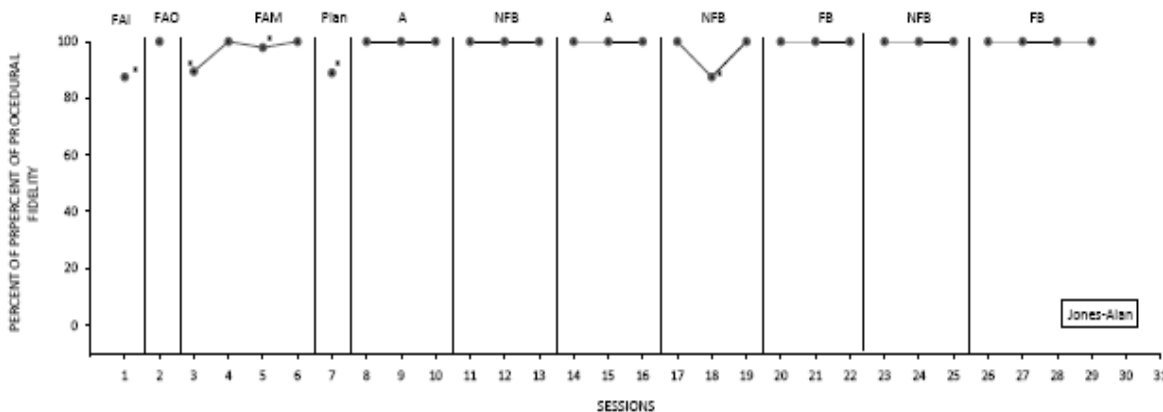


Figure 8. Procedural fidelity data throughout Alan's FBA and plan implementation for Ms. Jones

*Note.* \* indicates coaching was provided

The descriptive data indicate that both Mrs. Bart and Ms. Jones were able to implement all phases of the FBA process with very high fidelity (i.e., at least 85%). Only when a step was missed or performed inaccurately was coaching provided.

**Research Question 4: To what extent do teachers implement nonfunction-based interventions with high fidelity?**

The data above in Figures 7 and 8 also indicate that both teachers were able to implement the nonfunction-based interventions with almost the same levels of fidelity as the function-based interventions. Specifically, Mrs. Bart implemented the nonfunction-based intervention with a mean of 100% across all phases. Ms. Jones also had high fidelity with implementation of the nonfunction-based intervention at a mean of 98.6% across all phases.

**Research Question 5: To what extent can teachers generalize learned skills during FBA training to new student behavior?**

As previously described in the method section, one of the original goals of the study was to conduct the FBA process with one student (i.e., Student A) when provided

with a training package that included coaching and performance feedback and then to replicate the FBA process independently with a second student (i.e., Student B) from each of the two participating teachers' classrooms. However, when both teachers reached the behavior plan development of the study, both Shaun and Jaquan were no longer in need of specialized behavior support. Results from the FAI, FAO, and FAM for both students indicated that the target behaviors for which they were originally referred were occurring at such a low rate that intensive behavioral intervention plans were no longer necessary. These facts make it difficult to fully determine whether the teachers were able to generalize to a new student what they learned from the training package. However, procedural fidelity data were still taken during the FAI, FAO, and FAM phases and provide critical insight into this research question.

**Mrs. Bart.** Figure 9 shows that Mrs. Bart was able to maintain high levels of fidelity for the second student, Shaun, on implementation of FAI, FAO, and FAM procedures when training had ceased and no coaching or performance feedback were given. Specifically, she maintained fidelity at a mean of 100.0% across all of these three phases. When compared to the first three phases Mrs. Bart implemented with Todd that resulted in a mean of 97.9%, she improved her fidelity with the second student by 2.1%.



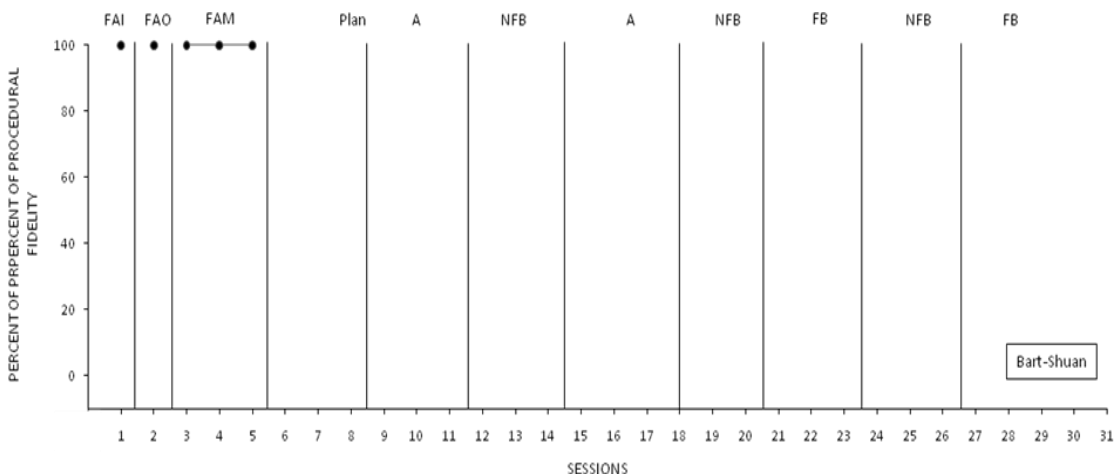


Figure 9. Procedural fidelity data for Bart during the FAI, FAO, and FAM for Ms. Jones

**Ms. Jones.** Figure 10 indicates that Ms. Jones was also able to maintain high levels of fidelity for her second student, Jaquan, without the training, coaching, and performance feedback that had been provided when working with Alan. She maintained fidelity at a mean of 98.8% and a range of 93.8% to 100.0% across the FAI, FAO, and FAM phases. When compared to the first three phases she implemented with Alan that resulted in a mean of 92.3%, Ms. Jones actually improved her implementation fidelity by 6.5%.

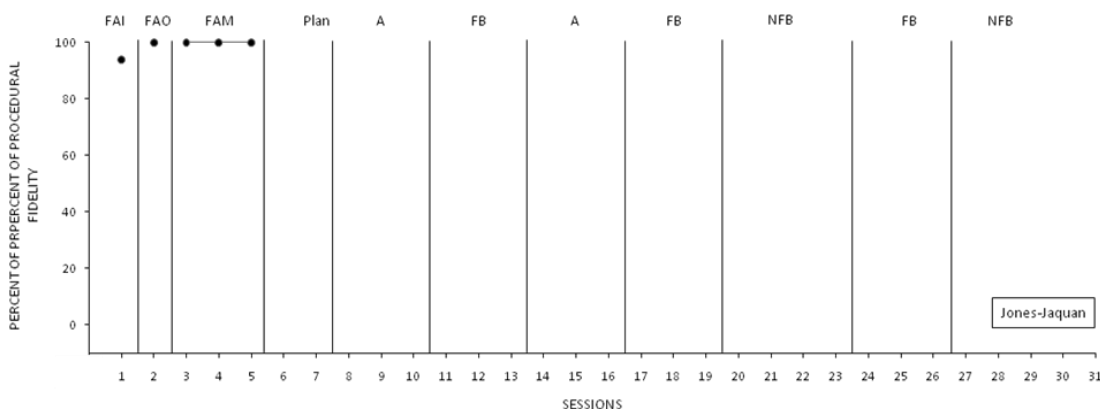


Figure 10. Procedural fidelity data for Bart during the FAI, FAO, and FAM for Ms. Jones

## Social Validity

**Research Question 6: What are teachers' opinions regarding the practicality and effectiveness of conducting FBAs?**

**Research Question 7: What are teachers' opinions regarding the practicality and effectiveness of function-based versus nonfunction-based interventions on decreasing students' problem behavior and on preventing special education referrals?**

This study sought to determine the social impact of FBA training, function-based interventions, and nonfunction-based interventions on teachers' perceptions regarding their practicality and effectiveness. Results from the first four social validity questions are shown in Table 5 below. Based on these results, both teachers indicated that the FBA instruction received in order to implement the FBA process with their students was of some or great importance. Ms. Jones felt the most important training topic was validating the FAI through direct observations. Both teachers felt that it was very important to create effective interventions that lead to sustainable behavior change and that interventions based on the function of a student's behavior were also very important. Mrs. Bart felt that interventions based on the topography of a student's behavior were also very important, while Ms. Jones rated this item as important.

Table 5: *Social Validity Questions Related to Importance of FBA Training*

Question	Teacher Ratings		
	Bart	Jones	Mean
1. As part of the training, you received instruction on several FBA components. How would you rate the level of importance on each of the following topics in order for you to implement the FBA process with your students?			
1. Applied Behavioral Analysis (ABA) Basics	4	3	3.5
2. Positive Behavior Support (PBS) and Functional Behavioral Assessment (FBA) Overview	4	3	3.5
3. The Functional Behavioral Assessment Interview (FAI)	4	3	3.5
4. Validating the FAI Through Direct Observation	4	4	4
5. Functional Analysis Hypotheses and Manipulations	4	3	3.5
6. Building Behavior Support Plans	4	3	3.5
7. Implementing Behavior Support Plans	4	3	3.5
2. How important do you believe it is to create interventions that are effective in creating behavior change?	4	4	4
3. How important do you believe it is to create an intervention based on the function of a student's behavior?	4	4	4
4. How important do you believe it is to create an intervention based on the physical form of a student's behavior?	4	3	3.5

Table 6 shows the social validity results related to the appropriateness and successfulness of the function-based and nonfunction-based intervention implementation. Both teachers indicated that function-based interventions are very appropriate interventions to implement as general education teachers and that such interventions were very successful in decreasing the off-task behavior and increasing the appropriate replacement behavior of both students. Additionally, both teachers indicated that the nonfunction-based interventions were appropriate to implement as general education teachers, but the nonfunction-based interventions were not at all or only had a little

success in decreasing the off-task behavior and increasing the appropriate replacement behavior of their students.

Table 6: *Social Validity Questions Related Appropriateness and Successfulness of Interventions*

Question	Teacher Ratings		
	Bart	Jones	Mean
5. You implemented two different behavioral interventions during this study, one of which was based on FBA results (i.e., function-based). How appropriate do you think this intervention was for you to implement as the general education teacher?	4	4	4
6. How successful do you feel the above function-based intervention was in decreasing the problem behavior of your student?	4	4	4
7. How successful do you feel the above function-based intervention was in increasing the replacement behavior of your student?	4	4	4
8. You implemented two different behavioral interventions during this study, one of which was <i>not</i> based on FBA results (i.e., nonfunction-based). How appropriate do you think this intervention was for you to implement as the general education teacher?	3	3	3
9. How successful do you feel the above nonfunction-based intervention was in decreasing the problem behavior of your student?	2	1	1.5
10. How successful do you feel the above nonfunction-based intervention was in increasing the replacement behavior of your student?	2	1	1.5

The teachers were also asked to rate the practicality of the FBA process and the likelihood that they would use (a) learned skills from FBA training in the future, (b) function-based interventions, and (c) nonfunction-based interventions. The results in Table 7 show that both teachers perceived the FBA process as very appropriate to implement in the general education setting. Additionally, both teachers indicated they would implement function-based interventions in the future but would not implement future interventions not based on behavioral function. Both teachers also indicated they

would use the FBA process with other students in their classrooms as a method for addressing problem behavior and that they would make no changes to the function-based interventions they implemented with the students in this study.

Table 7: *Social Validity Questions Related to Practicality of FBA*

Question	Teacher Ratings		
	Bart	Jones	Mean
11. Overall, how practical would you perceive the FBA process (i.e., finding variables and functions related to the problem behavior) to be regarding its implementation in general education settings?	4	4	4
12. What is the likelihood that you may continue to implement one or both sets of interventions with your two students?			
Function-based Intervention:	4	3	3.5
Nonfunction-based Intervention:	1	1	1
13. What is the likelihood that you may use what you learned in the trainings provided on FBA with other students in your class in order to address problem behavior?	4	3	3.5
14. Do you feel your perceptions in terms of treating students' problem behaviors have changed as a result of your experience in this study?	4	3	3.5
15. Would you make any changes in the development or implementation of the interventions that were implemented with your two students?	1	1	1

As a final part of the questionnaire, teachers were asked to complete the risk assessment they had completed as a pre-assessment at the start of the study. This risk assessment asked the teachers to rate the degree to which each teacher felt that the targeted student required disciplinary action or referral to special education under the category of ED. The same 4-point Likert rating scale was used with a 1 referring to not needing disciplinary action or special education services and a 4 referring to very much

needing disciplinary action or special education services. Table 8 shows results of the pre- and post-risk assessments.

Prior to the onset of the study, Mrs. Bart rated both of her students (i.e., Todd, Shaun) as needing much disciplinary action but that neither were at all in need of special education services under the category of ED. When asked to anecdotally record her reasoning for rating both students so low on the need for special education services, despite the fact that the SSIS subscale scores for both students indicated below average social skill ranges and above average problem behaviors, she stated that she felt it was her responsibility as the general education teacher to exhaust all intervention efforts before referring a student to special education. After implementing the function-based and nonfunction-based interventions with Todd, she was asked to complete the risk assessment again. As shown below when the function-based intervention was implemented, Mrs. Bart rated Todd as no longer in need of disciplinary action and still no continued need for special education services. However, when the nonfunction-based intervention was implemented her ratings remained the same as they had on the pre-risk assessment. Specifically, she indicated Todd was still in much need of disciplinary action when the nonfunction-based intervention was in place but not in need of special education services.

