FUNCTIONAL BEHAVIORIAL ASSESSMENT: BASING INTERVENTION ON FUNCTION IN SCHOOL SETTINGS

By

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FUNCTIONAL BEHAVIORAL ASSESSMENT: BASING INTERVENTION ON FUNCTION IN SCHOOL SETTINGS

By

Linda Donica Payne

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Chair: Terry Scott
Cochair: James McLeskey
Major Department: Special Education

This study investigated the efficiency and efficacy of function indicated interventions compared to traditional intervention that were not based on the function of challenging behaviors for four elementary school students with mild disabilities using Functional Behavioral Assessment. Behavioral interventions based on functional behavioral assessment were found to be more effective than alternative interventions across all four subjects. Implications, study limitations, and future research directions are discussed.
CHAPTER 1
INTRODUCTION

The purpose of this first chapter is threefold. First, the scope of problem behavior in the school setting as it affects both students’ present and future lives and the lives of those who work with them will be presented. Second, an assessment strategy based on determining the function of problem behavior for the purpose of creating intervention plans that both discourage inappropriate behavior and encourage an appropriate replacement behavior will be outlined. Lastly, questions of concern for this study are presented.

Scope of Problem Behavior in the School

Although most students maintain successful conduct in public school settings, some develop problem behaviors that are deemed inappropriate and that jeopardize the quality of their education. While positive social interaction with peers and teachers is problematic for some of these students, others simply have difficulty with basic school rules and procedures such as walking in line, raising their hand to receive assistance, or participating in class discussions. Whatever the topography or nature might be, inappropriate behavior in schools often presents both a safety concern and a loss of learning time for both the student and his or her peers in the environment. To be certain, these students require effective intervention if they are to successfully matriculate through the public school system.

In schools today, teachers express frustration with traditional discipline strategies and believe that such strategies are not effective in managing inappropriate behaviors in
school settings. In fact, a recent survey reports that teachers rank managing classroom behavior as their foremost concern and feel that their preparation was inadequate (Miller, McKenna, & McKenna, 1998). Many teachers today believe they do not have the strategies they need to manage extreme cases of inappropriate behavior (Bender & Mathes, 1995). Although teachers report feeling some sense of inadequacy in planning lessons, teaching content, and utilizing appropriate instructional strategies, the same cannot be said for controlling student behavior and implementing a system of discipline, which appears to be a major obstacle to providing effective instruction (Miller, McKenna, & McKenna, 1998).

The challenge of educating today’s students involves teaching content in the midst of an information and technology explosion and with students who sometimes display alarmingly inappropriate behavior, disrupting the learning process for all students. For the teacher, the results of these behavior patterns are wasted instructional time and energy, which must be redirected away from content instruction because of those behaviors.

Extreme cases of school violence are widely publicized in the media. In a recent survey, the National Center for Injury Prevention and Control (www.cdc.gov/ncipc) reported the majority of violent incidents in schools to be homicides, involving the use of firearms. While the total number of incidents has decreased over the last decade, the number of multiple victim events has increased, receiving expanded coverage from news sources. In 1998, the U.S. Secretary of Education issued a report compiled by an impressive task force of national experts (Early Warning, Timely Response: A Guide to Safe Schools) which recommended that efforts be initiated to respond to cases of
violence, but that the real solution lies in preventative efforts to build and maintain safe school climates.

Classroom disruptions are much more pervasive than isolated incidents of extreme violence, consuming huge amounts of instructional time and educator energy. It is understandable that teachers sometimes get caught up in the trap of reactive responding to problem student behavior and even engaging in power struggles. These disruptions also distract other students, impeding the learning process for both the student displaying the disruptive behavior and, often, innocent bystanders (other students in the class). Many times these problems can be predicted by time, location, and context, allowing teachers to proactively plan for prevention and, failing that, effective intervention.

Whether the problem behavior is extremely disruptive or just mildly annoying, school outcomes, in both social and academic contexts, are bleak for students identified with emotional/behavioral disorders (EBD). The U. S. Department of Education reported in 1998 that students with EBD had the highest dropout rate of any defined group of students. Also, poor academic and social performances have been documented for students with EBD. In a longitudinal study, students with EBD started first grade at a higher academic level than students with learning disorders (LD) but by the end of fourth grade had fallen significantly behind (Anderson, Kutash, & Duchnowski, 2001). Societal problems for students with EBD include employment difficulties, homelessness, criminal justice system involvement, and adult relationship problems (Anderson, Kutash, & Duchnowski, 2001). Students experiencing behavior problems in schools are logically at-risk for eventual EBD identification and potential negative outcomes as well. The urgency of the need for effective interventions, coupled with the difficulty teachers
experience in dealing with students’ problematic behavior serves to highlight the need for effective methods of addressing problematic student behavior in schools today.

Historically, school discipline has been reactive, simply waiting for problems to occur and then applying punitive procedures (Colvin, Sugai, & Kameenui, 1993). This has left students to discover appropriate ways of behaving through a trial-and-error process. However, because repeated failures do not constitute effective instruction, many students simply give up. Using what is known about the nature and context of behavior to intervene in school environments can lower the prevalence of antisocial behavior and support the promotion and maintenance of socially valid behaviors (Biglan, 1995).

Functional behavioral assessment (FBA) is an assessment strategy that informs effective intervention and is promising for use in school settings to facilitate the replacement of current punitive discipline methods that have become common practice despite their ineffectiveness (Hendrickson, Gable, Conroy, Fox, & Smith, 1999).

**Functional Behavior Assessment**

While functional behavior intervention plans discourage inappropriate behavior, the main focus is on teaching, encouraging, and reinforcing appropriate behavior. FBA is an element of Positive Behavior Supports (PBS), an approach involving the application of school-wide systems and interventions to achieve socially valid changes in behavior (Sugai et al., 2000). Although PBS was initially developed as an option to aversive interventions with students with significant disabilities who engaged in extreme forms of self-injury and aggression, the application has been expanded to a widening range of students and their environments (Sugai et al., 2000). PBS can be defined as a behaviorally-based systems approach that links research-validated practices to teaching and learning environments (Sugai et al., 2000). Thus, it is proactive rather than reactive.
The goal of PBS is to eliminate problem behaviors using a three-level system: the universal (school-wide) level for all students, the secondary (at-risk) level for students displaying some problem behaviors, and the individual student (for the most intense needs) level with students for whom universal and targeted systems have been insufficient to facilitate success (Lewis & Sugai, 1999). At the secondary and individual student levels FBA is used for students with both mild and severe problem behaviors.

The Reauthorization of the Individuals with Disabilities Education Act (IDEA), 1997, maintains provisions that address this issue in two ways. First, for students with an Individual Educational Plan (IEP), “positive behavioral intervention strategies and supports” must be included in instances where behavior impedes the learning of the student or others (P. L. 105-17, Section 614). Second, if a student with such a plan is suspended from school and an FBA resulting in the implementation of a behavioral intervention plan (BIP) has not been conducted, an IEP meeting must be held to develop such a plan (P. L. 105-17, Section 615). Thus, FBA has been mandated for schools in these narrowly defined circumstances and, as a result, school personnel have broadened its use to include students considered at-risk for emotional or behavioral disorders (EBD), such as students who chronically demonstrate difficult and challenging behavior at school.

FBA is a systematic method of gathering information about behavior and its relationship with the environment in which it occurs. Its goal is to identify the function or purpose that behavior serves for the student under specific environmental conditions. A basic tenet of FBA is that when the function of a behavior is identified, an appropriate replacement behavior can be taught and interventions effectively tailored to address the
distinct needs of the individual in the context in which behavior occurs (Iwata et al.,
of information gathered in conducting FBA is dependent upon the severity of the
student’s behavior problems. In its simplest form, data collection might involve indirect
methods such as structured interviews, checklists, or reviews of student records
(Chandler & Dahlquist, 2002; Crone & Horner, 2003; Kerr & Nelson, 2002). When
problem behaviors are more complex or dangerous, data collection likely will include
direct observation of student behavior in natural settings (Crone & Horner, 2003; O’Neill
et al., 1997). From these data, the function of behavior is determined and interventions
are developed that teach and encourage functionally equivalent replacement behaviors.