Prior to the onset of the study, Ms. Jones rated both of her students (i.e., Alan, Jaquan) as needing much disciplinary action and very much in need of needing special education services under the category of ED. After implementing the function-based and nonfunction-based interventions with Alan, she was also asked to complete the risk assessment a second time. As shown below when the function-based intervention was

implemented, Ms. Jones' ratings changed when compared to the pre-risk assessment. She indicated that she felt Alan as no longer in need of disciplinary action and had no continued need for special education services during the function-based intervention implementation. However, when the nonfunction-based intervention was implemented her ratings indicated that Alan was very much in need of disciplinary action and special education services under the category of ED. She stated that seeing the data allowed her to realize just how frequently his off-task behaviors were during baseline and the nonfunction-based intervention phases, which caused her to see a more intense need for disciplinary action and special education services when the nonfunction-based intervention was in place.

Table 8: *Pre- and Post-Risk Assessment for Disciplinary Action and Special Education*

Risk Assessment			Student	Mrs. Bart's Ratings	Student	Ms. Jones' Ratings
Pre	To what extent do you feel that each student requires disciplinary action or referral for special education under the category of ED prior to implementing any interventions?	Disciplinary Action:	Todd	3	Alan	3
		Special Education:	Todd	1	Alan	4
		Disciplinary Action:	Shaun	3	Jaquan	3
		Special Education:	Shaun	1	Jaquan	4
Post	To what extent do you feel that each student requires disciplinary action or referral to special education services under the category of ED as a result of the function-based and nonfunction-based interventions?	<b>Disciplinary Action:</b> Function-based Intervention:	Todd	1	Alan	1
		Nonfunction-based Intervention:	Todd	3	Alan	4
		<b>Special Education:</b> Function-based Intervention:	Todd	1	Alan	1
		Nonfunction-based Intervention:	Todd	1	Alan	4

## CHAPTER 5: DISCUSSION

The purpose of this study was to examine the comparative effects of function-based versus nonfunction-based interventions on the off-task and replacement behavior of African American students at risk for ED through a multiple treatment reversal ABABCBC design. Additionally, this study sought to examine the extent to which general education teachers could implement FBAs with high fidelity. The two intervention packages were implemented with two 5<sup>th</sup> grade African American students at risk for ED. Results indicated a functional relationship between function-based interventions and decreases in off-task behavior for both students. Comparisons between function-based and nonfunction-based interventions indicated that function-based interventions resulted in higher decreases of off-task behavior than nonfunction-based interventions for both students. Additionally, descriptive results showed that both general education teachers were able to implement FBAs and function-based interventions with high levels of fidelity. Finally, teachers felt the function-based interventions were more successful in decreasing the off-task behavior of their students and stated they would both continue to use FBAs and function-based interventions as practical and important means of addressing and improving students' inappropriate behavior. Findings and discussion points are presented in this chapter organized by the seven research questions. Finally, limitations of the study, suggestions for future research, and implications for practice are discussed.



## Effects of Interventions on Dependent Variables

### **Research Question 1: What are the comparative effects of function-based versus nonfunction-based interventions on decreasing classroom problem behavior of African American elementary students at risk for ED?**

Findings from this study indicated a functional relationship between function-based interventions and decreases in off-task behavior for both Todd and Alan. Specifically, data on both students' off-task behavior showed immediate changes in level (i.e., decreases) when comparing data from the function-based interventions condition to baseline. Additionally, comparisons between the function-based interventions and nonfunction-based interventions indicated that, for both Todd and Alan, function-based interventions were more effective in decreasing off-task behavior. Again, both students' off-task behavior show substantial decreases in level when comparing the data from the function-based phases to those during the nonfunction-based phases. In fact, the nonfunction-based interventions for both students resulted in little change, and in some instances, increases in their off-task behaviors. Specifically, Todd's off-task behavior averaged 44.9% across all baseline phases and 39.1% across all nonfunction-based phases, resulting in only a 5.8% decrease. Alan's off-task behavior averaged 58.4% across all baseline phases and 69.6% across all nonfunction-based phases, which was an increase of 11.2%.

This study supports previous research comparing function-based interventions to nonfunction-based interventions. Specifically, six previous studies (i.e., Carr & Durand, 1985; Ellingson et al., 2000; Filter & Horner, 2009; Ingram et al., 2005; Newcomer & Lewis, 2004; Payne et al., 2007) provided evidence that function-based interventions were more effective than nonfunction-based interventions in decreasing problem

behavior in students with or at risk for disabilities. This study supports the use of behavioral interventions based on FBA results as a more effective means of decreasing problem behaviors than those behavioral interventions not based on behavioral function. Specifically, this study lends further support to the operant learning perspective theorized by Skinner (1953) by providing evidence that behavioral function is more important than topography in understanding and changing student behavior. Previous research on the effectiveness of function-based interventions for African American students at risk for ED has been limited (e.g., Kamps et al., 2006; Stahr et al., 2006). This study adds to the efficacy of function-based interventions because it specifically targeted a population (i.e., African American students at risk for ED) on which research has been sparse. Specifically, it addressed disproportionality by including descriptive data on the extent to which students needed special education services and disciplinary action prior to and at the conclusion of the study.

**Research Question 2: What are the effects of function-based interventions on increasing appropriate replacement behavior of African American elementary students at risk for ED?**

During the function-based intervention phases, self-management of on-task behavior, which included self-initiation of a short break based on the behavioral function, was the replacement behavior chosen for each student. Specifically, both Todd's and Alan's data indicated high levels of self-management accuracy when the function-based interventions were implemented, and they exhibited self-management 100% of the time. This study lends support to previous research, such as the study conducted by Lo and Cartledge (2006), on the effectiveness of function-based interventions involving self-management strategies and increases in appropriate replacement behavior for students

with or at risk for ED. Because the self-management procedure included a self-initiation of a 2-min break at set intervals, it allowed both students to achieve the behavioral function (i.e., escape) in an appropriate manner. In other words, through the function-based interventions, both students' on-task and self-management behaviors were negatively reinforced by the self-initiated breaks increasing the likelihood that they would continue those behaviors in the future.

Additionally, this study included self-management as the selected strategy for increasing on-task behavior of the targeted students. Self-management focuses on the student controlling his or her behavior. Cooper et al. (2007) describe self-management as a "personal application of behavior change tactics that produces a desired change in behavior" (p. 578). When self-management strategies, such as self-monitoring and self-reinforcement, are properly implemented, the likelihood of occurrences in the desired behavior increases. Self-management is also an advantageous choice, because the student can employ it at multiple environments to potentially promote generalization of the taught skills.

Previous research (e.g., Axelrod, Zhe, Haugin, & Klein, 2009; Graham-Day, Gardner, & Hsin, 2010) has found self-management to be an effective means of increasing on-task behavior among elementary, middle, and high school students with and at risk for disabilities. This study extends the research on self-management as a strategy for increasing on-task behavior of students at-risk for ED. Furthermore, it strengthens the use of self-monitoring as part of the FBA process just as previous research on function-based self-monitoring interventions has been able to do (e.g., Frea & Hughes, 1997; Kearn, Ringdahl, Hilt, & Sterling-Turner, 2001; Lo & Cartledge, 2006).

Such research, along with this study, indicates that self-management strategies linked to behavioral function can increase the use of appropriate replacement behavior.

**Research Question 3: To what extent does a training package that includes coaching and performance feedback improve general education teachers' abilities to conduct FBAs and implement function-based interventions with high fidelity?**

**Research Question 4: To what extent do teachers implement nonfunction-based interventions with high fidelity?**

This study supports the notion that training general education teachers on the FBA process is a practical and effective method of addressing the problem behavior of at-risk students in the general education setting. Results of this study indicated that the training package included in this study allowed general education teachers to accurately conduct FBA and implement function-based and nonfunction-based interventions with high degrees of fidelity. Specifically, the coaching and performance feedback provided to both general education teachers was a form of progress monitoring that allowed teachers to make improvements immediately after making errors. Typical 1-day inservice trainings do not include periodic follow-ups to monitor implementation of the skills trained (e.g., Kretlow et al., 2009). Therefore, teachers may not be implementing interventions from these types of professional development opportunities with high fidelity. This study supports coaching and performance feedback as part of the training package to ensure that fidelity remains high. In turn, high implementation fidelity increases the likelihood that students are positively impacted by the trained skills being implemented by teachers.

Additionally, this study extends previous research on professional development (e.g., Ervin et al., 2001; Reid & Nelson, 2002) by including general education teachers as the target of such training in order to allow them to become primary interventionists with

students exhibiting behavior problems in the general education setting. Additionally, this study addressed the findings and recommendations by Conroy et al. (2005), Kretlow et al. (2009), Van Acker et al. (2005), and Yoon et al. (2000) by conducting inservice training that lasted more than one day and including follow-up support (e.g., coaching) after training had been completed.

Because this study collected treatment fidelity data on teachers' abilities to implement nonfunction-based interventions as well as function-based interventions, this allowed experimenters to make more critical comparisons concerning student behavior outcomes. Both teachers were able to implement nonfunction-based interventions with the same high degree of fidelity as during their implementation of the function-based interventions. This allows a greater claim to be made concerning the impact the function-based interventions had on decreasing students' off-task behavior, and that the inability of the nonfunction-based interventions to decrease students' off-task behavior cannot be attributed to differences in fidelity of implementation.

The results of this study contributed to the field by collecting fidelity data on teachers' ability to implement not only the FBA, but both function-based and nonfunction-based interventions. Of the previous six research studies comparing the effects of both types of interventions on students' problem behavior, only four (i.e., Ellingson et al., 2000; Ingram et al., 2005; Newcomer & Lewis, 2004; Payne et al., 2007) involved teachers as primary interventionists. Additionally, of those four studies, only two (e.g., Ellingson et al., 2000; Ingram et al., 2005) included fidelity data on teachers' ability to implement such interventions. This study begins to answer an important question in the field by providing preliminary evidence as to the feasibility and

competence required to implement a FBA, function-based interventions, and nonfunction-based interventions by general education teachers and allows more accurate comparisons to be made about their impact on student behavior.

**Research Question 5: To what extent can teachers generalize learned skills during FBA training to new student behavior?**

One of the goals of this study was to train general education teachers on the FBA process and provide coaching and feedback to them when the function-based and nonfunction-based interventions were implemented with Student A (i.e., Todd, Alan). After implementation of the FBA and function-based and nonfunction-based interventions, each teacher was expected to conduct the FBA process again with a second student (i.e., Shaun, Jaquan) without training and coaching support to determine the extent to which teachers could generalize the newly learned FBA skills to new students. However, since results from the FAO and FAM for Shaun and Jaquan revealed low frequency of problem behaviors; intervention development and implementation were no longer required. FBA is often used to reduce problem behavior as a more individualized intervention, so an FBA would no longer be necessary when reductions in problem behavior occur for other reasons. Both teachers felt it was no longer necessary to create an intensive behavior plan for these two students. While regular medication use was one hypothesized factor proposed by the teachers for decreased problem behavior, it may also be possible that the teachers altered their behavior management strategies as a result of the skills learned from the training modules. Although the question of whether or not both teachers were able to generalize learned skills during FBA training to new students cannot fully be answered, some evidence is available by examining the fidelity data of both teachers when they completed the first three phases of the FBA (i.e., FAI, FAO,

FAM) with Shaun and Jaquan. These data reveal both teachers were able to successfully generalize skills learned during FBA training and apply a substantial portion to a second student during which they received no booster training, coaching, or performance feedback. Specifically, Mrs. Barr implemented the FAI, FAO, and FAM with 100.0% fidelity, improving her fidelity across these phases from Student A (i.e., Todd) to Student B (i.e., Shaun) by 2.1%. Ms. Jones maintained fidelity at a mean of 98.8% and a range of 93.8% to 100.0% across the FAI, FAO, and FAM phases for Jaquan, improving her fidelity by 6.5% when compared to the same phases with Alan.

The main purpose of this research question was to determine if the training provided was substantial enough that teachers could implement the FBA with limited or no support after training. Results of teacher fidelity data with Todd and Alan also add support to this question. Specifically, coaching was only provided to the teachers when an error was made at any point in the implementation process with Todd and Alan. As evidenced by the relatively few errors made by each teacher across all phases of the FBA process, it is apparent that minimal coaching by the experimenter was necessary (see data points marked with \* in Figures 7 and 8). The fidelity results from this study offer support for training general education teachers on the FBA process and refute the notion that general education teachers lack the foundational skills necessary to complete the FBA process (Scott et al., 2004). Specifically, the systematic instructional delivery, multiple embedded opportunities for practice, and coaching and performance feedback appear to be critical components of the training package and its success with the general education teachers who participated in this study.

## Discussion of Social Validity Findings

**Research Question 6: What are teachers' opinions regarding the practicality and effectiveness of conducting FBAs?**

**Research Question 7: What are teachers' opinions regarding the practicality and effectiveness of function-based versus nonfunction-based interventions on decreasing students' problem behavior and on preventing special education referrals?**

This study sought to determine the social validity of FBA training, function-based interventions, and nonfunction-based interventions based on teachers' perceptions regarding their practicality and effectiveness. Social validity results indicated this study had a positive impact on teachers' opinions regarding the practicality and effectiveness of conducting FBAs and implementing function-based interventions in a general education setting. Specifically, both teachers indicated that receiving FBA training as general education teachers was important. Additionally, both teachers felt that the function-based interventions were more effective than the nonfunction-based interventions in decreasing off-task behaviors and increasing appropriate replacement behaviors of their students. Overall, the two general education teachers felt that using the FBA process as a method for addressing student behavior in the general education classroom was effective, practical, and was a strategy they would use in the future. Four reasons are possible. One, teachers' perceived acceptance of interventions may be related to specific training they received during the study on importance and understanding of human behavior through the Behavioral approach. Second, although neither teacher had any formal ABA or FBA training, both quickly acquired the skills taught during training and required fewer opportunities to practice the skills than expected. Third, both teachers volunteered for the study, which means they were motivated and willing to participate in more



responsibilities in addition to their required school duties. Finally, the interventions developed in this study were created based on best contextual fit for their classrooms. For example, MTS was selected as the data recording method because it can be used during ongoing instruction. The high level of involvement from both teachers in the development and implementation of the interventions made it easier for teachers have more control in choosing the most feasible and non-obtrusive strategies to be used in their classrooms without significant interruption of their daily instruction.

In addition to the positive results of teachers' perceptions on the acceptability and usefulness of the FBA and intervention procedures, the results of this study also indicated that both teachers altered their perceptions on the degree to which students needed continued disciplinary and special education referral after the FBA and intervention implementation had been completed. This is critical when considering the fact that African American students are 1.92 times more likely than Caucasian students to be labeled with ED and have higher rates of suspensions and expulsions than Caucasian students for the same or lesser behaviors (Cartledge & Dukes, 2008; NRC, 2002). The FBA process in this study allowed general education teachers to examine *why* the two African American students in this study exhibited problem behaviors within the classroom context rather than rely on previously conceived notions, such as "They act like this because their parents do." Such ideas often remove the control and responsibility for behavior change from the part of the teacher and leaves problem behavior unaddressed in the school setting. The FBA results allowed teachers to concretely measure and observe how behavioral function and environmental context play a critical role in the occurrence and nonoccurrence of behavior.

### **Specific Contributions of this Study**

This study adds to the literature in multiple ways because it: (a) targeted African American elementary students at risk for ED; (b) used a single-subject, ABABCBC multiple treatment reversal design (Cooper et al., 2007) to allow for a more rigorous comparison to be made across phases; (c) compared typical classroom interventions (i.e., classwide token economy systems during baseline, nonfunction-based intervention) to those based on the function of students' behavior; (d) focused on training general education practitioners on the FBA process as primary implementers and interventionists; (e) collected treatment fidelity data on teachers' abilities to implement the FBA and both function-based and nonfunction-based interventions; and (f) included functional analysis manipulations as a part of the FBA. These contributions are further discussed in the following paragraphs.

First, this study adds to the research base on the efficacy of function-based interventions by specifically addressing the issue of disproportionality of African Americans in disciplinary action and special education under the category of ED. Teachers in this study worked with four 5<sup>th</sup> grade African American male students who had been identified as at risk for ED based on *SSIS* results and teacher observation and referrals. Prior research on the effectiveness of function-based intervention for African American students had been limited to three studies (i.e., Kamps et al., 2006; Lo & Cartledge, 2006; Stahr et al., 2006) with only one of those specifically targeting African American student at risk for ED (i.e., Lo & Cartledge, 2006). Like the study by Lo and Cartledge, the current study demonstrated that function-based interventions are effective not only in decreasing problem behaviors of African American students at risk for ED,

but also in decreasing the need for these students to be referred for disciplinary action or special education services under the category of ED. These findings have important and critical implications for the field regarding the issue of disproportionality and how FBA may be one effective method for decreasing the percentage of African American students who are misidentified into special education for ED. The findings from this study, however, are preliminary. More empirical data are required to fully make a causal connection between FBAs and decreasing disproportionate representation.

Second, this study extends the literature on comparison studies of function-based and nonfunction-based interventions by using a single-subject, ABABCBC multiple treatment reversal design (Cooper et al., 2007) with a second baseline and at least two phases for each treatment, allowing for multiple demonstrations of experimental control across phases. Previous comparison research used designs that consisted of one baseline phase (ABA, Filter & Horner, 2009; Ingram et al., 2005; Payne et al., 2007) or used reversal designs without counterbalancing across students (e.g., Ellingson et al., 2000; Payne et al., 2007). By using an ABABCBC design and counterbalancing across students, the current study provided a stronger case for the effects of function-based interventions on decreasing problem behavior among African American students at risk for ED than previous studies.

Third, the design used in this study allowed comparisons between interventions that have some research support (e.g., token economy systems; Bender & Mathes, 1995; DuPaul & Weyandt, 2006) but are not function-based and behavioral interventions derived from FBA results. In this study, a classwide token economy (i.e., the Buck System) was already in place during baseline to reward appropriate classroom behavior.

Additionally, during the nonfunction-based interventions additional research-supported interventions (e.g., verbal encouragement, pre-corrections, environmental supports) were implemented that blocked access to each student's validated behavioral function. The positive results from the function-based interventions, when compared to research-based, non-function based interventions, begin to provide an answer to this important question in the field. These findings help support the need for increased teacher investment in the use of function-based interventions over traditional, nonfunctional forms of behavior management in the general education setting, especially for those students who have the highest need for more intensive behavior support in the classroom setting.

Fourth, this study lends support to the idea of training general education practitioners about the FBA process and having them act as primary interventionists. Scott et al. (2004) recommended research in public schools should focus primarily on a teacher's ability to implement the FBA within the context of the classroom setting and that the researcher should be removed as the leader of the implementation process. This study addressed those recommendations, and results indicated that general education teachers can successfully act as primary change agents when implementing FBAs upon appropriate training and support.

Additionally, fidelity data were collected 100% of the time during this study to determine if general education teachers can implement FBAs, function-based interventions, and nonfunction-based interventions with high fidelity. Previous research that involved teachers as primary conductors of the FBA process and deliverers of function-based interventions has often failed to include fidelity data on the process. This

study extended the research base by including fidelity data on intervention implementation and on the entire FBA process.

Finally, this study included the use of functional analysis to validate the behavioral function hypothesized by both teachers as a result of the FAI and FAO findings. Functional analysis is the only method for validating a functional relationship between the targeted behavior and the variables manipulated, so it is the most precise way of determining the true function of a student's behavior (O'Neill et al., 1997). It remains a very critical component of the FBA process but is often excluded, especially in the general education setting (Payne et al., 2007). The FAMs conducted in this study required small amounts of teacher time (i.e., 16, 32 minutes per session) and used MTS data collection methods that allowed for instruction to continue in the classroom setting, which may have added to the feasibility of their implementation in the general education setting. This study added to the efficacy and practicality of including the functional analysis component in the FBA process, even when used in the general education setting and with general education teachers as the primary interventionists.

### **Limitations and Implications for Future Research**

This study has several limitations and implications for future research that are critical to consider. First, this study was conducted using single-subject research methodology. Because this type of design was used, the ability to generalize findings to other populations is limited. Therefore, it is important for future research to include systematic replications of this study with other populations across multiple geographic locations to allow for broader generalizations effects of FBAs and function-based interventions on problem behavior.

Second, due to the length of this study and the school year ending it was not possible for one of the students (i.e., Todd) to end the study using the intervention (i.e., function-based) that was most effective in decreasing his off-task behavior. Additionally, no maintenance data were available on students' ability to self-monitor their behaviors across longer intervals or with thinning reinforcement schedules (i.e., fewer breaks) due to the end of the school year. Future research should consider beginning study implementation with sufficient time to allow for a final "best fit" phase for all students and for maintenance data to be collected.

Third, the results of this study are limited only to off-task behavior because off-task behavior was identified as being of the highest frequency for both students. Therefore, how well function-based interventions that include self-management affect other externalizing or internalizing behaviors cannot be determined from this study. Future research should examine how such function-based interventions affect other problem behaviors as well.

Fourth, time constraints due to the school year ending kept the experimenter from being able to have the teachers refer a third student from each of their classrooms when both Shaun and Jaquan failed to demonstrate high level of problem behavior. Had more time been available, the teachers could have attempted the *complete* FBA process independently with another student to allow the fifth research question (i.e., To what extent can teachers generalize learned skills during FBA training to new student behavior?) to be fully answered. Future research should use the amount of time required by this study (i.e., 17 weeks) as a basis for beginning and completing future replications.

Fifth, teachers in this study were selected on a volunteer basis. After receiving a detailed overview of the study process, the first two teachers who felt they had students that met the explained criteria volunteered for the study. The assumption can be made that these two teachers were highly motivated and willing to put forth effort and time on top of their other teaching responsibilities to take part in this study. This fact may have contributed to the high fidelity data collected in this study. Future research should consider different means of recruiting teacher participation, such as recruitment of teachers through administrative recommendations.

Finally, the use of MTS as the primary data recording procedure limits the results of this study. MTS at 1-min intervals underestimates the instances of off-task behavior that could potentially be occurring within each interval. However, because a primary goal of this study was to examine the practicality of the FBA process with general education teachers as primary behavior change agents, MTS was the most appropriate data recording method when considering the best contextual fit for use in the classroom. Future research may consider comparing problem behavior data captured by MTS use by practitioners with a more precise recording method (e.g., partial interval recording) used by experimenters.

Additionally, future research may include a cost-effectiveness measure that allows more quantitative data to be collected and better comparisons to be made on the feasibility of function-based interventions versus nonfunction-based interventions.

### **Implications for Practice**

Based on the findings from this study, several implications for practice can be made. First, this study adds to the efficacy of using function-based interventions over

more traditional, nonfunctional methods of behavior management. It indicated that research-based behavioral strategies like classwide token economy systems do not necessarily address the specific needs of all students and that more intensive and individualized interventions based on FBAs lead to more sustainable student behavior change. This study shows that teachers can make a greater and more effective impact when choosing function-based interventions over other methods of addressing problem behavior.

Second, this study focused on conducting the FBA in the general education classroom. Providing professional development on FBAs to general educators is a potentially critical method for addressing disproportionality of African Americans at risk for ED and for managing problem behaviors. This study has important implications for the field of education in recognizing that the FBA process should not be seen as a special education initiative or a reactive approach to addressing inappropriate behaviors of students already identified in special education. Instead, FBA training and implementation can be used as a proactive approach to addressing problem behavior in the general education setting and preventing unnecessary special education and disciplinary referrals.

Finally, the training package used in this study lasted approximately 12 hours and included in vivo coaching and performance feedback. Additionally, the training modules included components recommended by experts in the field as the most critical for yielding effectiveness and fidelity. Specifically, this study included (a) foundational skills around ABA, PBS, and FBA; (b) multiple embedded practice opportunities; (c) training taught in stages, with embedded review; and (d) coaching and performance feedback.



Additionally, the training modules contained embedded strategies (i.e., multiple exemplar training, train in natural settings, coaching) to promote generalization to new student behavior. This study lends support to the previous recommendations by researchers (e.g., Conroy et al., 2005; Kretlow et al., 2009; Van Acker et al., 2005; Yoon et al., 2000) on how best to provide inservice training to teachers. With additional replications of this study, the training package included could be used as an effective model for delivering training to teachers on how to implement FBAs practically and effectively. Additionally, because of the experimenter's previous experience as a special education teacher who received training in FBA, it may be feasible to consider that special education teachers act as coaches to general education teachers when implementing training packages such as the one used in this study.

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## APPENDIX A: EXAMPLE SELF-MANAGEMENT CHART

2 min On task?	4 min On task?	6 min On task?	8 min On task?	10 min On task?	Total of "Y" in Each Row	2 min BREAK TIME!!!
Y N	Y N	Y N	Y N	Y N	/5	
Y N	Y N	Y N	Y N	Y N	/5	
Y N	Y N	Y N	Y N	Y N	/5	
Y N	Y N	Y N	Y N	Y N	/5	

Are my eyes on my assignment? 	Do I have all the correct materials? 	Am I being quiet? 	Are my hands and feet to myself? 	If I am finished with my work, am I reading AR? 
--	---	--	--	--

## APPENDIX B: TEACHER SATISFACTION QUESTIONNAIRE

Teacher's name: \_\_\_\_\_

Date: \_\_\_\_\_

**Directions:**

*You participated in a study in which you received training to implement functional behavioral assessments (FBA) and interventions with two of your students with identified behavior problems. To determine if the study was appropriate and effective, we would like to know your opinion on the following items. We greatly appreciate your input.*

Question	Response			
1. As part of the training, you received instruction on several FBA components. How would you rate the level of importance on each of the following topics in order for you to implement the FBA process with your students?	Not at all	Little import.	Some Import.	Great import.
1. Applied Behavioral Analysis (ABA) Basics				
2. Positive Behavior Support (PBS) and Functional Behavioral Assessment (FBA) Overview	1	2	3	4
3. The Functional Behavioral Assessment Interview (FAI)	1	2	3	4
4. Validating the FAI Through Direct Observation	1	2	3	4
5. Functional Analysis Hypotheses and Manipulations	1	2	3	4
6. Building Behavior Support Plans	1	2	3	4
7. Implementing Behavior Support Plans	1	2	3	4
	Not at all	Not import.	Import.	Very import.
2. How important do you believe it is to create interventions that are effective in creating behavior change?	1	2	3	4
3. How important do you believe it is to create an intervention based on the function of a student's behavior?	1	2	3	4
4. How important do you believe it is to create an intervention based on the physical form of a student's behavior?	1	2	3	4
5. You implemented two different behavioral interventions during this study, one of which was based on FBA results (i.e., function-based). How appropriate do you think this intervention was for you to implement as the general education teacher?	Very inappro. 1	Not appro. 2	Appropriate 3	Very appro. 4
6. How successful do you feel the above function-based intervention was in decreasing the problem behavior of your two students (Student A and Student B)?	Not at all	A little	Much	Very Much
Student A: _____ Problem Beh: _____	1	2	3	4
Student B: _____ Problem Beh: _____	1	2	3	4

Question	Response			
7. How successful do you feel the above function-based intervention was in increasing the replacement behavior of your two students (Student A and Student B)?	Not at all	A little	Much	Very Much
Student A: _____ Replacement Beh: _____	1	2	3	4
Student B: _____ Replacement Beh: _____	1	2	3	4
8. You implemented two different behavioral interventions during this study, one of which was <i>not</i> based on FBA results (i.e., nonfunction-based). How appropriate do you think this intervention was for you to implement as the general education teacher?	Very inappro.	Not appro.	Appropriate	Very appro.
	1	2	3	4
9. How successful do you feel the above nonfunction-based intervention was in decreasing the problem behavior of your two students (Student A and Student B)?	Not at all	A little	Much	Very Much
Student A: _____ Problem Beh: _____	1	2	3	4
Student B: _____ Problem Beh: _____	1	2	3	4
10. How successful do you feel the above nonfunction-based intervention was in increasing the replacement behavior of your two students (Student A and Student B)?	Not at all	A little	Much	Very Much
Student A: _____ Replacement Beh: _____	1	2	3	4
Student B: _____ Replacement Beh: _____	1	2	3	4
11. Overall, how practical would you perceive the FBA process (i.e., finding variables and functions related to the problem behavior) to be regarding its implementation in general education settings?	Not at all	A little	Much	Very Much
	1	2	3	4
12. What is the likelihood that you may continue to implement one or both sets of interventions with your two students?	Not at all	A little	Much	Very Much
Function-based intervention:	1	2	3	4
Nonfunction-based intervention:	1	2	3	4
Why or why not?				
13. What is the likelihood that you may use what you learned in the trainings provided on FBA with other students in your class in order to address problem behavior?	Not at all	A little	Much	Very Much
	1	2	3	4
Why or why not?				