Based on well-established principles of behavior theory, FBA is predicated on the
notion that behavior is elicited or signaled by environmental events or antecedents and is
reinforced by environmental consequences (Alberto & Troutman, 1999; Miltenberger,
2004; Skinner, 1953; Skinner, 1974). Thus, knowledge of antecedents and consequences
enables the prediction of behavior and its function, which in turn, logically suggests a
means of prevention. Because the purpose of FBA is to determine the function of
behavior and then to design appropriate interventions, the FBA is not complete until an
effective intervention has been implemented. The function of behavior can be categorized
into four possible groups: 1) sensory reinforcement, 2) escape/avoidance of an
undesirable situation, 3) seeking attention, and 4) access to tangible(s) (Carr & Durand,
1985; Iwata et al., 1982; Sasso et al., 1992). Still, each of these can be further collapsed
to create two broad categories: access to reinforcing stimuli or events and
escape/avoidance of aversive stimuli or events. Resulting interventions then are focused
on teaching appropriate behaviors that help the student to achieve the same functional outcome as the problem behavior. For example, if the function of a student’s yelling behavior was determined to be access to teacher attention, then a functionally appropriate behavior plan for him would be to teach a more appropriate manner of accessing teacher attention, such as raising his hand and to then be certain that teacher attention was available contingent upon hand raising.

In the school setting, FBA is a tool that teachers can use to identify the function of problem behavior (e.g., yelling in class to gain teacher attention) and design an intervention plan based on that function (Scott & Nelson, 1999b). Such plans involve student acquisition of prosocial replacement behaviors that serve the same function as the undesirable behavior (e.g., raising a hand to get the teacher’s attention). In addition, these plans generate strategies that create environments where desirable behaviors are more likely to occur, which could be as simple as verbally reinforcing the behavior of hand raising to gain teacher attention while simultaneously making yelling out for attention ineffective (Lewis & Sugai, 1999; Sasso, Conroy, Stichter, & Fox, 2001). Specific functional behavior assessment procedures will be further detailed in Chapters Two and Three.

**Functional Analysis**

Functional analysis, a component of FBA, is a term used to describe the direct, systematic manipulation of antecedent and/or consequence event(s) that are related functionally to problem behavior (Horner, 1994; Sugai, Horner, Sprague, 1999). While functional analyses can be extended, usually in clinical settings, they are usually ”briefer” in school settings (Broussard & Northup, 1995). The purpose of a brief FA is to ascertain function or verify hypotheses of function that were developed as part of the FBA.
Specific functional analysis procedures will be further detailed in Chapters Two and Three.

**Brief Functional Analysis**

**Analog Analyses**

Analog assessment implies the creation of specific conditions during which variables are held constant, manipulated, and systematically presented in a counterbalanced sequence (Stichter, 2001). For the purposes of this paper, analog assessments are presumed to take place outside the natural classroom routine (Dunlap et al., 1993).

**Naturalistic Analyses**

Naturalistic assessments are conducted within the context of the natural, classroom environment. Antecedent and/or consequence variables are still manipulated, for the purpose of identifying the function of a student’s challenging behavior (Dunlap et al., 1993).

**Purpose of Study**

While FBA has been developed and researched in clinical settings as an effective strategy to identify interventions that both manage inappropriate behavior and teach appropriate replacement behavior, it is not yet clear whether FBA will prove to be as effective a technology in school settings that typically involve much less structure and much greater social complexity. One of the questions in need of expanded research is whether function-based interventions are indeed more efficacious than non-function-based interventions in terms of short-term, long-term, and generalized effectiveness, when compared to typical school interventions (Fox, Conroy, & Heckaman, 1998; Sasso, Conroy, Stichter, & Fox, 2001). The purpose of this study is to determine whether an
intervention based on the verified function of a behavior in a public school classroom is more efficacious than the typical or traditional intervention that is implemented without regard to function for students with challenging behaviors.
CHAPTER 2
REVIEW OF LITERATURE

This chapter first summarizes the research on FBA that has been conducted in clinical settings for students with severe cognitive and developmental disabilities. Next, the very limited research that has been conducted on FBA in school settings is presented and discussed; and brief Functional Analysis (FA) in school settings will be reviewed. Finally, research specifically targeting the efficacy of function-based interventions compared to typical, classroom management strategies is explored in depth.

Although comprehensively researched in clinical settings, FBA lacks an extensive research base in school settings (Fox, Conroy, & Heckaman, 1998; Sasso, Conroy, Stichter, & Fox, 2001), in part because school environments are complex and require more control of external variables than is typically feasible. Originally, applied behavior analysis researchers developed FBA to assist in creating interventions for persons with severe cognitive and/or developmental disabilities in clinical settings. More recently, FBA has been reported and detailed in school settings for students with EBD or who exhibit seriously challenging behavior. However, school settings are very different from clinical settings, as they are less controlled and typically contain many more students. In addition, classrooms generally are made up of complex and sometimes subtle social structures. Currently, the evidence in regard to FBA that is known in classroom settings has largely been the result of researcher rather than teacher application (Scott, Bucalos, Liaupsin, Nelson, Jolivette, & DeShea, 2004). Therefore, additional research is necessary to determine whether FBA in school settings can be as effective in developing successful
intervention plans in these more complex and subtle environments (Fox, Conroy, & Heckaman, 1998; Sasso, Conroy, Stichter, & Fox, 2001). The technical adequacy of FBA in school settings must be as carefully and methodically explored as it has been in clinical settings. Technical adequacy in this case refers to the reliability and validity of FBA in providing information that is useful in developing effective behavior intervention plans in typical public school classrooms (Gresham, 2003).

**Clinical Settings**

**Functional Behavioral Assessment Studies in the Clinic**

Clinical environments allow for a great deal of control over variables when conducting FBA. Historically, FBA has involved the gathering of behavioral data by direct and/or indirect means, hypothesizing the function of behavior, and testing the hypothesis via the manipulation of those identified variables (Iwata, 1994). Once testing validates the hypothesis, interventions are developed based on the function of the behavior and the student’s individual needs. These interventions typically involve the manipulation of the environment to both decrease the rate of problematic behavior and increase the rate of appropriate (i.e. replacement) behavior (Iwata, 1994).

In an early study using function as a determining factor of behavior, Iwata, Dorsey, Slifer, Bauman, & Richman (1982) evaluated the existence of functional relationships between self-injurious behavior (SIB) and setting events. Nine study participants between 18 months and 17 years of age had been diagnosed with developmental delays of varying degrees as well as mild to profound mental retardation. FBA and validated hypothesis testing was completed for eight of the nine participants, exposing them to four different experimental conditions: social disapproval, academic demand, unstructured play, and alone (no stimulus). For six of the eight subjects, functional analyses revealed
higher levels of SIB linked to one specific experimental condition. This process demonstrated a methodology for manipulating the environment to determine the effect of specific environmental conditions and behavior, thereby identifying function and suggesting the resulting intervention to effectively decrease the occurrence of SIB. By 1994, 152 single-subject analyses of SIB had been published. The data from these studies indicate that FBA and functional analysis have great utility not only in identifying the predictability and function of SIB, but also to guide selection of effective interventions (Iwata et al., 1994).

Cooper et al. in 1992 extended functional analysis from outpatient to school settings. In this study, subjects were two males (8 and 9 years old) educated in a special education resource classroom who were identified as having mild to borderline MR, but placement in special education classrooms was due to behavioral problems. Different conditions in the classroom were observed, studied, and manipulated over time, then analyzed. Afterward, an FA was conducted, away from the class and peers, to corroborate. The two were compared and they corresponded, but the extended condition (lasting 6 months) yielded more in-depth information from which intervention packages were constructed.

An early research effort that investigated the effectiveness of function-based interventions across settings was conducted by Repp and colleagues (Repp, Felce, & Barton, 1988). The three subjects, two females and one male, were 6 and 7 years of age and had been diagnosed with severe retardation. The setting was a special education classroom in a public school. FBAs, brief FAs, and testing of resulting interventions were implemented across two settings. The study design included an initial phase wherein
FBA and FA were conducted, and a second phase involving the implementation of a function-based intervention in one setting and a non-function-based intervention in a second setting. Finally, in a third phase they incorporated the implementation of the effective intervention (function-based) in both settings. Results indicate that basing an intervention on function of behavior was effective across settings and provided favorable behavioral outcomes for these subjects.

Through a broad research base, FBA has become a standardized process in clinical settings. Direct observation of behavior is measured and graphed and then, via visual inspection, data guide decisions as to what intervention will be chosen in accordance with the determined function. Further, Hagopian, Fisher, Thompson, Owen-DeSchryver, Iwata, & Wacker (1997) developed a set of criteria for visual inspection to increase interrater agreement, contributing to the standardization of FBA in clinical settings.