## APPENDIX C: SCHEDULE OF IMPLEMENTATION

<b>Session</b>	<b>Teacher 1</b>	<b>Experimental Condition</b>	<b>Teacher 2</b>	<b>Experimental Condition</b>
<i>Part I: Training Modules and FBA Implementation (Student A)</i>				
1	Training Module 1	<i>Pre-baseline</i>	Training Module 1	<i>Pre-baseline</i>
2	FAI with Student A +coaching/performance feedback	<i>Pre-baseline</i>	FAI with Student A +coaching/performance feedback	<i>Pre-baseline</i>
3	Training Module 2	<i>Pre-baseline</i>	Training Module 2	<i>Pre-baseline</i>
4-8	FAO with Student A plus coaching/performance feedback	<i>Pre-baseline</i>	FAO with Student A plus coaching/performance feedback	<i>Pre-baseline</i>
9	Training Module 3	<i>Pre-baseline</i>	Training Module 3	<i>Pre-baseline</i>
10-14	FAM with Student A plus coaching/performance feedback	<i>Pre-baseline</i>	FAM with Student A plus coaching/performance feedback	<i>Pre-baseline</i>
15	Training Module 4	<i>Pre-baseline</i>	Training Module 4	<i>Pre-baseline</i>
<i>Part II: Comparison of function-based and nonfunction-based interventions (Student A)</i>				
16-20	Baseline data	(A)	Baseline data	(A)
21-25	NFB data	(C)	FB data	(B)
26-30	Return to Baseline	(A)	Return to Baseline	(A)
31-35	FB data	(B)	NFB data	(C)
36-40	NFB data	(C)	FB data	(B)
41-45	FB data	(B)	NFB data	(C)
46-50	NFB data	(C)	FB data	(B)
<i>FBA Implementation (Student B)</i>				
36	FAI with Student B	<i>Pre-baseline</i>	FAI with Student B	<i>Pre-baseline</i>
37-39	FAO with Student B	<i>Pre-baseline</i>	FAO with Student B	<i>Pre-baseline</i>
40-42	FAM with Student B	<i>Pre-baseline</i>	FAM with Student B	<i>Pre-baseline</i>

## APPENDIX D: TRAINING MODULE EXPECTED OUTCOMES

Training Components	Content Objectives/Outcomes
<b>Training Module 1</b>	
Applied Behavioral Analysis (ABA) Basics	<ul style="list-style-type: none"> <li>• To describe the meaning and characteristics of ABA</li> <li>• To describe the four-term contingency and its respective term</li> <li>• To describe/articulate strategies related to manipulating antecedents</li> <li>• To describe/articulate strategies related to manipulating consequences</li> <li>• To describe procedures and terms concerning data collection and measurement</li> </ul>
Positive Behavior Support (PBS) and Functional Behavioral Assessment (FBA) Overview	<ul style="list-style-type: none"> <li>• To describe negative effects of challenging behavior</li> <li>• To describe the meaning of positive behavior support</li> <li>• To explain the purpose, assumptions, methods, and outcomes of FBA</li> </ul>
Functional Assessment Interview (FAI)	<ul style="list-style-type: none"> <li>• To become familiar with the Functional Assessment Interview (FAI) form</li> <li>• To demonstrate competence in conducting functional assessment interviews</li> </ul>
<b>Training Module 2</b>	
Validating the FAI Through Direct Observation	<ul style="list-style-type: none"> <li>• To become familiar with the Functional Assessment Observation (FAO) Form</li> <li>• To demonstrate competence in conducting and interpreting FAO</li> </ul>
<b>Training Module 3</b>	
Functional Analysis Manipulations	<ul style="list-style-type: none"> <li>• To develop accurate hypothesis statements based on FAI and FAO results</li> <li>• To identify the purposes of functional analysis manipulations</li> <li>• To identify ways to verify summary statements</li> <li>• To determine factors for manipulations based on individual cases</li> </ul>
<b>Training Module 4</b>	
Building and Implementing Behavior Support Plans	<ul style="list-style-type: none"> <li>• To describe the “Competing Behavior Model” and its components</li> <li>• To explain ways to make a problem behavior irrelevant, inefficient, and ineffective</li> <li>• To develop a complete behavior support plan using the “Competing Behavior Model”</li> </ul>

## APPENDIX E: CORRESPONDENCE WORKSHEET

## 1. From the FAI/FAO information:

- What is/are the most prominent behavior(s) of concern?

- Does a clear antecedent (predictor) emerge?

- What is the perceived function of the behavior?

- When is this behavior MOST likely to occur?

## 2. Revising/Validating your Hypotheses

- a. Based on the information you provided above, re-examine your summary statements from section K of the FAI form. Based on patterns you see on your FAO, do you need to revise any of the summary statements you made on the

- b. Summarize your revised summary statements by creating one hypothesis you would like to focus on during the functional analysis phase using the following format. [Remember to group behaviors together that appear to have the same antecedents (predictors) and/or the same consequences (functions).]



**[Phrase describing immediate situation/antecedent], [student's name] [phrase describing the behavior(s)] to accomplish [function]. A follow-up sentence can state any setting events that may have an added impact on the student's likelihood to exhibit the behavior.**

Based on the targeted behavior of concern, please do the following:

- Name the Behavior (e.g., off-task; aggression):

- Operationally Define (What EXACTLY does the behavior look like physically?):

## APPENDIX F: FUNCTIONAL ASSESSMENT INTERVIEW FORM

See O'Neill, R. E., Horner, R. H., Albin, R. W., Sprague, J. R., Storey, K., & Newton, J.

S. (1997). *Functional assessment and program development for problem*

*behavior: A practical handbook* (2<sup>nd</sup> ed.). Pacific Grove, CA: Brooks/Cole.

## APPENDIX G: FUNCTIONAL ASSESSMENT OBSERVATION FORM

See O'Neill, R. E., Horner, R. H., Albin, R. W., Sprague, J. R., Storey, K., & Newton, J.

S. (1997). *Functional assessment and program development for problem*

*behavior: A practical handbook* (2<sup>nd</sup> ed.). Pacific Grove, CA: Brooks/Cole.

## APPENDIX H: COMPETING BEHAVIOR MODEL

See O'Neill, R. E., Horner, R. H., Albin, R. W., Sprague, J. R., Storey, K., & Newton, J.

S. (1997). *Functional assessment and program development for problem*

*behavior: A practical handbook* (2<sup>nd</sup> ed.). Pacific Grove, CA: Brooks/Cole.

APPENDIX I: EXAMPLE OF FUNCTION-BASED AND NONFUNCTION-BASED INTERVENTION

<b>Student:</b>	<b>Setting Event:</b>	<b>Antecedent:</b>	<b>Behavior:</b>	<b>Consequence:</b>
Nate	None noted	Presented with difficult task	Off-task (e.g., out of seat, pencil down)	Teacher reprimands; sends out in hall
				<b>Hypothesized function:</b> escape from difficult task
Function-based Intervention	N/A	Task broken down into smaller increments	Teach replacement skills: (a) Ask for assistance, (b) move on to next part of task if cannot receive teacher assistance immediately	2 min break after completion of mini-task
Nonfunction-based Intervention	N/A	Teacher encouragement prior to presenting with difficult task (e.g., "I know this is hard, but you can do it.")	Reteach on-task behavior expectation: bottom in seat, pencil in hand, work on assignment	No break upon completion of difficult task; teacher praise and then given next assignment

## APPENDIX J: EXPERT RATING SCALE

Expert Rating Scale for "Todd"

<b>Student Name:</b> "Todd"	<b>Perceived Function:</b> Escape from task (difficulty not a factor)	<b>Setting Event:</b> Transitions during independent reading stations	<b>Antecedent:</b> Reading stations (independent/small group)	<b>Behavior:</b> Off-task (i.e. eyes not on teacher or instructional materials for 3 sec or more; playing with objects within reach)	<b>Typical Consequence:</b> Redirection; ignoring
<b>Intervention 1:</b>	Todd is given a laminated schedule to keep with him at all times during reading stations		Todd is taught to self-monitor and self-reinforce his behavior using a laminated self-monitoring chart and Motivaider device. He records his behavior in 2 minute increments and at the end of 5 intervals (10 min) if he has remained on-task, he self-initiates a 2 minute break.	Teacher uses extinction of off-task behavior by quickly pointing to Todd's self-monitoring chart as a redirection for on-task behavior.  Replacement behavior is reinforced by student through self-initiation of 2 minute break	
<b>Intervention 2:</b>	Teacher provides encouragement prior to start of reading stations (e.g., "I know you will do a great job during stations today.")		Teacher re-teaches on-task behavior expectation to entire class: bottom in seat, pencil in hand, work on assignment	No break upon completion of task or changing of reading station; student given next assignment/ task/move to next station	

<b>Degree to which intervention makes the problem behavior:</b>		<b>Not at all</b>					<b>Strongly</b>
		<b>1</b>					<b>5</b>
<b>Intervention 1:</b>	<i>Irrelevant</i> (identification of situations that set the occasion for problem behaviors and organize the environment to reduce the likelihood that these conditions are encountered):	1	2	3	4	5	
	<i>Inefficient</i> (efficiency of behavior means the combined effects of physical effort required to perform the behavior, number of times the person must perform the behavior before being reinforced, and the time delay between the first problem behavior and reinforcement):	1	2	3	4	5	
	<i>Ineffective</i> (problem behavior is no longer reinforced):	1	2	3	4	5	
<b>Intervention 2:</b>	<i>Irrelevant</i> (identification of situations that set the occasion for problem behaviors and organize the environment to reduce the likelihood that these conditions are encountered):	1	2	3	4	5	
	<i>Inefficient</i> (efficiency of behavior means the combined effects of physical effort required to perform the behavior, number of times the person must perform the behavior before being reinforced, and the time delay between the first problem behavior and reinforcement):	1	2	3	4	5	
	<i>Ineffective</i> (problem behavior is no longer reinforced):	1	2	3	4	5	

## APPENDIX K: FAI PROCEDURAL FIDELITY CHECKLIST

Date: \_\_\_\_\_ Teacher: \_\_\_\_\_ Session Length \_\_\_\_\_  
 Checklist completed by \_\_\_\_\_ Session # \_\_\_\_\_

<u>Functional Assessment Interview</u>		
1. Completes person of concern, age, sex	YES	NO
2. Completes Date of Interview and Interviewer	YES	NO
3. Completes Respondents Names	YES	NO
4. Completes description of the behavior(s) of concern, including the behavior, topography, frequency, duration, and intensity of each (Questions A1 and A2)	YES	NO
5. Defines ecological events (setting events) that predict or set up the problem behaviors. (Questions B1-B7)	YES	NO
6. Defines specific immediate antecedent events that predict when the behaviors are <i>LIKELY</i> to occur. (Questions C1-C7)	YES	NO
7. Defines specific immediate antecedent events that predict when the behaviors are <i>NOT LIKELY</i> to occur. (Questions C1-C7)	YES	NO
8. Identifies the consequences or outcomes of the problem behaviors that may be maintaining them (i.e., the functions they serve for the person in particular situations). (Questions Da-Dj)	YES	NO
9. Rates the overall efficiency of the problem behaviors from low to high. (Section E)	YES	NO
10. Identifies the functional alternative behaviors the person already knows how to exhibit. (Question F1)	YES	NO
11. Identifies the primary expressive communication strategies the individual uses with others. (Questions G1-G3)	YES	NO
12. Identifies things that should be done and should be avoided in work with and supporting the person. (Questions H1-H2)	YES	NO
13. Identifies things that are reinforcers for the person. (Questions I1-I5)	YES	NO
14. Identifies what is already known about the history of the undesirable behaviors.	YES	NO
15. Identifies what is already known about the programs that have been attempted to decrease or eliminate the problem behaviors and the effects of those programs on the behaviors. (Questions J1-J10)	YES	NO
16. Develops one or more appropriate summary statements for each major predictor and/or consequence. (Section K)	YES	NO

Number of YES circled or N/A Marked: \_\_\_\_\_ ÷ 16 = \_\_\_\_\_ × 100 = \_\_\_\_\_%