Functional Analysis Studies in the Clinic

Although the efficacy data for FBA in clinical settings is exceptionally strong, the process itself can be extremely time-consuming. A functional analysis often involves multiple sessions, which, although reasonable in the clinical environment, likely will not be reasonable in school settings, given the time and staffing constraints of that setting. In fact, of the 152 functional analysis studies, identified by Iwata et al. (1999), as many as 66 sessions were conducted per analysis. Few researchers have acknowledged the burden that such a procedure might place on professionals in other settings but some have worked to determine whether less intensive procedures might achieve the same results. Northup and colleagues (1991) developed a modified version of a lengthy analysis procedure used in clinical settings for outpatient evaluation of three individuals with severe mental retardation who demonstrated aggressive behavior. Their study
demonstrated that a relatively brief analysis lasting no more than 90 minutes could determine function as accurately as a lengthier analysis. By 1992, brief functional analyses had been utilized successfully in 79 outpatient cases (Derby et al., 1992). Verifying the 1991 Northup study, Derby et al. (1994), investigated the effects of extended versus brief functional analysis. These researchers established that brief functional analysis is a viable option for outpatient clinic settings (Wacker et al., 1994). Although these brief functional analyses were conducted with patients who demonstrated severe cognitive impairments, it has been suggested that this simplified procedure could be adapted for children of average intelligence who demonstrate problematic behaviors (Cooper et al., 1990). Functional analysis in this brief form has been adapted to school settings and for students who display problematic behavior. This is important because roughly 50% of school discipline referrals are generated by 5% of the student population (Sugai et al., 1999).

**School Settings**

**Functional Behavioral Assessment Studies in Schools**

In the past decade, researchers and educators have attempted to utilize FBAs in school settings, sometimes by simplifying the process (Horner, 1994). This simplified process, adapted to a naturalistic setting such as a school, typically has consisted of three basic steps: (1) development of a functional hypothesis through direct and/or indirect data gathering methods, (2) confirmation of that hypothesis by gathering formal baseline data, and (3) either the testing of the hypothesis by conducting a functional analysis (Repp, 1994) or development of an intervention based upon the hypothesis and using the outcomes as validation (Horner, 1994; Scott et al., 2004). One example of FBA in a school setting involved students with autism and successfully used the teachers to both
assess the behavior and implement intervention (Sasso et al., 1992). As is true of much of the research on FBA in schools, these students were severely disabled and did not participate in general education classrooms, but were being educated in special education settings, such as resource or self-contained classrooms.

Reviews of the literature on the use of FBA in school settings report a scarcity of studies involving students with problem behaviors (Dunlap & Childs, 1996; Heckaman, Conroy, Fox, & Chait, 2000; Kern, Hilt, & Gresham, 2004; Nelson, Roberts, Mathur, & Rutherford, Jr., 1999; Scott et al., 2004). Each of these reviews has a unique focus and altogether report more than 100 separate studies conducted over more than 20 years.

Dunlap and Childs (1996) reviewed the literature from 1980 to 1993 for studies involving students with EBD and found only nine out of a total of 113 studies that reported utilizing FBA in their methodology. Most of these occurred in self-contained, special education classrooms and only one study took place partially in a regular education setting. The authors excluded studies of academic performance, choosing to include only those studies focusing on behavior problems. The subjects ranged in age from 6 to 14 years old and the most common type of intervention was social skill instruction. In their review of these nine studies, the authors found no observable trends in terms of accelerating or decelerating use of FBA, type of subject, setting, or type of intervention.

Nelson and colleagues (1999) reviewed studies for students with EBD in school, clinic, and outpatient settings for evidence of external validity and cost benefits to usage of FBA. In all settings, they found 97 research studies between the years of 1989 and 1997. The breakdown of studies by subjects’ disabilities and settings is further evidence
of the paucity of research conducted in school settings with students having high incidence disabilities. Of 458 total subjects, only 53 were considered in the high incidence category of disabilities and only 23% of the FBAs were conducted in school settings. Only 3% of that total was conducted in regular education classrooms; the remainder occurred in special education classrooms. The authors’ search for cost effectiveness or benefits of FBA in the research yielded no positive results. In looking at external validity, three threats were common themes across the 97 studies: 1) a majority of the participants had low incidence disabilities, 2) most studies were conducted in clinical settings, and 3) all the FBAs were conducted by researchers. The authors’ conclusion was that FBAs in school settings for students with or at-risk for EBD needs further research in all areas.

A literature review of studies that explore the FBA process in school settings with students with or at risk for EBD was conducted by Kern and colleagues (Kern, Hilt, & Gresham, 2004). Twenty studies were found with a total of 43 participants who ranged in age from 4 to 14 years of age and had externalizing behaviors. The years under review were 1982-2003. Analysis revealed the most common methods of FBA were direct observation and interview. Also, the authors noted a total lack of FBA use with internalizing behaviors, extensive researcher involvement with the implementation of FBA, and wide variability in assessment duration.

Following up on this, Scott and colleagues (2004) conducted a targeted review of studies between 1995 and 2000 that utilized FBA in school settings for students with or at-risk of EBD, finding only 12 published research efforts fitting their criteria. After reviewing these studies, the authors concluded that the research base on FBA in schools
is inadequate, especially in general education classrooms. Of the 12 studies reviewed, only one was set in a general education classroom. Also, no single model of FBA emerged, as a wide range of FBA methodologies were documented. This supports results reported by a recent survey of researchers and teachers of FBA that found a large variance in the ways that FBA is being implemented (Scott, Meers, & Nelson, 2000). Before these issues of implementation of FBA in general education settings can be resolved, the fundamental question of validity must be empirically demonstrated.

Heckaman, Conroy, Fox, & Chait (2000) reviewed the literature closely associated with the question posed in this study, namely, is a behavioral intervention based on the function of a behavior more efficacious than one not based on function? The authors reviewed the literature occurring between the years 1991 and 1999, finding 22 studies researching FBA in those nine years for students with or at-risk of EBD. While the fact that this research base exists is encouraging, trends were not found in key areas; the methodologies used were inconsistent; assessment instruments and procedures varied; various combinations of direct and/or indirect measures were used; and no trends were uncovered as to when, how, or why specific interventions were employed. Thus, a single validated methodology for conducting FBA and developing interventions based on these assessments did not emerge.

The authors concluded from this review that research on FBA should focus on five areas. First, research should concentrate on generalization of behavior change, both by the student and the teacher, especially in regard to the intervention developed from FBA. In other words, research must look at whether FBA can produce valid results across settings, behaviors, and students. Second, research suggests that the function of behavior
may vary from setting to setting. Thus, it must be determined whether teachers will be able to apply FBA procedures with equal ease and success across the variety of settings involved in the typical school. Third, research should focus on a close examination of the link between the function derived from the FBA and the recommended intervention. That is, what steps delineate the process involved in progressing from assessment to function to intervention? Fourth, FBA is a procedure that takes time and effort. The question is - at what point is the decision made to move to more functional FBA processes and abandon more simple preventative strategies? Lastly, it remains unclear whether interventions based on FBA are more effective than traditional school discipline approaches (e.g., systems that provide for consequences generically imposed upon student without regard to individual circumstances). Logically, this final issue should take precedence over the first four. Until the effectiveness of interventions produced from FBA is established, questions regarding generalization, practicality, logistics, and timing are moot. Thus, this question sets the occasion for this dissertation study, which will directly explore the treatment validity of FBA in general education classroom settings by researching the efficaciousness of function-derived interventions in school settings.

**Brief Functional Analysis in School Settings**

Brief functional analysis (FA) has been utilized in school settings for students with both severe and mild disabilities and has been shown to effectively identify the function of behavior, leading to successful intervention. It was used in this study to verify the hypothesized functions of behaviors generated by the indirect and direct FBA procedures.

While functional assessment involves a set of procedures leading to the identification of the function of a behavior and from this, the selection of an intervention based on that function, functional analysis is a subcategory of the larger FA process and
necessitates the direct and systematic manipulation of variables thought to contribute to problem behavior. Analog conditions are often used to conduct such an analysis, and determine functional relationships between the behavior and the antecedents/consequences that control the behavior. Analog assessment involves creating specific conditions during which antecedents and consequences are held constant and specific variables suspected to directly affect the target behavior are systematically presented in a counterbalanced manner. Very low or high rates of a behavior can make it difficult to distinguish one analog condition from another (Stichter, 2001). Some researchers have used hypothesis-derived conditions instead of analog conditions to facilitate the use of brief FA in school settings (see Table 1).
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<td>6-9 yrs.</td>
<td>M</td>
<td>At-risk EBD</td>
<td>Classroom, incorporated into routine</td>
<td>✓</td>
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<td>M</td>
<td>DD</td>
<td>Classroom, not incorporated into routine</td>
<td>✓</td>
<td>Teacher FA in classroom setting compared favorably to analog assessments by experts</td>
</tr>
<tr>
<td>Cooper, Wacker, Thrusby, Plagmann, Harding, Millard et al.</td>
<td>1992</td>
<td>2</td>
<td>8-9 yrs.</td>
<td>M</td>
<td>Mild &amp; Borderline MR</td>
<td>Both, non-embedded classroom &amp; classroom, incorporated into routine</td>
<td>✓</td>
<td>Brief FA + descriptive procedures = effective interventions (teacher analysis)</td>
</tr>
<tr>
<td>Dunlap, Kern, de Perczel, Clarke, Wilson, Childs, et al.</td>
<td>1993</td>
<td>5</td>
<td>6-11 yrs.</td>
<td>4-M</td>
<td>EBD, SED</td>
<td>Classroom, incorporated into routine</td>
<td>✓</td>
<td>Brief FA + descriptive procedures = effective interventions</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Year</td>
<td>N</td>
<td>Age yrs.</td>
<td>Sex</td>
<td>ID</td>
<td>Setting</td>
<td>Analog</td>
<td>Hypothesis</td>
</tr>
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</tr>
<tr>
<td>Edwards, Magee, &amp; Ellis</td>
<td>2002</td>
<td>1</td>
<td>10 yrs.</td>
<td>M</td>
<td>ADHA, SED</td>
<td>Office near classroom</td>
<td>✓</td>
<td></td>
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<tr>
<td>Ellis, &amp; Magee</td>
<td>1999</td>
<td>3</td>
<td>6-10 yrs.</td>
<td>M</td>
<td>ADHA/bipolar, DD &amp; mild autism</td>
<td>Both, non-embedded classroom &amp; classroom, incorporated into routine</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Ervin, DuPaul, Kern, &amp; Friman</td>
<td>1998</td>
<td>2</td>
<td>13-14 yrs</td>
<td>M</td>
<td>ADHD, ODD</td>
<td>Classroom, incorporated into routine</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Lalli, Browder, Mace, &amp; Brown</td>
<td>1993</td>
<td>3</td>
<td>10-14 yrs</td>
<td>2-M 1-F</td>
<td>Severe &amp; profound MR</td>
<td>Classroom, incorporated into routine</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Magee &amp; Ellis</td>
<td>2000</td>
<td>2</td>
<td>7-8 yrs.</td>
<td>M</td>
<td>ADHD, mod. MR &amp; profound hearing loss</td>
<td>Unused classroom, not incorporated into routine</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Author(s)</td>
<td>Year</td>
<td>N</td>
<td>Age yrs.</td>
<td>Sex</td>
<td>ID</td>
<td>Setting</td>
<td>FA Conditions</td>
<td>Results</td>
</tr>
<tr>
<td>--------------------------------</td>
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<td>------------</td>
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<tr>
<td>Meyer</td>
<td>1999</td>
<td>4</td>
<td>6-8 yrs.</td>
<td>3-M</td>
<td>1-F</td>
<td>LD &amp; BD</td>
<td>Unused room, not incorporated into routine</td>
<td>Brief FA identified maintaining variable = effective interventions</td>
</tr>
<tr>
<td>Newcomer &amp; Lewis</td>
<td>2005</td>
<td>3</td>
<td>9-11 yrs.</td>
<td>2-M</td>
<td>1-F</td>
<td>OHI at-risk</td>
<td>Classroom, incorporated into routine</td>
<td>Brief FA+ descriptive procedures = effective interventions (teacher analysis)</td>
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<td>Noell, VanDerHeyden, Gatti, &amp; Whitemarsh</td>
<td>2001</td>
<td>3</td>
<td>3-5 yrs.</td>
<td>2-M</td>
<td>1-F</td>
<td>Language delay</td>
<td>Both, non-embedded classroom &amp; classroom, incorporated into routine</td>
<td>Brief FA based on Analogs = Effective interventions</td>
</tr>
<tr>
<td>Northup, Broussard, Jones, George, Vollmer, &amp; Herring</td>
<td>1995</td>
<td>3</td>
<td>7-9 yrs.</td>
<td>2-M</td>
<td>1-F</td>
<td>ADHD</td>
<td>Both, non-embedded classroom &amp; classroom, incorporated into routine</td>
<td>Brief FA based on analogs = Effective interventions</td>
</tr>
<tr>
<td>Northup, Wacker, Berg, Kelly, Sasso &amp; DeRand</td>
<td>1994</td>
<td>5</td>
<td>5-11 yrs.</td>
<td>1-M</td>
<td>4-F</td>
<td>Severe to profound MR</td>
<td>Classroom, incorporated into routine</td>
<td>Brief FA based on Analogs = Effective interventions (teacher analysis)</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Year</td>
<td>Subjects</td>
<td>FA Conditions</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>---------------------------------</td>
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</tr>
<tr>
<td>Repp, Felce, &amp; Barton</td>
<td>1988</td>
<td>N 3 6-7 yrs. 1-M 2-F Severe MR Classroom, incorporated into routine</td>
<td>✓</td>
<td>Brief FA+ descriptive procedures = effective interventions (expert analysis with teacher implement)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Sasso, Riemers, Cooper, Wacker, Berg, &amp; Steege</td>
<td>1992</td>
<td>N 2 7-13 yrs 1-M 1-F Autism Both, non-embedded classroom &amp; classroom, incorporated into routine</td>
<td>✓ ✓</td>
<td>Teacher FA in classroom setting compared favorably to analog assessments by experts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Umbreit</td>
<td>1995</td>
<td>N 1 5 yrs M Mild MR Classroom, not incorporated into routine</td>
<td>✓</td>
<td>Brief FA+ descriptive procedures = effective interventions (teacher analysis)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Umbreit</td>
<td>1995</td>
<td>N 1 8 yrs M ADHD Classroom, not incorporated into routine</td>
<td>✓</td>
<td>Brief FA+ descriptive procedures = effective interventions (teacher analysis)</td>
<td></td>
<td></td>
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</table>
Brief functional analyses have been conducted in school settings in a limited body of research. These studies fall into categories of analog and hypothesis derived conditions. Following is a review of this literature providing examples of both types.

**Analog Conditions**

Magee & Ellis (2000) included brief functional analysis in a study involving two elementary age students with severe disabilities. The researchers employed 10-minute sessions to evaluate analog conditions of alone, attention, play, and demand conditions. These conditions were conducted at a school but not integrated into classroom activities.

This study (Northup et al., 1994) evaluated the possibility of school staff conducting functional analyses and resulting interventions in actual classroom settings. Five subjects ranged in age from 5 to 11 years old in a self-contained special education classroom, each functioning in the severe to profound range of intellectual disability. After conducting an initial in-service training, researchers provided on-site technical assistance to school personnel working in FBA teaming situations. Brief functional analyses were conducted in classrooms using conditions lasting 10 minutes in duration. Conditions were created based on indirect FBA information, but analog conditions based on Iwata research were used, albeit only those deemed important from the indirect FBA information. Results suggest that trained school staff members could implement all procedures sufficiently when provided technical assistance. Additionally, brief functional analysis was found to be effective in identifying the function of the target behaviors and deriving interventions that maintained the replacement behaviors during the 18 months of this study.

Set in public schools, another study (Lalli, Browder, Mace, & Brown, 1993) used a behavioral consultation approach with three teachers of three students with severe to
profound MR to conduct descriptive analyses and test interventions using a reversal design to provide individualized support and tweaking of the intervention. Brief FAs were conducted and incorporated into the students’ classroom activities by their teachers before interventions were implemented. The authors used DRA (differential reinforcement of alternative behavior) to provide the presumed reinforcer for appropriate behavior.

In another study, the authors (Ervin, DuPaul, Kern, & Friman, 1998) state that as functional assessment moves from analog to applied settings, issues related to assessment, treatment integrity, and acceptability are of increasing importance and may impede progress. Also, teachers may be more willing to manipulate antecedent events than consequences. The purpose of this study was to assess the application of functional assessment including brief functional analysis for adolescents with ADHD and related behavioral difficulties in school settings. The school setting in this study was Boys Town, with class size from 7 to 12 students and a token economy management system in place. This study examined antecedent manipulations and found teachers less willing to manipulate consequences in a systematic manner. Teachers and staff performed FBAs and brief FAs with expert consultation. Results were positive for function-based interventions.