Notes \_\_\_\_\_

## APPENDIX L: PROCEDURAL FIDELITY CHECKLIST FOR FAO

Date: \_\_\_\_\_ Teacher: \_\_\_\_\_ Session Length \_\_\_\_\_

Checklist completed by \_\_\_\_\_ Session # \_\_\_\_\_

<u>Functional Assessment Observation</u>		
1. Behavior(s) chosen occur at a low to moderate frequency (fewer than 20 times per day).	YES	NO
2. Behavior(s) chosen are consistent with the problem behaviors identified through FAI	YES	NO
3. Data are recorded during specific, short periods of time (e.g., 20 min blocks)	YES	NO
4. Data are collected by classroom teacher or support staff who are directly in contact with targeted student.	YES	NO
5. Observation data are collected a minimum of 15 to 20 occurrences of the targeted behavior	YES	NO
6. Observation data are collected for a minimum of 2 to 5 days.	YES	NO
7. All sections of the FAO form are completed accurately and appropriately. <b>If problem behaviors occurred during recording interval:</b>		
a. Recorder put first unused number (from bottom list, Section H) in appropriate box or boxes in Behavior section.	YES	NO
b. Recorder used the same number to mark appropriate boxes in the Predictors, Perceived Functions, and Actual Consequences sections.	YES	NO
c. Recorder crossed out just-used number in the list at the bottom of the form.	YES	NO
d. Recorder wrote any desired comments in the Comments column.	YES	NO
e. At the end of the time period the recorder put his or her initials in the Comments box.	YES	NO
<b>If problem behaviors did <i>not</i> occur during a recording interval:</b>		
a. Recorder put his or her initials in the Comments box for that interval and wrote any desired comments.	YES	NO
8. Observational recording was implemented correctly by teacher during observed session by experimenter.	YES	NO

---

 Number of YES circled or N/A Marked: \_\_\_\_\_ ÷ 13 = \_\_\_\_\_ × 100 = \_\_\_\_\_%

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 Notes





<b>Intervals: 1-8 9-16 (circle one)</b>		YES	YES	YES	YES	YES	YES	YES	YES
8.	For "ESCAPE" condition, teacher gives student break card to indicate that he is allowed a 40-sec break (i.e., put head down) before he returns to his independent seatwork.	YES	YES	YES	YES	YES	YES	YES	YES
	<b>Intervals: 1-8 9-16 (circle one)</b>	NO	NO	NO	NO	NO	NO	NO	NO
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9.	For "ESCAPE" condition, teacher prompts/signals student that 40-sec break is up by removing break card from desk.	YES	YES	YES	YES	YES	YES	YES	YES
		NO	NO	NO	NO	NO	NO	NO	NO
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10.	Teacher summarizes data at bottom of data collection sheet for specified session.	YES	NO						
11.	Teacher accurately graphs "ESCAPE" data point for specified session.	YES	NO						
12.	Teacher accurately graphs "NO ESCAPE" data point for specified session.	YES	NO						

Number of YES circled or N/A Marked: \_\_\_\_\_ ÷ 47 \_\_\_\_\_ × 100 = \_\_\_\_\_ %

Notes

APPENDIX N: PROCEDURAL FIDELITY CHECKLIST FOR FUNCTION-BASED PLAN  
DEVELOPMENT

Date: \_\_\_\_\_ Teacher: \_\_\_\_\_ Session Length \_\_\_\_\_

Checklist completed by \_\_\_\_\_ Session # \_\_\_\_\_

<u>Function-based Plan Development</u>		
1. Correctly recorded setting events (if applicable) and predictors of target behavior on "Building a Support Plan" form.	YES	NO
2. Correctly recorded problem behavior on "Building a Support Plan" form.	YES	NO
3. Correctly recorded maintaining consequence on "Building a Support Plan" form.	YES	NO
4. Correctly recorded desired behavior on "Building a Support Plan" form.	YES	NO
5. Correctly recorded typical consequence on "Building a Support Plan" form.	YES	NO
6. Correctly recorded replacement behavior on "Building a Support Plan" form.	YES	NO
7. Setting event/antecedent strategy(ies) chosen to make the problem behavior irrelevant was appropriate.	YES	NO
8. Replacement behavior chosen to make the problem behavior inefficient was appropriate	YES	NO
9. Consequence strategy(ies) chosen to make the problem behavior ineffective was appropriate.	YES	NO

---

Number of YES circled or N/A Marked: \_\_\_\_\_ ÷ 9 = \_\_\_\_\_ × 100 = \_\_\_\_\_ %

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Notes

## APPENDIX O: BASELINE PROCEDURAL FIDELITY CHECKLIST

Date: \_\_\_\_\_ Teacher: \_\_\_\_\_ Session Length \_\_\_\_\_

Checklist completed by \_\_\_\_\_ Session # \_\_\_\_\_

<u>Baseline Phase</u>		
1. Guided reading instruction (Jones) or Reading Stations (Bart) is taking place.	YES	NO
2. Student is not given schedule (Bart) or student's desk is not moved within closer proximity to teacher (Jones) [antecedent strategy]	YES	NO
3. No self-management is taking place during this time.	YES	NO
4. No planned encouragement is given prior to the beginning of instruction.	YES	NO
5. MotivAider is not being used during this time.	YES	NO
6. On-task behavior is not being reinforced with a break after task completion.	YES	NO
7. Student is given next assignment/task after completion of the one prior.	YES	NO
8. Occurrences of off-task behavior are either being redirected or ignored [typical consequence].	YES	NO

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 Number of YES circled or N/A Marked: \_\_\_\_\_ ÷ 8 = \_\_\_\_\_ × 100 = \_\_\_\_\_ %

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 Notes

APPENDIX P: FUNCTION-BASED INTERVENTION PROCEDURAL FIDELITY  
CHECKLIST

Date: \_\_\_\_\_ Teacher: \_\_\_\_\_ Session Length \_\_\_\_\_

Checklist completed by \_\_\_\_\_ Session # \_\_\_\_\_

<u>Function-based Intervention</u>		
9. Guided reading instruction (Jones) or Reading Stations (Bart) is taking place.	YES	NO
10. Student is given schedule (Bart) and student's desk is moved within closer proximity to teacher (Jones) [antecedent strategy]	YES	NO
11. Student is taught the use of the self-management strategy (prior to 1 <sup>st</sup> session) and is given self-management materials and a reminder of expectation (each subsequent session).	YES	NO
12. No planned encouragement is given prior to the beginning of instruction.	YES	NO
13. MotivAider is in use by student (and teacher during self-management checks) during this time.	YES	NO
14. Teacher monitors student self-management behavior by using same behavior chart (100% during 1 <sup>st</sup> FB phase; 1 time during each subsequent FB phase) or by periodically checking student's chart during target session .	YES	NO
15. Teacher uses extinction for occurrences of off-task behavior by quickly pointing to self-management sheet chart as redirection [consequence strategy].	YES	NO
16. Reinforcement of self-management behavior is self-initiated through a 2-min break by student (not by teacher) during this time.	YES	NO

---

Number of YES circled or N/A Marked: \_\_\_\_\_ ÷ 8 = \_\_\_\_\_ × 100 = \_\_\_\_\_ %

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Notes

APPENDIX Q: NONFUNCTION-BASED INTERVENTION PROCEDURAL FIDELITY  
CHECKLIST

Date: \_\_\_\_\_ Teacher: \_\_\_\_\_ Session Length \_\_\_\_\_

Checklist completed by \_\_\_\_\_ Session # \_\_\_\_\_

<u>Nonfunction-Based Intervention</u>		
17. Guided reading instruction (Jones) or Reading Stations (Bart) is taking place.	YES	NO
18. Student is not given schedule (Bart) and student's desk is not moved within closer proximity to teacher (Jones [antecedent strategy])	YES	NO
19. No self-management is taking place during this time.	YES	NO
20. Planned encouragement is given prior to the beginning of instruction.	YES	NO
21. MotivAider is not in use by student or teacher during this time.	YES	NO
22. Teacher reteaches/reminds of on-task behavior expectation to entire class.	YES	NO
23. On-task behavior is not being reinforced with a break after task completion.	YES	NO
24. Student is given next assignment/task after completion of the one prior.	YES	NO

---

Number of YES circled or N/A Marked: \_\_\_\_\_ ÷ 8 = \_\_\_\_\_ × 100 = \_\_\_\_\_%

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Notes

APPENDIX R: TODD'S COMPLETED FAI FORM

FUNCTIONAL ASSESSMENT INTERVIEW (FAI)

Person of concern [redacted] Todd Age [redacted] Sex (M) F  
 Date of interview 2/13/2010 Interviewer [redacted]  
 Respondents \_\_\_\_\_

A. DESCRIBE THE BEHAVIORS.

1. For each of the behaviors of concern, define the topography (how it is performed), frequency (how often it occurs per day, week, or month), duration (how long it lasts when it occurs), and intensity (how damaging or destructive the behaviors are when they occur).

Behavior	Topography	Frequency	Duration	Intensity
a. Off task	zones out/ dazed	1-2 times/day	1-3 min.	easily noticeable
b. Temper tantrum	huffing/ slapping fists into objects	1-2/month if angered	10-20 min.	easily noticeable
c. Punching/ Bouncing objects	punches desk/ table	1-2/month if angered	1-3 min.	easily audible
d. Arguing	argues w/ adult	1/week	2-5 min.	easily audible
e.				
f.				
g.				
h.				
i.				
j.				

2. Which of the behaviors described above are likely to occur together in some way? Do they occur about the same time? In some kind of predictable sequence or "chain"? In response to the same type of situation?

Punching objects, huffing, slapping fists occurs together

**B. DEFINE ECOLOGICAL EVENTS (SETTING EVENTS) THAT PREDICT OR SET UP THE PROBLEM BEHAVIORS.**

1. What *medications* is the person taking (if any), and how do you believe these may affect his or her behavior?

none known

2. What *medical or physical conditions (if any)* does the person experience that may affect his or her behavior (e.g., asthma, allergies, rashes, sinus infections, seizures, problems related to menstruation)?

He has asthma, which may intensify if angered  
(I have not noticed any asthmatic symptoms  
at school - <sup>in months</sup> asthma diagnosis by doctor to me  
from mother)

3. Describe the *sleep patterns* of the individual and the extent to which these patterns may affect his or her behavior.

generally sleeps well; not usually sleepy in  
class

4. Describe the *eating routines and diet* of the person and the extent to which these may affect his or her behavior.

no consistent problems; does bring snacks  
(pork rinds/sweets) to eat with lunch.

5a. Briefly list below the person's typical daily schedule of activities. (Check the boxes by those activities the person enjoys and those activities most associated with problems.)

<i>Enjoys</i>	<i>Problems</i>		<i>Enjoys</i>	<i>Problems</i>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	6:00	<input type="checkbox"/>	<input type="checkbox"/>	2:00
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7:00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3:00
<input type="checkbox"/>	<input checked="" type="checkbox"/>	8:00	<input type="checkbox"/>	<input type="checkbox"/>	4:00
<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:00	<input type="checkbox"/>	<input type="checkbox"/>	5:00
<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:00	<input type="checkbox"/>	<input type="checkbox"/>	6:00
<input checked="" type="checkbox"/>	<input type="checkbox"/>	11:00	<input type="checkbox"/>	<input type="checkbox"/>	7:00
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12:00	<input type="checkbox"/>	<input type="checkbox"/>	8:00
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1:00	<input type="checkbox"/>	<input type="checkbox"/>	9:00

Activities: Up/prepare for bus, bus/breakfast, self-selected reading, Reading, Guided Reading, Lunch, Math, Science, Recess, Bus to home



- 5b. To what extent are the activities on the daily schedule *predictable* for the person, with regard to what will be happening, when it will occur, with whom, and for how long?  
class schedule on board/verbal  
reminders
- 
- 5c. To what extent does the person have the opportunity during the day to *make choices* about his or her activities and reinforcing events? (e.g., food, clothing, social companions, leisure activities)  
can choose lunch meal, and recess activity
- 
6. How many other persons are typically around the individual at home, school, or work (including staff, classmates, and housemates)? Does the person typically seem bothered in situations that are more *crowded and noisy*?  
classroom - 16 other students; seems distracted  
by others
- 
7. What is the pattern of *staffing support* that the person receives in home, school, work, and other settings (e.g., 1:1, 2:1)? Do you believe that the *number* of staff, the *training* of staff, or their *social interactions with the person* affect the problem behaviors?  
child/teacher ratio - 17:1; assistant available  
at short spans of time daily.
- 
- C. DEFINE SPECIFIC IMMEDIATE ANTECEDENT EVENTS THAT PREDICT WHEN THE BEHAVIORS ARE *LIKELY* AND *NOT LIKELY* TO OCCUR.
1. *Times of Day: When* are the behaviors most and least likely to happen?
- Most likely: morning, before lunch
- 
- Least likely: afternoon after science
-

2. *Settings: Where are the behaviors most and least likely to happen?*

Most likely: classroom / inside school

Least likely: outside

3. *People: With whom are the behaviors most and least likely to happen?*

Most likely: myself - teacher / other teachers / tutors / staff

Least likely: certain select students

4. *Activity: What activities are most and least likely to produce the behaviors?*

Most likely: reading (self-selected), partner work (with more independence / less teacher direction)

Least likely: recess

5. *Are there particular or idiosyncratic situations or events not listed above that sometimes seem to "set off" the behaviors, such as particular demands, noises, lights, clothing?*

gets angered if accused of things; tends to become distracted during reading.

6. *What one thing could you do that would most likely make the undesirable behaviors occur?*

accuse Tommie of something he ~~isn't~~ claims he didn't do.

7. *Briefly describe how the person's behavior would be affected if...*

a. *You asked him or her to perform a difficult task.*

more likely to become distracted

b. *You interrupted a desired activity, such as eating ice cream or watching TV.*

more somewhat likely to anger him if I didn't allow him to complete desired activities

c. *You unexpectedly changed his or her typical routine or schedule of activities.*

not usually a problem.

d. She or he wanted something but wasn't able to get it (e.g., a food item up on a shelf).

angered/gets mad/argues

e. You didn't pay attention to the person or left her or him alone for a while (e.g., 15 minutes).

more likely to not follow rules

**D. IDENTIFY THE CONSEQUENCES OR OUTCOMES OF THE PROBLEM BEHAVIORS THAT MAY BE MAINTAINING THEM (I.E., THE FUNCTIONS THEY SERVE FOR THE PERSON IN PARTICULAR SITUATIONS).**

1. Think of each of the behaviors listed in Section A, and try to identify the *specific* consequences or outcomes the person gets when the behaviors occur in different situations.

Behavior	Particular situations	What exactly does he or she get?	What exactly does she or he avoid?
a. <u>Off task</u>	<u>classwork</u>	<u>escape</u>	<u>doing task</u>
b. <u>Temper tantrum</u>	<u>across many situations</u>	<u>escape</u>	<u>staying/discussing the situation</u>
c. <u>Punching/ Rounding Objects</u>	<u>accusation/ not getting what he wants</u>	<u>attention</u>	<u>staying/discussing the situation</u>
d. <u>Arguing</u>	<u>wants something</u>	<u>attention</u>	<u>avoids obeying</u>
e.			
f.			
g.			
h.			
i.			
j.			

**E. CONSIDER THE OVERALL EFFICIENCY OF THE PROBLEM BEHAVIORS. EFFICIENCY IS THE COMBINED RESULT OF (A) HOW MUCH PHYSICAL EFFORT IS REQUIRED, (B) HOW OFTEN THE BEHAVIOR IS PERFORMED BEFORE IT IS REWARDED, AND (C) HOW LONG THE PERSON MUST WAIT TO GET THE REWARD.**

	Low Efficiency				High Efficiency	
<u>Off task</u>	1	2	3	4	5	5
<u>Temper tantrum</u>	1	2	3	4	5	5
<u>Punching/ Rounding</u>	1	2	3	4	5	5
<u>Arguing</u>	1	2	3	4	5	5

F. WHAT FUNCTIONAL ALTERNATIVE BEHAVIORS DOES THE PERSON ALREADY KNOW HOW TO DO?

1. What socially appropriate behaviors or skills can the person already perform that may generate the same outcomes or reinforcers produced by the problem behaviors?

can raise hand; can ask questions

---



---

G. WHAT ARE THE PRIMARY WAYS THE PERSON COMMUNICATES WITH OTHER PEOPLE?

1. What are the general expressive communication strategies used by or available to the person? These might include vocal speech, signs/gestures, communication boards/books, or electronic devices. How consistently are the strategies used?

vocal speech, gestures - uses consistently

---



---

2. On the following chart, indicate the behaviors the person uses to achieve the communicative outcomes listed:

Communicative Functions	Complex speech (sentences)	Multiple-word phrases	One-word utterances	Echolalia	Other vocalizing	Complex signing	Single signs	Pointing	Leading	Shakes head	Grabs/reaches	Gives objects	Increased movement	Moves close to you	Moves away or leaves	Fixed gaze	Facial expression	Aggression	Self-injury	Other
Request attention	X	X	X				X													
Request help	X	X	X				X													
Request preferred food/objects/activities	X	X	X					X			X									
Request break	X	X	X				X													
Show you something or some place		X						X	X					X						
Indicate physical pain (headache, illness)	X	X															X			
Indicate confusion or unhappiness	X	X	X		X					X								X		
Protest or reject a situation or activity	X	X	X		X				X									X		

## 3. With regard to the person's receptive communication, or ability to understand other persons . . .

- a. Does the person follow spoken requests or instructions? If so, approximately how many? (List if only a few.)

if steps are repeated (he questions my requests frequently)

- b. Does the person respond to signed or gestural requests or instructions? If so, approximately how many? (List if only a few.)

can follow gestures/prompts

- c. Is the person able to imitate if you provide physical models for various tasks or activities? (List if only a few.)

imitates physical modeling of things

- d. How does the person typically indicate *yes* or *no* when asked if she or he wants something, wants to go somewhere, and so on?

will say yes or no; may shake head

## H. WHAT ARE THINGS YOU SHOULD DO AND THINGS YOU SHOULD AVOID IN WORKING WITH AND SUPPORTING THIS PERSON?

1. What things can you do to improve the likelihood that a teaching session or other activity will go well with this person?

slower pace; lots of praise; jokes; repeated instructions; positive tone

2. What things should you avoid that might interfere with or disrupt a teaching session or activity with this person?

faster pace; tone of voice that is reprimanding

## I. WHAT ARE THINGS THE PERSON LIKES AND ARE REINFORCING FOR HIM OR HER?

1. Food items: sweets/candy/snacks

2. Toys and objects: pencils, bookmarks, small toys

3. Activities at home: playing in neighborhood

4. Activities/outings in the community: unknown

5. Other: na

**J. WHAT DO YOU KNOW ABOUT THE HISTORY OF THE UNDESIRABLE BEHAVIORS, THE PROGRAMS THAT HAVE BEEN ATTEMPTED TO DECREASE OR ELIMINATE THEM, AND THE EFFECTS OF THOSE PROGRAMS?**

Behavior	How long has this been a problem?	Programs	Effects
1. Off task	1 year	redirecting	some decrease
2. Temper tantrums	unknown (1 yr)	ignoring/time outs	some decrease
3. Punching/pounding objects	unknown (1 yr)	ignoring/time out	some decrease
4. Arguing	unknown (1 yr)	redirecting/ignoring	not much
5.			
6.			
7.			
8.			
9.			
10.			

K. DEVELOP SUMMARY STATEMENTS FOR EACH MAJOR PREDICTOR AND/OR CONSEQUENCE.

Distant Setting Event	Immediate Antecedent (Predictor)	Problem Behavior	Maintaining Consequence
more likely if problems occurred on the bus	When T [redacted] is asked to read independently	he will zone out and get off task	in order to avoid the task
<del>occurred</del> <del>for negative</del> <del>action</del> no identified distant setting event	When T [redacted] is accused of a negative action or angered	he will huff in air and slap his fists	to escape the accusation or situation by which he is angered
no identified distant setting event	When T [redacted] is accused of a negative action or angered	he will punch or pound objects	to escape the accusation or situation by which he is angered
no identified distant setting event	When T [redacted] disagrees with a situation	he will argue	to get what he wants and/or attention.





APPENDIX T: ALAN'S COMPLETED FAI FORM

FUNCTIONAL ASSESSMENT INTERVIEW (FAI)

Person of concern [redacted] Alan Age 11 Sex (M) F  
 Date of interview \_\_\_\_\_ Interviewer \_\_\_\_\_  
 Respondents \_\_\_\_\_

A. DESCRIBE THE BEHAVIORS.

1. For each of the behaviors of concern, define the topography (how it is performed), frequency (how often it occurs per day, week, or month), duration (how long it lasts when it occurs), and intensity (how damaging or destructive the behaviors are when they occur).

Behavior	Topography	Frequency	Duration	Intensity
a. talking out	constant talking to self or others	on & off	all day	low
b. fidgeting	constant moving, play w/ hair or objects	}	}	↓
c. ignoring directions	dazed look on face, staring off			
d. out of seat behavior	legs up on chair, rocking, moving around room			
e. lying	when called out for actions			
f.				
g.				
h.				
i.				
j.				

2. Which of the behaviors described above are likely to occur together in some way? Do they occur about the same time? In some kind of predictable sequence or "chain"? In response to the same type of situation?

Behaviors b, c & d tend to occur together - while e tends to be a reaction to all (a-d)

**B. DEFINE ECOLOGICAL EVENTS (SETTING EVENTS) THAT PREDICT OR SET UP THE PROBLEM BEHAVIORS.**

1. What *medications* is the person taking (if any), and how do you believe these may affect his or her behavior?

none shared by parent or student  
 (although he does have a 504)

2. What *medical or physical conditions (if any)* does the person experience that may affect his or her behavior (e.g., asthma, allergies, rashes, sinus infections, seizures, problems related to menstruation)?

Vision problems  
 ADD/ADHD

3. Describe the *sleep patterns* of the individual and the extent to which these patterns may affect his or her behavior.

appears to be normal (according to Alan [redacted])

4. Describe the *eating routines and diet* of the person and the extent to which these may affect his or her behavior.

adam recieves breakfast & lunch at school.  
 According to him, they eat normal meals at home

5a. Briefly list below the person's typical daily schedule of activities. (Check the boxes by those activities the person enjoys and those activities most associated with problems.)

Enjoys	Problems		Enjoys	Problems	
<input type="checkbox"/>	<input type="checkbox"/>	6:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2:00
<input type="checkbox"/>	<input type="checkbox"/>	7:00	<input type="checkbox"/>	<input type="checkbox"/>	3:00
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:00	<input type="checkbox"/>	<input type="checkbox"/>	4:00
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9:00	<input type="checkbox"/>	<input type="checkbox"/>	5:00
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10:00	<input type="checkbox"/>	<input type="checkbox"/>	6:00
<input type="checkbox"/>	<input checked="" type="checkbox"/>	11:00	<input type="checkbox"/>	<input type="checkbox"/>	7:00
<input type="checkbox"/>	<input checked="" type="checkbox"/>	12:00	<input type="checkbox"/>	<input type="checkbox"/>	8:00
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1:00	<input type="checkbox"/>	<input type="checkbox"/>	9:00

home/sleep  
 breakfast  
 silent reading/specials  
 reading block  
 (lunch)  
 math  
 science  
~~science~~ recess  
 home  
 ↓

- 6b. To what extent are the activities on the daily schedule *predictable* for the person, with regard to what will be happening, when it will occur, with whom, and for how long?

predictable occurrences are during any  
concrete subject area, (ie: language arts,  
math and science) especially during whole  
group or independent work.

- 5c. To what extent does the person have the opportunity during the day to *make choices* about his or her activities and reinforcing events? (e.g., food, clothing, social companions, leisure activities)

Student makes lunch choice, book choice for SSR,  
activity choice for recess. Student also  
formally used to make activity choice for L.A. block

6. How many other persons are typically around the individual at home, school, or work (including staff, classmates, and housemates)? Does the person typically seem bothered in situations that are more *crowded and noisy*?

We have a small class (16 students) and 1 assistant  
occasionally in the room. Single mom @ home  
-doesn't affect behavior-

7. What is the pattern of *staffing support* that the person receives in home, school, work, and other settings (e.g., 1:1, 2:1)? Do you believe that the *number of staff, the training of staff, or their social interactions with the person* affect the problem behaviors?

Student tends to deal w/ one adult @ a time.  
Single mom @ home carries ratio to after  
school hours. -doesn't affect-

3. DEFINE SPECIFIC IMMEDIATE ANTECEDENT EVENTS THAT PREDICT WHEN THE BEHAVIORS ARE *LIKELY* AND *NOT LIKELY* TO OCCUR.

1. *Times of Day*: When are the behaviors most and least likely to happen?

Most likely: reading block (whole group or independent wk.)  
math and science

Least likely: partner work, recess, lunch, transitions  
in hallways, etc

2. *Settings:* Where are the behaviors most and least likely to happen?

Most likely: whole class instruction (while student is at seat)

Least likely: when student has freedom to move (SSR, recess, transitions, etc)

3. *People:* With whom are the behaviors most and least likely to happen?

Most likely: around any other student

Least likely: while alone

4. *Activity:* What activities are most and least likely to produce the behaviors?

Most likely: instruction, independent work

Least likely: reading, recess, lunch

5. Are there particular or idiosyncratic situations or events not listed above that sometimes seem to "set off" the behaviors, such as particular demands, noises, lights, clothing?

none noticed

6. What *one thing* could you do that would most likely make the undesirable behaviors occur?

confront child about an issue (behavior, work, etc)

7. Briefly describe how the person's behavior would be affected if...

a. You asked him or her to perform a difficult task.

shut down, fidgeting begins, loses focus

b. You interrupted a desired activity, such as eating ice cream or watching TV.

frustration, lying, fidgeting

c. You unexpectedly changed his or her typical routine or schedule of activities.

normally nothing - doesn't tend to affect child

d. She or he wanted something but wasn't able to get it (e.g., a food item up on a shelf).

fidgeting, out of seat behavior, attitude,  
mothing back, frustration, etc.

e. You didn't pay attention to the person or left her or him alone for a while (e.g., 15 minutes).

fidgeting and out of seat behaviors, talking  
to others near him

**D. IDENTIFY THE CONSEQUENCES OR OUTCOMES OF THE PROBLEM BEHAVIORS THAT MAY BE MAINTAINING THEM (I.E., THE FUNCTIONS THEY SERVE FOR THE PERSON IN PARTICULAR SITUATIONS).**

1. Think of each of the behaviors listed in Section A, and try to identify the *specific* consequences or outcomes the person gets when the behaviors occur in different situations.

Behavior	Particular situations	What exactly does he or she get?	What exactly does she or he avoid?
a. <u>talking out</u>	<u>independant work</u>		<u>doing task</u>
b. <u>fidgeting</u>	<u>whole group instruction</u>		<u>participation &amp; paying attention</u>
c. <u>ignoring directions</u>	<u>across many</u>		<u>doing task</u>
d. <u>out of seat behaviors</u>	<u>across many</u>		<u>doing task / paying attention</u>
e. <u>lying</u>	<u>discussion w/outout</u>		<u>getting in trouble?</u>
f. _____	_____		_____
g. _____	_____		_____
h. _____	_____		_____
i. _____	_____		_____
j. _____	_____		_____

**E. CONSIDER THE OVERALL EFFICIENCY OF THE PROBLEM BEHAVIORS. EFFICIENCY IS THE COMBINED RESULT OF (A) HOW MUCH PHYSICAL EFFORT IS REQUIRED, (B) HOW OFTEN THE BEHAVIOR IS PERFORMED BEFORE IT IS REWARDED, AND (C) HOW LONG THE PERSON MUST WAIT TO GET THE REWARD.**

	Low Efficiency				High Efficiency
<u>talking out</u>	1	(2)	3	4	5
<u>fidgeting</u>	1	(2)	3	4	5
<u>ignoring directions</u>	1	(2)	3	4	5
<u>out of seat behaviors</u>	1	(2)	3	4	5
<u>lying</u>	1	(2)	3	4	5

**F. WHAT FUNCTIONAL ALTERNATIVE BEHAVIORS DOES THE PERSON ALREADY KNOW HOW TO DO?**

1. What socially appropriate behaviors or skills can the person already perform that may generate the same outcomes or reinforcers produced by the problem behaviors?

able to raise hand & ask questions or for help  
able to ask to move closer to see better

**G. WHAT ARE THE PRIMARY WAYS THE PERSON COMMUNICATES WITH OTHER PEOPLE?**

1. What are the general expressive communication strategies used by or available to the person? These might include vocal speech, signs/gestures, communication boards/books, or electronic devices. How consistently are the strategies used?