Another study was designed to extend functional analysis procedures into regular education classrooms for students considered at-risk for more restrictive placement due to disruptive classroom behavior (Broussard & Northup, 1995). The three subjects were three males between the ages of 6 and 9 years of age. Descriptive assessments yielded hypotheses, from which conditions were developed based on the occurrence or
nonoccurrence of the consequence associated with each hypothesis. The conditions were incorporated into the natural classroom routine, but were conducted by the investigator, who was introduced to the class as an aide. Three conditions were used: teacher attention, peer attention, and escape from academic tasks. During contingent and noncontingent teacher attention conditions, the student received disapproving comments following the target behavior and, conversely, was provided approving comments every 60 seconds, independent of student’s behavior. The peer attention conditions were conducted by providing access and no access to peers during academic tasks. The escape from academic tasks condition was conducted by varying the degree of difficulty of the tasks. Results indicated this use of brief FA brought about a decrease in the target behaviors during the contingency reversal conditions. The authors were successful in incorporating brief FA into regular education classroom activities that resulted in a decrease of disruptive behavior.

**Hypothesis Derived Conditions**

Another study evaluated the applicability of FBA and functional analysis with students described as EBD who were served in self-contained special education classrooms (Dunlap et al., 1993). All assessment procedures were developed and implemented within the students’ academic setting. Participants included four males, 10 or 11 years old in the 4th or 5th grade and one female, 6 years old in Kindergarten. The authors broke the experiment into two phases—hypothesis development and hypothesis testing, with several hypotheses being generated and performed per student. The brief FA was conducted by using a reversal design. That is, each hypothesis was broken down into two conditions—one in which the condition was associated with high levels of desirable behavior and the other in which the condition was associated with high levels of
undesirable behavior. For example, a high level of specific praise was tested one day and a low level of specific praise was tested the next day, all the while keeping the classroom activity constant. Results indicated a lowering of undesirable behavior.

An experimental analysis was conducted to provide a controlled way to confirm the hypothesis generated by the initial indirect FBA methods in a study by Newcomer and Lewis (2004). It consisted of a descriptive, single-case, alternating-treatment research design in which the order of introduction of treatments was randomized to control for sequential confounding or the possibility that the initial treatment phase could bias the results. Results for all three elementary age students indicated that function-based interventions were more effective than non-function-based interventions in causing a decrease in the problematic behaviors. The authors used a brief functional analysis to confirm the FBA generated hypothesis of function for each student.

**Studies Specific to Function-Based Interventions**

Treatment validity can be defined as the extent to which FBA generates data contributing to beneficial treatment outcomes. The assumption of treatment validity is that using FBA to match the intervention to the behavioral function will result in the most effective treatment. The FBA literature in school settings has not established a strong empirical base for validity in terms of the procedural components that are used to establish the operant function of behavior (Gresham, 2003). To date, only a few studies explore the efficacy of tying behavioral function either indirectly or directly to the intervention for students with or at-risk of EBD in a public school setting. These few studies will be reviewed forthwith.

Although FBA does not always involve the functional analysis component in school settings (Chandler & Dahlquist, 2002; Crone & Horner, 2003), Meyer (1999) was
able to incorporate functional analyses into a study involving antecedent events. At a school for children with LD and EBD, the principal referred four students of borderline to average range of intellectual ability in first and third grade for behavior problems. Experimental FA sessions were conducted in analog settings rather than the naturalistic setting of the classroom. Antecedent variables of attention and task difficulty were manipulated to measure their effect on off-task behavior. Using a multielement design, the researcher found that assessment of antecedent variables has value for students with mild disabilities. However, the experiment was not conducted in a natural setting and thus, generalization to the classroom was impossible to infer. Still, using a single subject methodology, the question of whether function is linked to intervention for students with mild behavioral disabilities was answered in the affirmative.

Schill, Kratochwill, and Elliot (1998) also investigated the question of whether a behavioral intervention is most effective when derived from function. They compared the utility of FBA to a standard behavior modification treatment package via a consultation model for preschool students in a Head Start program. In this model, consultation was provided to Head Start teachers by school psychology graduate students to assist in the management of students who displayed the highest rates of inappropriate behavior in the classrooms. While this study found no significant differences between the two groups in outcomes of treatment effects, social validity, or cost, it is important to note that the majority of the consultants expressed a preference for FBA, stating it to be more effective in producing the desired changes in client behavior and that it facilitated a more positive working relationship with consultees.
The authors offered three compelling explanations for this finding. First, the fact that functional analyses were not used in this model prior to the implementation of the intervention may have affected the results. Second, these students aged four and five years, qualify for the Head Start program by low socioeconomic status. The authors speculate that this population, by age and socioeconomic level, are most often reinforced by attention and thus, the behavior modification program, using strategies such as time-out, proved not to be very different from interventions that would be functionally indicated from an FBA. Third, treatment integrity may have been a factor in both conditions. In a consultation model in this setting, teachers have the responsibility to implement the intervention, but may not fully understand it. Similarly, teachers may be unable to implement the treatment as described by the consultant or communication between the two may be inaccurate. While this study did not reveal significant results, it did considerably extend the research in the area of this dissertation study, by comparing the effectiveness of function-based assessments to interventions based on behavior modification and, while uncertain, some of the behavior modification treatments may have inadvertently been based on the function of the behavior. This dissertation study intends to measure the effect of function-based interventions versus non-function based interventions while carefully controlling potentially confounding variables.

Two studies used the FBA process to evaluate the effectiveness of school strategies based on the need for attention and the need to escape or avoid instructional tasks (Noell, VanDerHeyden, Gatti, & Whitmarsh, 2001; Taylor & Miller, 1997). Noell and colleagues (2001) focused their study on how teacher attention and escape from instructional demands affected the compliance of pre-school students with speech and language delays
by using three types of FBA—indirect, descriptive, and analytic. While indirect and
descriptive methods of gathering data yielded beneficial results, the in-class functional
analysis had the most precise information. This was due, the authors felt, to the students
being tested in the same setting in which the behavior naturally occurs, but a downside to
this strategy was that teachers had to be trained to implement the manipulation phases
while managing the behavior of the rest of the class.

Taylor and Miller (1997) used FBA to answer the question of why timeout, a
typical classroom discipline strategy, works some of the time, but at other times seems to
increase undesirable behavior. Using analog assessment, the authors found timeout was
effective only when the function of the student’s behavior was to gain attention. If the
student’s behavioral function was to escape or avoid a classroom demand or unpleasant
situation, timeout served to increase the undesirable behavior. Both studies confirm that
knowledge of behavioral function can be used to select effective treatment strategies and
that common school discipline strategies are ineffective when used for all students
without regard to the function of their behavior.

For FBA to be properly and systematically utilized in a typical school setting for
students with behavioral problems, a fundamental question of validity must be directly
addressed. Namely, is an intervention based on the operant function of a targeted
behavior more successful than a behavioral intervention that is not based on function?
Several studies have demonstrated the validity of basing an intervention on the operant
function of a behavior without comparing directly the effects of a function-based
intervention to an intervention not based on the function of the inappropriate behavior.
Some were presented earlier in this chapter (see Brief Functional Analysis section). The remainder will now be discussed.

One study (Ellingson, Miltenberger, Stricker, Galensky, & Garlinghouse, 2000) used FBA, including descriptive and ABC observation procedures, to create function-derived interventions and compared them to non-function-based interventions using a brief reversal design. Subjects, two males and one female, were between the ages of 12 and 19 years and had been diagnosed as having severe to profound mental retardation. Teachers conducted the FBAs as well as the intervention implementation with expert assistance. The results reported were favorable for the greater effectiveness of an intervention based on behavioral function when compared to an intervention not based on function.

VanDerHeyden and colleagues (2001) evaluated a brief descriptive assessment conducted in a naturalistic setting for a group to identify naturally occurring, high frequency events that could serve as maintaining consequences for disruptive behavior. This study was conducted in preschool and involved students with speech/language delays. Interventions derived from their brief descriptive assessment were indicated and contra indicated by functional assessment. Results were positive for function-based whole group interventions suppressing disruptive behavior. Finding function indicated interventions more effective than those not based on the function of behaviors adds to the function related research base of FBA literature.

Lewis and Sugai (1996) conducted a study that investigated (a) the efficacy of using more than one source of data to form a hypothesis, (b) the value of using FBA and brief FA techniques with students of average or above level of intelligence but display
low intensity, high frequency problem behaviors, and (c) assessed the effects of manipulating teacher & peer attention on the occurrence of problem and appropriate behavior in general education settings. Results were positive for using FBA and brief FA procedures for students of average or above levels of intelligence who display problem behavior. Further, results indicated that teacher and peer attention could be manipulated to cause a decrease in problem behavior in regular education settings. The results of this study also shed light on the importance of using FBA and brief FA techniques in natural contexts, as peer and teacher attention contribute to the function of behavior and students cannot be isolated from these when testing for function.

The following two studies directly investigated the effectiveness of function-based interventions as contrasted to typical, but non-function-based interventions in a school setting and, thus, most closely approximate the research questions and methodology of this dissertation.

Newcomer and Lewis (2004) compared the effects of function-based interventions to non-function-based interventions for three elementary students with seriously challenging behaviors in regular education classrooms. These behaviors included aggression directed toward peers and teachers as well as off-task conduct during academic periods. Descriptive functional assessments generated function driven hypotheses. Experimental analyses consisting of manipulating antecedents and consequent variables confirmed the hypotheses using a single-case, alternating-treatment research design. The manipulations were developed for each student from their individual hypothesis and conducted in the existing regular education context. Data was collected during direct observation probes using a 10-second partial interval data collection system.
When the behavioral function was established and verified through naturalistic functional analysis, the relative effectiveness of function-based interventions was compared to non-function-based interventions using a multiple baseline across participants. An example of one function-derived intervention based on an escape from peers’ function was to teach the student a replacement skill to be used to appropriately avoid peers and to precorrect when the student entered a setting likely to cause him to exhibit the undesirable behavior. For this student, the non-function-based intervention was based on a typical classroom strategy of implementing an individual reinforcement system. Results for all three students indicated that function-based interventions were more effective than non-function-based interventions in causing a decrease in the problematic behaviors. However, this study is limited in two respects. First, the function-based intervention was always preceded by the non-function-based intervention and therefore did not control for order of treatment effects. Second, interventions often were antecedent rather than consequence-based, meaning that they were not necessarily a true test of function.

Ingram, Lewis-Palmer, & Sugai (2005) also measured the effect of basing intervention on function on problem behaviors in general education classrooms, but with two middle school students. The study was designed to compare the effects of a function-based intervention to an intervention that was based on principles of behavior but not function. The authors controlled for order effects of treatment by counterbalancing the two treatments between the two subjects. The interventions were based on traditional FBAs, but did not verify the function through a functional analysis, instead verifying function through the use of an expert rating system. The authors compared the function and non-function derived interventions using a single-subject withdrawal design. Results
concurred with Newcomer and Lewis (2004), also indicating function-based intervention to be more effective than non-function-based interventions in general education settings for students exhibiting chronically challenging behaviors. However, this study is limited by the lack of functional analyses to verify the behavioral hypotheses obtained from the descriptive assessments.

This dissertation study seeks to extend the research of the last two studies discussed by conducting FBAs that combine the functional analysis component to validate the hypotheses with a counterbalanced design to control for treatment effects. Such a study provides a strong methodology for comparing treatment effects as well as information concerning the validity of this integral component of FBA. Until this question of validity is addressed, the use of FBA in school settings is unproven by scientific measures.
CHAPTER 3
METHOD

This chapter describes the processes and strategies that were used to conduct the study, which compares treatment effects of interventions, based on non-function-indicated intervention strategies, to those that are function-indicated through the use of functional behavioral assessments (FBA), with function verified by brief functional analysis (FA). First, the participants and setting are described and the criteria for the selection of participants are presented. Second, the dependant and independent variables are identified and described, including procedures for data collection from direct observation of the target behaviors and interobserver agreement. Next, experimental procedures are presented in two phases. The first phase consists of two components, the first identifying specific problem behaviors and generating hypotheses regarding the possible functions of those problem behaviors. The second component of phase one describes the brief functional analyses that were used to confirm the hypotheses via experimental manipulations. These procedures were conducted in order to verify function and thus identify both functionally logical and illogical treatment strategies. The second phase compares student behavioral outcomes between the logical and illogical interventions. Within this discussion, the specific research design is reported and described in detail. Finally, methods that insure treatment fidelity and social validity are delineated. As a first step, Internal Review Board (IRB) approval was sought prior to the commencement of this study and after deliberation, the IRB ruled this experiment did not need their approval, as FBA; mandated by the 1997 Reauthorization of the Individuals
with Disabilities Act (IDEA) and the participants recruited for this study had been identified as requiring this assessment (see Appendix A). Further, all interventions are typical of classroom behavior management strategies in public school settings.

**Participants and Setting**

**Setting**

This study took place in an elementary school in a small city in the Southeastern part of the United States. The school had effectively implemented school-wide systems of Positive Behavior Support (PBS) at the universal level (Lewis & Sugai, 1999) as assessed by an 80% overall fidelity score and 80% teaching score (i.e., 80% of PBS identified effective school-wide instruction procedures were in place) on the School-wide Evaluation Tool (SET) (see Appendix B). The SET is a research assessment and evaluation instrument used to measure fidelity of implementation of school-wide PBS systems over time. Critical elements measured include the defining and teaching of school-wide expectations, the creating of systems for reinforcing appropriate behaviors, responding to behavioral violations, and the monitoring and evaluation of progress (www.pbis.org/tools.htm). All observation sessions for each subject occurred in a special education resource classroom during naturalistic conditions in which the target behaviors were most and least likely to happen.

**Participants**

**Criteria**

Participants in this study were initially identified from disciplinary referral information at the school-wide level (Sugai et al., 1999). Although an indirect measure, office discipline referrals provide an index of student misbehavior that extends across all adults that come into contact with an individual student in the school setting and therefore
are reflective of that student’s inappropriate behavior (Sugai, Sprague, Horner, & Walker, 2000). Students falling at or above the 95th percentile in terms of number of office discipline referrals comprised the initial pool of possible participants. From this pool, teachers recommended students for inclusion in the study based on prior special education testing. Chronically elevated rates of inappropriate behavior and prior identification as a child with special needs was used as a second level criterion for inclusion.

Teachers of students identified at this level were contacted and questioned to verbally confirm that each student’s behavior impeded his or her own or their classmates’ learning progress, thus rendering them at-risk for academic or social failure. Finally, informal observations of the potential participants by the first author demonstrated that problem behavior did, indeed, corroborate the teacher nomination. Students were selected from general education classrooms or special education resource classrooms in third, fourth, or fifth grade and had either been referred by their teacher for placement or were currently being served in special education. Gender and ethnicity were not determining factors for inclusion in this study. The first four students meeting the criteria, two boys and two girls, were selected as participants.

**Participant Descriptions**

“Julie” was an 11-year-old girl in third grade. Having repeated first and third grades, she had been identified as having a learning disability (LD) in both Math and Reading. Consequently she spent most of her instructional time in the school special education resource classroom for third, fourth, and fifth grades. Data gathered from office discipline referrals indicated Julie had high rates of noncompliant behavior, resulting in many in-school suspensions. This student’s problem behaviors had been addressed in
several ways by the school. Universal PBS had provided consistent implementation and reinforcement of three positively stated school rules (respect self, respect others, and respect property). The student body as a whole, including this student, had been taught the rules directly as well as informed of the reinforcement procedures. Further, individual classroom routines, including behavioral expectations, had been demonstrated to all students in this classroom. An individual behavior plan had been created for this subject including strategies for reinforcing desired behavior. However, these behavior plans had not worked for this student, possibly because reinforcement was either insufficient in strength or the schedule was too lean to maintain behavior. Reinforcers are most potent when delivered immediately following the behavior being reinforced and must be of value to the person being reinforced (Skinner, 1953).

“Amy” was a 10 year old girl and in the third grade for the second year. She had been identified as LD in Reading and spent only reading instructional time in the school special education resource classroom for third, fourth, and fifth grades, spending the remainder of her day in a regular education third grade classroom. Amy’s problem behaviors included noncompliance to teacher requests and refusal to complete academic tasks. She had also been involved in school-wide application of PBS in the year preceding the study, had received classroom instruction on appropriate forms of behavior, and had an individualized behavior plan that provided weekly tangible reinforcement for appropriate classroom behavior - which had been implemented without success.