~~He~~ uses vocal speech to communicate,  
although he does need speech services

2. On the following chart, indicate the behaviors the person uses to achieve the communicative outcomes listed:

Communicative Functions	Complex speech (sentences)	Multiple-word phrases	One-word utterances	Echolalia	Other vocalizing	Complex signing	Single signs	Pointing	Leading	Shakes head	Grabs/reaches	Gives objects	Increased movement	Moves close to you	Moves away or leaves	Fixed gaze	Facial expression	Aggression	Self-injury	Other
Request attention		X																		X
Request help		X						X												X
Request preferred food/objects/activities	X	X																		
Request break	X	X																		
Show you something or some place		X						X												
Indicate physical pain (headache, illness)	X	X																		
Indicate confusion or unhappiness	X	X																		
Protest or reject a situation or activity	X	X																		

3. With regard to the person's receptive communication, or ability to understand other persons . . .

a. Does the person follow spoken requests or instructions? If so, approximately how many? (List if only a few.)

occasionally - when repeated (working on task, focusing on lesson)

b. Does the person respond to signed or gestural requests or instructions? If so, approximately how many? (List if only a few.)

can follow pointing prompts during math

c. Is the person able to imitate if you provide physical models for various tasks or activities? (List if only a few.)

yes

d. How does the person typically indicate yes or no when asked if she or he wants something, wants to go somewhere, and so on?

nodding/shaking head - especially since speech is hard to understand

H. WHAT ARE THINGS YOU SHOULD DO AND THINGS YOU SHOULD AVOID IN WORKING WITH AND SUPPORTING THIS PERSON?

1. What things can you do to improve the likelihood that a teaching session or other activity will go well with this person?

slower paced instruction, separating student from others, moving him closer for visual purposes

2. What things should you avoid that might interfere with or disrupt a teaching session or activity with this person?

calling him out in front of others, faster paced instruction

I. WHAT ARE THINGS THE PERSON LIKES AND ARE REINFORCING FOR HIM OR HER?

1. Food items: snacks and sweets (junk food, candy, cookies)

2. Toys and objects: I spy books, comics, handson toys

3. Activities at home: video games & tv

4. Activities/outings in the community: sports @ Erwin center

5. Other: n/a

**J. WHAT DO YOU KNOW ABOUT THE HISTORY OF THE UNDESIRABLE BEHAVIORS, THE PROGRAMS THAT HAVE BEEN ATTEMPTED TO DECREASE OR ELIMINATE THEM, AND THE EFFECTS OF THOSE PROGRAMS?**

<i>Behavior</i>	<i>How long has this been a problem?</i>	<i>Programs</i>	<i>Effects</i>
1. <u>talking out</u>	<u>all year</u>	<u>redirect</u>	<u>little</u>
2. <u>fidgeting</u>	↓	↓	↓
3. <u>ignoring directions</u>	↓	↓	↓
4. <u>out of seat behavior</u>	↓	↓	↓
5. <u>lying</u>	↓	<u>call parents</u>	<u>none</u>
6.			
7.			
8.			
9.			
10.			



## K. DEVELOP SUMMARY STATEMENTS FOR EACH MAJOR PREDICTOR AND/OR CONSEQUENCE.

<i>Distant Setting Event</i>	<i>Immediate Antecedent (Predictor)</i>	<i>Problem Behavior</i>	<i>Maintaining Consequence</i>
	When whole group instruction is occurring [redacted]	fidgets in seat	in order to avoid participation and learning
	During independent work or other situations where [redacted] is expected to work	he will talk out to others near him	to avoid completing assignments
more likely if other behavior have occurred earlier	when confronted about any situation [redacted]	will lie	to avoid getting in trouble
	[redacted] when asked to complete tasks will	ignore directions	to avoid completion of activities
	During whole group instructions or independent tasks	perform out of seat behaviors (crocking, moving around, etc)	to avoid completion of tasks

APPENDIX U: ALAN'S COMPLETED FAO FORM

Functional Assessment Observation Form

Name: Alan

Starting Date: 2/15/17 Ending Date: 2/17

Time	Behaviors				Predictors				Perceived Functions				Actual Contact										
	Talk out	Placing	eyes on teacher	out of seat	Demands/requests	Difficult task	Transitions	Interactions	Alone (no breaks)	indep task	make up instr	Attention		Dated handwriting	Self-stimulation	Get/Obtain	Escape/Avoid	Over/Don't know	redirect	ignore			
8:00-8:15						14														14	BAJ		
9:15-10:00																						BAJ	
10:00-10:15																						BAJ	
10:15-11:15	5	3	6	4					2													BAJ	
11:15-12:00																						BAJ	
12:00-12:15																						BAJ	
12:30-1:00																						BAJ	
1:1-1:2																						BAJ	
Totals	5	2	3	3	3	2	2	1	3	10												13	3
Events:	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25																						
Date:	2/15 1/2 day 2/17																						

Comments: (if nothing happened in period write initials)

APPENDIX V: SHAUN'S COMPLETED FAI FORM

FUNCTIONAL ASSESSMENT INTERVIEW (FAI)

Person of concern [redacted] <sup>Shaun</sup> Age 11 Sex  M  F  
 Date of interview 3/26/10 Interviewer [redacted]  
 Respondents [redacted]

A. DESCRIBE THE BEHAVIORS.

1. For each of the behaviors of concern, define the topography (how it is performed), frequency (how often it occurs per day, week, or month), duration (how long it lasts when it occurs), and intensity (how damaging or destructive the behaviors are when they occur).

	Behavior	Topography	Frequency	Duration	Intensity
a.	Not focusing	daydreams	5-8 times/day	25sec.-3 min.	low/mod
b.	Off task	looks around/ talks to others/ wanders around the room	↓	↓	↓
c.					
d.					
e.					
f.					
g.					
h.					
i.					
j.					

2. Which of the behaviors described above are likely to occur together in some way? Do they occur about the same time? In some kind of predictable sequence or "chain"? In response to the same type of situation?

wandering around the room/ talking to others

**B. DEFINE ECOLOGICAL EVENTS (SETTING EVENTS) THAT PREDICT OR SET UP THE PROBLEM BEHAVIORS.**

1. What *medications* is the person taking (if any), and how do you believe these may affect his or her behavior?

medication for ADHD (I think)

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2. What *medical or physical conditions (if any)* does the person experience that may affect his or her behavior (e.g., asthma, allergies, rashes, sinus infections, seizures, problems related to menstruation)?

ADHD diagnosis unknown

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---

3. Describe the *sleep patterns* of the individual and the extent to which these patterns may affect his or her behavior.

Never sleepy in class; sleeps well  
Sometimes mentions going to bed late.

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4. Describe the *eating routines and diet* of the person and the extent to which these may affect his or her behavior.

No consistent problems

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5a. Briefly list below the person's typical daily schedule of activities. (Check the boxes by those activities the person enjoys and those activities most associated with problems.)

<i>Enjoys</i>	<i>Problems</i>		<i>Enjoys</i>	<i>Problems</i>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	6:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2:00
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3:00
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8:00	<input type="checkbox"/>	<input type="checkbox"/>	4:00
<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:00	<input type="checkbox"/>	<input type="checkbox"/>	5:00
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10:00	<input type="checkbox"/>	<input type="checkbox"/>	6:00
<input checked="" type="checkbox"/>	<input type="checkbox"/>	11:00	<input type="checkbox"/>	<input type="checkbox"/>	7:00
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12:00	<input type="checkbox"/>	<input type="checkbox"/>	8:00
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1:00	<input type="checkbox"/>	<input type="checkbox"/>	9:00

(Sometimes)

- 5b. To what extent are the activities on the daily schedule *predictable* for the person, with regard to what will be happening, when it will occur, with whom, and for how long?

Class schedule on board; verbal reminders

- 5c. To what extent does the person have the opportunity during the day to *make choices* about his or her activities and reinforcing events? (e.g., food, clothing, social companions, leisure activities)

Food choices for lunch, seating options. Sometimes at lunch, free play at recess

6. How many other persons are typically around the individual at home, school, or work (including staff, classmates, and housemates)? Does the person typically seem bothered in situations that are more *crowded and noisy*?

Classroom - 15 other students / 1 assistant less than 1 hr. a day

Very bothered/distracted when in crowded/noisy situations

7. What is the pattern of *staffing support* that the person receives in home, school, work, and other settings (e.g., 1:1, 2:1)? Do you believe that the *number of staff, the training of staff, or their social interactions with the person* affect the problem behaviors?

Child/teacher ratio is 16:1; does better in small group instruction

3. DEFINE SPECIFIC IMMEDIATE ANTECEDENT EVENTS THAT PREDICT WHEN THE BEHAVIORS ARE *LIKELY* AND *NOT LIKELY* TO OCCUR.

1. *Times of Day*: When are the behaviors most and least likely to happen?

Most likely: in the morning/before lunch, at Math stations

Least likely: afternoon prior to recess

2. *Settings: Where are the behaviors most and least likely to happen?*

Most likely: in the classroom, gym during PE,  
where peers are

Least likely: in the community

3. *People: With whom are the behaviors most and least likely to happen?*

Most likely: equal - all teachers

Least likely: n/a

4. *Activity: What activities are most and least likely to produce the behaviors?*

Most likely: Reading stations, Math stations,  
group work independent work

Least likely: whole group instruction

5. *Are there particular or idiosyncratic situations or events not listed above that sometimes seem to "set off" the behaviors, such as particular demands, noises, lights, clothing?*

Increase in noise/movement of others

6. *What one thing could you do that would most likely make the undesirable behaviors occur?*

put him with certain students for partner work

7. *Briefly describe how the person's behavior would be affected if . . .*

- a. *You asked him or her to perform a difficult task.*

work for a while/get distracted

- b. *You interrupted a desired activity, such as eating ice cream or watching TV.*

no response unless in trouble

- c. *You unexpectedly changed his or her typical routine or schedule of activities.*

much more likely to be off task/distracted

d. She or he wanted something but wasn't able to get it (e.g., a food item up on a shelf).

may speak loudly about his feelings

e. You didn't pay attention to the person or left her or him alone for a while (e.g., 15 minutes).

off task / not following procedures / talking

**D. IDENTIFY THE CONSEQUENCES OR OUTCOMES OF THE PROBLEM BEHAVIORS THAT MAY BE MAINTAINING THEM (I.E., THE FUNCTIONS THEY SERVE FOR THE PERSON IN PARTICULAR SITUATIONS).**

1. Think of each of the behaviors listed in Section A, and try to identify the *specific* consequences or outcomes the person gets when the behaviors occur in different situations.

	<i>Behavior</i>	<i>Particular situations</i>	<i>What exactly does he or she get?</i>	<i>What exactly does she or he avoid?</i>
a.	Not focusing	Partner Work	/	doing task
b.	off task	Independent Work	/	doing task
c.				
d.				
e.				
f.				
g.				
h.				
i.				
j.				

**E. CONSIDER THE OVERALL EFFICIENCY OF THE PROBLEM BEHAVIORS. EFFICIENCY IS THE COMBINED RESULT OF (A) HOW MUCH PHYSICAL EFFORT IS REQUIRED, (B) HOW OFTEN THE BEHAVIOR IS PERFORMED BEFORE IT IS REWARDED, AND (C) HOW LONG THE PERSON MUST WAIT TO GET THE REWARD.**

	Low Efficiency	2	3	4	High Efficiency
<u>Not focusing</u>	①	2	3	4	5
<u>Off task/talking</u>	1	②	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5

**F. WHAT FUNCTIONAL ALTERNATIVE BEHAVIORS DOES THE PERSON ALREADY KNOW HOW TO DO?**

1. What socially appropriate behaviors or skills can the person already perform that may generate the same outcomes or reinforcers produced by the problem behaviors?

raise hand for help

**G. WHAT ARE THE PRIMARY WAYS THE PERSON COMMUNICATES WITH OTHER PEOPLE?**

1. What are the general expressive communication strategies used by or available to the person? These might include vocal speech, signs/gestures, communication boards/books, or electronic devices. How consistently are the strategies used?

speaks in sentences

2. On the following chart, indicate the behaviors the person uses to achieve the communicative outcomes listed:

Communicative Functions	Complex speech (sentences)	Multiple-word phrases	One-word utterances	Echolalia	Other vocalizing	Complex signing	Single signs	Pointing	Leading	Shakes head	Grabs/reaches	Gives objects	Increased movement	Moves close to you	Moves away or leaves	Fixed gaze	Facial expression	Aggression	Self-injury	Other
Request attention	X													X						
Request help	X													X						
Request preferred food/objects/activities	X													X						
Request break	X													X						
Show you something or some place	X													X						
Indicate physical pain (headache, illness)	X													X						
Indicate confusion or unhappiness	X													X						
Protest or reject a situation or activity	X													X						



3. With regard to the person's receptive communication, or ability to understand other persons . . .

a. Does the person follow spoken requests or instructions? If so, approximately how many? (List if only a few.)

yes, sometimes but usually needs to be reminded  
of my instructions

b. Does the person respond to signed or gestural requests or instructions? If so, approximately how many? (List if only a few.)

can follow pointing gestures

c. Is the person able to imitate if you provide physical models for various tasks or activities? (List if only a few.)

imitates models, but may lose focus during  
the task

d. How does the person typically indicate yes or no when asked if she or he wants something, wants to go somewhere, and so on?

will say yes/no

H. WHAT ARE THINGS YOU SHOULD DO AND THINGS YOU SHOULD AVOID IN WORKING WITH AND SUPPORTING THIS PERSON?

1. What things can you do to improve the likelihood that a teaching session or other activity will go well with this person?

close proximity, fast pace, playful attitude

2. What things should you avoid that might interfere with or disrupt a teaching session or activity with this person?

getting off task in discussions in class lessons

I. WHAT ARE THINGS THE PERSON LIKES AND ARE REINFORCING FOR HIM OR HER?

1. Food items: sweets, chips, etc.

2. Toys and objects: pencils - mechanical, small objects

3. Activities at home: games - electronic, sports

4. Activities/outings in the community: unknown

5. Other: NA

**J. WHAT DO YOU KNOW ABOUT THE HISTORY OF THE UNDESIRABLE BEHAVIORS, THE PROGRAMS THAT HAVE BEEN ATTEMPTED TO DECREASE OR ELIMINATE THEM, AND THE EFFECTS OF THOSE PROGRAMS?**

<i>Behavior</i>	<i>How long has this been a problem?</i>	<i>Programs</i>	<i>Effects</i>
1. <u>Not focusing</u>	<u>1+ yrs.</u>	<u>redirects</u>	<u>some effect</u>
2. <u>off task</u>	<u>1+ yrs.</u>	<u>redirects</u>	<u>some effect</u>
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			

K. DEVELOP SUMMARY STATEMENTS FOR EACH MAJOR PREDICTOR AND/OR CONSEQUENCE.

<i>Distant Setting Event</i>	<i>Immediate Antecedent (Predictor)</i>	<i>Problem Behavior</i>	<i>Maintaining Consequence</i>
More likely if no meds were given at home	When [redacted] is asked to complete a task with a partner	he will get off-task and begin talking/moving around	In order to escape the tasks.
More likely if meds were not given at home	When [redacted] is asked to complete a task independently	he will lose focus and daydream	in order to escape the tasks.



APPENDIX X: JAQUAN'S COMPLETED FAI FORM

FUNCTIONAL ASSESSMENT INTERVIEW (FAI)

Person of concern Jaquan [redacted] Age 10 Sex  M  F  
 Date of interview 3-26-10 Interviewer [redacted]  
 Respondents \_\_\_\_\_

A. DESCRIBE THE BEHAVIORS.

1. For each of the behaviors of concern, define the topography (how it is performed), frequency (how often it occurs per day, week, or month), duration (how long it lasts when it occurs), and intensity (how damaging or destructive the behaviors are when they occur).

Behavior	Topography	Frequency	Duration	Intensity
a. <u>talking out</u>	<u>making comments during instruction</u>	<u>on &amp; off all day</u>		<u>low</u>
b. <u>attitude</u>	<u>closes self off/disrespect/mumbling under breath/shuts down</u>	<u>on &amp; off all day</u>		<u>low</u>
c.				
d.				
e.				
f.				
g.				
h.				
i.				
j.				

2. Which of the behaviors described above are likely to occur together in some way? Do they occur about the same time? In some kind of predictable sequence or "chain"? In response to the same type of situation?

behavior a. triggers b (when student does not 'get his way')

**B. DEFINE ECOLOGICAL EVENTS (SETTING EVENTS) THAT PREDICT OR SET UP THE PROBLEM BEHAVIORS.**

1. What *medications* is the person taking (if any), and how do you believe these may affect his or her behavior?

ADHD meds (makes his behavior tolerable)

2. What *medical or physical conditions (if any)* does the person experience that may affect his or her behavior (e.g., asthma, allergies, rashes, sinus infections, seizures, problems related to menstruation)?

ADHD, Anger

3. Describe the *sleep patterns* of the individual and the extent to which these patterns may affect his or her behavior.

sleeps normal

4. Describe the *eating routines and diet* of the person and the extent to which these may affect his or her behavior.

eats normal

5a. Briefly list below the person's typical daily schedule of activities. (Check the boxes by those activities the person enjoys and those activities most associated with problems.)

Enjoys	Problems		Enjoys	Problems	
<input type="checkbox"/>	<input type="checkbox"/>	6:00	<input type="checkbox"/>	<input type="checkbox"/>	2:00
<input type="checkbox"/>	<input type="checkbox"/>	7:00	<input type="checkbox"/>	<input type="checkbox"/>	3:00
<input type="checkbox"/>	<input type="checkbox"/>	8:00	<input type="checkbox"/>	<input type="checkbox"/>	4:00
<input type="checkbox"/>	<input type="checkbox"/>	9:00	<input type="checkbox"/>	<input type="checkbox"/>	5:00
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10:00	<input type="checkbox"/>	<input type="checkbox"/>	6:00
<input type="checkbox"/>	<input checked="" type="checkbox"/>	11:00	<input type="checkbox"/>	<input type="checkbox"/>	7:00
<input type="checkbox"/>	<input checked="" type="checkbox"/>	12:00	<input type="checkbox"/>	<input type="checkbox"/>	8:00
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1:00	<input type="checkbox"/>	<input type="checkbox"/>	9:00

- 5b. To what extent are the activities on the daily schedule *predictable* for the person, with regard to what will be happening, when it will occur, with whom, and for how long?

predictable occurrences are during whole group instruction (ie: shared reading, math, science)

- 5c. To what extent does the person have the opportunity during the day to *make choices* about his or her activities and reinforcing events? (e.g., food, clothing, social companions, leisure activities)

student has variety of "choice" opportunities - lunch, recess activity, book choice, after school care

6. How many other persons are typically around the individual at home, school, or work (including staff, classmates, and housemates)? Does the person typically seem bothered in situations that are more crowded and noisy?

small class size, small after school program,  $\approx 10$  people at home each day

7. What is the pattern of *staffing support* that the person receives in home, school, work, and other settings (e.g., 1:1, 2:1)? Do you believe that the *number* of staff, the *training* of staff, or their *social interactions with the person* affect the problem behaviors?

mostly small group (myself w/ 4 students) or whole class

2-30min blocks of 1:3 ratio for stations

3. DEFINE SPECIFIC IMMEDIATE ANTECEDENT EVENTS THAT PREDICT WHEN THE BEHAVIORS ARE *LIKELY* AND *NOT LIKELY* TO OCCUR.

1. *Times of Day*: When are the behaviors most and least likely to happen?

Most likely: whole group instruction - math, reading & science

Least likely: partner work, SSR, lunch, transitions, independent tasks, etc.

2. *Settings:* Where are the behaviors most and least likely to happen?

Most likely: classroom or tutoring

Least likely: settings outside room (recess, lunch, etc)

3. *People:* With whom are the behaviors most and least likely to happen?

Most likely: any other adult (someone other than myself)

Least likely: na

4. *Activity:* What activities are most and least likely to produce the behaviors?

Most likely: any solid instruction period

Least likely: independant tasks

5. Are there particular or idiosyncratic situations or events not listed above that sometimes seem to "set off" the behaviors, such as particular demands, noises, lights, clothing?

no

6. What *one thing* could you do that would most likely make the undesirable behaviors occur?

place another adult in my place for instruction, frequently

7. Briefly describe how the person's behavior would be affected if . . .

a. You asked him or her to perform a difficult task.

call him out for talking  
would attempt; ask questions then get frustrated if  
couldn't understand any thing or unable to ask for help

b. You interrupted a desired activity, such as eating ice cream or watching TV.

possible attitude for brief moment

c. You unexpectedly changed his or her typical routine or schedule of activities.

frustration, trying to correct schedule/adult



- d. She or he wanted something but wasn't able to get it (e.g., a food item up on a shelf).  
student develops strong attitude & shuts down when  
unable to get ~~required~~ requested item (physical & nonphysical)
- e. You didn't pay attention to the person or left her or him alone for a while (e.g., 15 minutes).  
talking out, frustration

**D. IDENTIFY THE CONSEQUENCES OR OUTCOMES OF THE PROBLEM BEHAVIORS THAT MAY BE MAINTAINING THEM (I.E., THE FUNCTIONS THEY SERVE FOR THE PERSON IN PARTICULAR SITUATIONS).**

1. Think of each of the behaviors listed in Section A, and try to identify the *specific* consequences or outcomes the person gets when the behaviors occur in different situations.

Behavior	Particular situations	What exactly does he or she get?	What exactly does she or he avoid?
a. <u>talking out</u>	<u>whole group</u>	<u>attention</u>	<u>na</u>
b. <u>attitude</u>	<u>instruction</u>	<u>↓</u>	<u>na</u>
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

**E. CONSIDER THE OVERALL EFFICIENCY OF THE PROBLEM BEHAVIORS. EFFICIENCY IS THE COMBINED RESULT OF (A) HOW MUCH PHYSICAL EFFORT IS REQUIRED, (B) HOW OFTEN THE BEHAVIOR IS PERFORMED BEFORE IT IS REWARDED, AND (C) HOW LONG THE PERSON MUST WAIT TO GET THE REWARD.**

	Low Efficiency				High Efficiency
<u>talking out</u>	1	2	3	4	5
<u>attitude</u>	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5

**F. WHAT FUNCTIONAL ALTERNATIVE BEHAVIORS DOES THE PERSON ALREADY KNOW HOW TO DO?**

1. What socially appropriate behaviors or skills can the person already perform that may generate the same outcomes or reinforcers produced by the problem behaviors?

able to raise hand to ask questions/for help  
knows he's able to talk w/me at lunch/recess/car riders

**G. WHAT ARE THE PRIMARY WAYS THE PERSON COMMUNICATES WITH OTHER PEOPLE?**

1. What are the general expressive communication strategies used by or available to the person? These might include vocal speech, signs/gestures, communication boards/books, or electronic devices. How consistently are the strategies used?

communicates through vocal speech; physical demeanor clearly  
shows students feelings & attitude

2. On the following chart, indicate the behaviors the person uses to achieve the communicative outcomes listed:

Communicative Functions	Complex speech (sentences)	Multiple-word phrases	One-word utterances	Echolalia	Other vocalizing	Complex signing	Single signs	Pointing	Leading	Shakes head	Grabs/reaches	Gives objects	Increased movement	Moves close to you	Moves away or leaves	Fixed gaze	Facial expression	Aggression	Self-injury	Other	
Request attention	X																				
Request help	X																				
Request preferred food/objects/activities	X																				
Request break	X																				
Show you something or some place	X																				
Indicate physical pain (headache, illness)	X																				
Indicate confusion or unhappiness	X																X				
Protest or reject a situation or activity	X																X				

3. With regard to the person's receptive communication, or ability to understand other persons . . .

a. Does the person follow spoken requests or instructions? If so, approximately how many? (List if only a few.)

yes - if you have to repeat something several times or  
give consequence, student shuts down

b. Does the person respond to signed or gestural requests or instructions? If so, approximately how many? (List if only a few.)

good - student follows gestures well (I give lots of  
non-verbal signals: seat down, move forward, stop talking, etc)

c. Is the person able to imitate if you provide physical models for various tasks or activities? (List if only a few.)

na

d. How does the person typically indicate yes or no when asked if she or he wants something, wants to go somewhere, and so on?

verbal - either simple answer or full sentence

H. WHAT ARE THINGS YOU SHOULD DO AND THINGS YOU SHOULD AVOID IN WORKING WITH AND SUPPORTING THIS PERSON?

1. What things can you do to improve the likelihood that a teaching session or other activity will go well with this person?

draw student into lesson w/several places to allow him to  
talk, ask question, give personal example, etc.

2. What things should you avoid that might interfere with or disrupt a teaching session or activity with this person?

seating arrangement, "drill & kill" instruction

I. WHAT ARE THINGS THE PERSON LIKES AND ARE REINFORCING FOR HIM OR HER?

1. Food items:

junk food - especially candy

2. Toys and objects: sports equipment

3. Activities at home: sports

4. Activities/outings in the community: n/a

5. Other: n/a

**J. WHAT DO YOU KNOW ABOUT THE HISTORY OF THE UNDESIRABLE BEHAVIORS, THE PROGRAMS THAT HAVE BEEN ATTEMPTED TO DECREASE OR ELIMINATE THEM, AND THE EFFECTS OF THOSE PROGRAMS?**

	<i>Behavior</i>	<i>How long has this been a problem?</i>	<i>Programs</i>	<i>Effects</i>
1.	talkng out	a while	moved seat, meds,	both have improved from previous years
2.	attitude		teacher ignored, called them constantly	
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

K. DEVELOP SUMMARY STATEMENTS FOR EACH MAJOR PREDICTOR AND/OR CONSEQUENCE.

<i>Distant Setting Event</i>	<i>Immediate Antecedent (Predictor)</i>	<i>Problem Behavior</i>	<i>Maintaining Consequence</i>
	During whole group instruction he	talks out	in order to gain attention
if student has been called out several times or w/ different adult	During instruction he	develops incorrect attitude	to gain attention

APPENDIX Y: JAQUAN'S COMPLETED FAO FORM

**Functional Assessment Observation Form**

Name: Jaquan

Starting Date: 4/19/10 Ending Date: 4/19/10

Time	Behaviors				Predictors				Perceived Functions							Actual Context (Comments if nothing happened in period with initials)					
	Attending	On-task	Off-task	Disruptive	Demands/Requests	Discuss Task	Transitions	Interruption	Alerts (no reaction)	Attention	Delayed Interactivity	Self-Stimulation	Get/Obtain	Demands/Requests	Activity		Person	Escapes/Avoid	Onset/Non-Occur		
8:55-9:00									10										10	9:00	
9:15-10:00								23		23										73	9:15
10:00-10:40																					10:00
10:40-11:15																					11:15
11:15-11:45									11	12											11:15
11:45-1:00									15	15											11:45
1:00-1:30																					1:00
1:30-2:00																					1:30
Totals									8	8									2		2:00

Events: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Date: 4/19/10