“Brian” was a nine year old boy and in the third grade. He could meet academic grade level expectations, but the high rates of his off-task behavior precluded participation in regular education classroom learning activities. He spent all day in the
special education resource classroom for third, fourth, and fifth grades, except for physical education class and lunch. He, too, had been in a school involved in school-wide positive behavior supports and had worked under numerous behavior plans. Some of these behavior plans had worked for Brian, but only for short periods of time.

“Barry” was an 11 year old boy and in the fifth grade. He had been identified as having mild mental retardation (MR). He read at a first grade level and his math skills were at a second grade level. Data from Barry’s office discipline referrals show that his problem behaviors included excessive verbalizations and off-task behavior. He had transferred to his current school during the year the study was implemented, but records indicate a history of problem behaviors and that his prior school employed school-wide positive behavior supports.

**Target Behaviors**

Target behaviors were identified by the Request for Assistance Form (Crone & Horner, 2003) (see Appendix C) and the Functional Assessment Checklist for Teachers and Staff (FACTS) (Crone & Horner, 2003) (see Appendix D). These forms were completed jointly by the researcher and teacher for each participant in an interview format which was semi-structured and designed to identify 1) times that problem behavior are most and least likely to occur, 2) antecedents that are associated with incidences of problem behavior, 3) consequences that maintain occurrences of target behaviors, 4) setting events, such as transition periods or the behavior of peers or teachers that have association with occasions of target behaviors, 5) response classes (i.e. related behaviors) that serve the same or similar functions, and 6) specific intervention recommendations (Crone & Horner, 2003).
Based on interview results, direct observations were used to verify times when and locations under which problematic behaviors were most and least likely to occur. The first author conducted these observations, monitoring students using an ABC Form (Crone & Horner, 2003) (see Appendix E). This method of data collection identifies predictable chains of antecedents, behaviors, and consequences in order to gain an understanding of the context and environment surrounding the target behavior.

Julie and Amy’s target behaviors were defined as being off-task as evidenced by talking to a specific peer instead of attending to academic tasks or teacher instruction. Julie was Amy’s specific peer and Amy was Julie’s specific peer. Brian’s target behavior was operationally defined as any inappropriate response to teacher mands indicated by negative verbal or facial reaction followed by either compliance or noncompliance. Barry’s target, off-task behavior was operationally defined as 1) not working on task as evidenced by any off-task interaction with teacher or peers or doing nothing on task for more than 3 seconds, 2) staring away from the activity for more than 3 seconds, or 3) playing with non-materials or related materials but not in an intended manner (such pencil tapping or drawing).

Replacement Behaviors

The researcher and each student’s special education resource teacher operationally defined replacement behaviors for each student. Julie and Amy’s replacement behavior was on-task during instructional and independent academic work periods and was defined as attending to academic task during specified periods without engaging each with the other. Brian’s replacement behavior was compliance to teacher mands, which was operationally defined as complying to teacher requests with socially appropriate facial expression and body language. Barry’s replacement behavior was on-task, defined as
working quietly on independent academic assignments. Table 2 gives further information on the setting, target behavior, and replacement behavior for each subject.

**Process**

Two phases were necessary to complete the identification process of finding the function of each participant’s target behavior. In phase one, FBA was conducted for each participant, followed by a brief FA to confirm the hypothesized behavioral function.

**Table 2 Subjects’ Target and Replacement Behaviors**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Setting</th>
<th>Target Behavior</th>
<th>Replacement Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Julie</td>
<td>Independent academic activities &amp; small group instructional periods</td>
<td>Off-task—not attending to academic tasks</td>
<td>On-task—engaging in academic tasks</td>
</tr>
<tr>
<td>Amy</td>
<td>Independent academic activities &amp; small group instructional periods</td>
<td>Off-task—not attending to academic tasks</td>
<td>On-task—engaging in academic tasks</td>
</tr>
<tr>
<td>Brian</td>
<td>Instructional periods</td>
<td>Noncompliance to teacher mands</td>
<td>Compliance to teacher mands</td>
</tr>
<tr>
<td>Barry</td>
<td>Independent academic activity</td>
<td>Off-task Excessive, loud verbalizations</td>
<td>On-task Working quietly</td>
</tr>
</tbody>
</table>

**Functional Behavior Assessment**

An FBA was conducted on each student, during which both direct and indirect methods of gathering data were utilized (Chandler & Dahlquist, 2002; Crone & Horner, 2003; Kerr & Nelson, 2002). Indirect methods for gathering data included structured interviews with teachers, other school personnel, and parents, as well as a review of academic performance, attendance, discipline records, and medical history. Gathering direct data included observation of the student in natural settings, was as simple as an informal ABC (antecedent, behavior, and consequence) evaluation, but also included an assessment and analysis of noted behaviors, predictors, perceived functions, and actual consequences (Crone & Horner, 2003; O’Neill et al., 1997). The outcome of these FBAs was a testable hypothesis of function of the target behavior for each student.
Brief Functional Analysis

After hypotheses were generated, brief functional analysis consisting of individualized conditions was executed for each study participant (Dunlap, et al., 1993). Julie, Amy, and Barry’s responses were manually recorded using 10-second partial interval recording procedure and graphed for evaluation (Kazdin, 1982). Brian’s responses were manually recorded using an opportunity to respond procedure, as his target behavior was dependent upon teacher initiation (Kazdin, 1982). The steps for completion of the brief FA included: 1) an operational definition of target behavior, 2) measurement of the behavior in a reliable manner, and 3) identification of structured classroom activities to best serve as functional analysis conditions. This process resulted in the verification of the hypothesized behavioral function, which was either access or escape/avoidance in nature.

Direct Observations of Target Behavior

For all students, data on targeted behavior was collected via direct observation. This data was used to identify the function of all target behaviors, as well as to compare the effectiveness of both function-indicated and non-function-indicated interventions in phase two of the study.

**ABC observation.** Direct observations were conducted by noting antecedents, behaviors, and consequences of students' actions in typical classroom situations where problem behaviors were most and least likely to occur and recorded on the ABC form (see Appendix E). Then ABC forms were analyzed to identify predictable characteristics of behavior.

**Partial interval recording.** Occurrences of target behaviors were marked in 10-second intervals using an author-created form (see Appendix F). Using this system,
behavior was coded for any interval if it occurred at any time. The metric was calculated as “percent of intervals in which behavior occurred” by dividing number of positive intervals by the total number of intervals observed. The total duration of each observation session was 10 minutes. Julie, Amy, and Barry were observed using this method of data collection.

**Opportunities to respond recording.** Brian’s target behavior was dependent on teacher initiation, thus data was gathered for durations of 10 minutes using an author-created controlled presentation form that classified his responses by compliant, non-compliant, or compliant within five seconds but accompanied by an inappropriate verbal or facial response (see Appendix G). Each time that the teacher provided the initiation, data was coded as to whether he did or did not engage in the replacement behavior. The metric was calculated as “percent of opportunities in which the replacement behavior was used” by dividing all positive instances of the replacement behavior by the total number of opportunities.

**Interobserver Reliability**

Although the first author collected behavioral data during both parts of the experiment, a second observer independently collected data at randomly specified times to corroborate the accuracy of the data for interobserver reliability (Kazdin, 1982). Interobserver agreement (IOA) was collected across 24% to 75% of all observation sessions and was scheduled at phase changes during the experiment (Kazdin, 1982). Prior to beginning the observation procedure, the primary researcher along with the student’s classroom teacher operationally defined behaviors, and the observer was thoroughly trained in recording the defined behavior according to the definitions of both interval recording and opportunities to respond protocol (Kazdin, 1982). Traditionally, agreement
rate should be at or above 80%, which reflects stability in measurement (Kazdin, 1982), and 80% was the criteria used in this study. Agreement ranged from 82% to 100% during each period it was gathered. IOA is calculated by dividing total number of agreements by total agreements plus disagreements and multiplying the total by one hundred (Kazdin, 1982). Strict adherence to IOA procedures helps to establish reliability measurement.

**Social Validity**

The social validity of this experiment was assessed at the end of the study. Teachers were asked to orally detail the acceptability of the project in terms of time and ease of implementation in relation to its success for designing behavioral improvement plans for students who struggle with inappropriate classroom behavior. Responses were recorded in field notes by the researcher.

**Experimental Procedures**

In phase two of the experiment, an intervention based on the indicated function as well as a contra-indicated intervention was generated for each student. Each intervention was a typical classroom strategy and either matched the function of the target behavior or was chosen as a contra-indicated intervention because it did not match the targeted behavioral function. As the interventions were implemented, observations were monitored continuously to measure success of intervention. The author created data gathering forms similar to the brief FA form for Julie, Amy, and Barry (see Appendix H) and Brian (see Appendix I).

**Intervention plans**

For each student, a behavior plan was created based upon the function of the targeted behavior. Replacement behaviors were identified for each participant by the author and the participant’s teacher and included appropriate social actions or on task
behaviors (see Table 3). Two of the four subjects, chosen by a random process, were presented with a function-based intervention, which was then withdrawn and followed by a typical but contra-indicated intervention. The other two subjects received the counterbalanced experimental condition, which began with the introduction of a typical but contra-indicated intervention, followed by an intervention implemented that is based on the function of the targeted behavior (See Table 3). During this entire process, data was being gathered and continuously graphed according to single-subject design protocol to insure stability of data before commencing the treatment phases. These data are presented in Chapter Four.

**Functionally indicated interventions.** The function of Julie’s target behavior was identified through the brief FA process as access to a specific peer. The specific peer was Amy, whose function of target behavior was also identified as access to a specific peer. Amy’s specific peer was Julie. These girls were “best friends”. As each of these participants’ target behavior, identified function, and subsequent interventions involved the other, all brief FA conditions and subsequent interventions, along with the ensuing direct observations, were conducted conjointly. Julie and Amy’s functionally indicated intervention was to reinforce on-task behavior by giving them break time to spend together, contingent upon their attending to the teacher during instructional activities and academic tasks. This intervention was selected to encourage appropriate classroom behavior as was deemed functionally indicated because function (access to peer) was provided contingent upon desired replacement behavior.

Brian’s brief FA indicated that his target behavior was maintained by access to teacher attention. Brian’s functionally indicated intervention was frequent verbal
encouragement from his teacher and praise for appropriate behavior. This intervention was deemed functionally indicated because it allowed access to teacher attention at suitable times, contingent upon replacement behavior.

The function of Barry’s target behavior was identified by brief FA as escape from difficult academic tasks. His functionally indicated intervention involved allowing him to escape contingent on completing tasks in the form of “B Passes”. Created by the author, these passes were printed on magnets that the teacher controlled from the chalkboard and presented to Barry as he worked at academic tasks. Barry opted when to spend the earned passes, but had to possess two passes to spend one. This system encouraged both Barry and his teacher to continue the intervention and was deemed functional because it allowed escape from task contingent upon replacement behavior. Table 3 summarized functionally based interventions for each participant.

**Functionally contra-indicated interventions.** Contra-indicated interventions are typical of classroom environments, yet are not functionally indicated by the FBA and brief FA conducted for each student. Julie and Amy’s contra-indicated intervention involved verbal prompts and reprimands delivered by the teacher for off-task behavior. This is deemed functionally contra-indicated because teacher attention is different functionally from specific peer attention and an intervention based on the function of escape was not acceptable in their classroom environment. Brian’s contra-indicated intervention was functionally aligned to a DRO condition, which was extinction or planned ignoring by the teacher. This is deemed to be contra-indicated because replacement behavior was effectively put on extinction under these circumstances. Barry’s contra-indicated intervention was aligned with the function of attention, which
was increased teacher attention in the form of verbal prompts and reprimands. This intervention was deemed contra-indicated because it did not allow the function of escaping task even when the replacement behavior occurred. Interventions based on both the functionally indicated behavior as well as the non-functionally indicated behaviors are listed in Table 3.

Table 3 Subjects’ Functions & Interventions

<table>
<thead>
<tr>
<th>Subject</th>
<th>Function indicated by Brief FA</th>
<th>Function-indicated Intervention</th>
<th>Non-function-indicated Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Julie</td>
<td>Access to a specific peer’s attention</td>
<td>Allow access in the form of earned breaks</td>
<td>Access to teacher attention (verbal prompts &amp; reprimands)</td>
</tr>
<tr>
<td>Amy</td>
<td>Access to a specific peer’s attention</td>
<td>Allow access in the form of earned breaks</td>
<td>Access to teacher attention (verbal prompts &amp; reprimands)</td>
</tr>
<tr>
<td>Brian</td>
<td>Access to teacher attention</td>
<td>Teacher attention in the form of encouraging verbal comments</td>
<td>Planned ignoring by teacher</td>
</tr>
<tr>
<td>Barry</td>
<td>Escape a difficult academic task</td>
<td>Allow escape in the form of earned passes</td>
<td>Increased teacher attention (verbal prompts &amp; reprimands)</td>
</tr>
</tbody>
</table>

**Experimental Design**

This study was designed to assess the treatment validity of FBA by comparing the effectiveness of an intervention based on the function of a behavior as identified using FBA to an intervention based on principles of behavior modification but without consideration of function. A single-case alternating treatment research design was used during the functional analysis component of this study to validate the functional hypothesis generated by the FBA for each student’s targeted behaviors. Once the function was satisfactorily established, an alternating treatments single-case design was used to compare the efficacy of the two treatments (Tawney & Gast, 1984). An alternating treatments design was chosen because
problem behaviors exhibited by the subjects in this study generally did not occur at low-frequency rates in the classroom. Further, several response opportunities existed for subjects to demonstrate the problem behavior, the interventions were expected to produce immediate effects on the problem behavior, and carryover effect were not anticipated. Additionally, an alternating treatments design allows for the implementation, comparison, and evaluation of the intervention/treatment when baselines are unstable, and comparisons can be observed within a relatively short period of time (Kazdin, 1982). The two treatments were counterbalanced, with two students receiving the function-based intervention first, followed by the non-function-based intervention, while the other two students received the same two types of treatments in reverse order (Tawney & Gast, 1984). Counterbalancing controlled for order effect of the two types of treatments. Although the alternating treatments design avoids order effects, the threat of multiple treatment interference cannot be avoided. Therefore, the possibility still exists that the effect of each treatment is influenced by its juxtaposition against the other so that the level of data for the target behaviors was different from what would have been obtained if each treatment could have been presented in isolation (Kazdin, 1982).

**Treatment Fidelity**

The fidelity of implementation of these experimental conditions was crucial to the integrity of this project. A task analysis providing the teacher with the brief FA condition that was used during the different experimental phases to aid in consistency of implementation. Also, teachers were furnished with checklists that served as prompts to insure consistency during the treatment implementation process. Thus, treatment fidelity was constantly monitored during the course of this study.
CHAPTER 4
RESULTS

The purpose of this chapter is to report the data gathered in the course of the study in both narrative and visual/graphic form.

The narrative reporting data from experimental procedures is presented by individual participants in two phases. The first phase reports data generated by the FBA and brief FA components of the study while the second phase reports data gathered during the comparison of functionally indicated and non-indicated interventions that were developed based on functions identified in the first phase. Data are reported as percentage in order to standardize and allow for more direct comparisons across individuals. For all data, analyses are made in consideration of trend, stability and variability, both within and across conditions (Tawney & Gast, 1984). Trend direction (i.e., slope) and stability are reported using the freehand method (Bailey, 1984) that refers to trend lines as lines of progress.

Each of the four study subjects is represented by two graphs, one of brief FA data and the other of the data generated by the experimental comparison of interventions. Eight graphs of the data collected in this study are presented concurrent with the narrative description of results for each phase by student. For Julie, Amy, and Barry, data are reported as percent of intervals in which off task behavior was observed. Brian’s data is reports as the percentage of opportunities in which he positively complied with teacher requests. Therefore, high numbers on the graphs represent high rates of negative behavior for Julie, Amy, and Barry but represent high levels of positive behavior for Brian.
The visual analysis of single subject data by graphing is advantageous for several reasons (Tawney & Gast, 1984). First, it is an effective method to evaluate data of individuals or small groups. Second, graphing enables data to be collected and analyzed continuously, which allows the researcher the opportunity to make informed decisions concerning the adjustment of interventions. Thirdly, graphing is tool that allows the researcher to focus on emerging data patterns, allowing the promotion of individualized instruction. Further, graphing data permits the possible discovery of serendipitous findings. Lastly, the graph as visual representation of data provides the researcher a means of accurately interpreting data, as well as a standard format allowing others to reliably analyze the results.

In this study, data are represented on a semi-logarithmic ordinate scale. This scale is based on ratio, rather than absolute interval values, allowing a more reliable focus on relative changes in data or behavior patterns, especially when the research is focused on comparing high to low rates of behavior such as in this study (White & Haring, 1980). In addition, semilog has been shown to improve interrater agreement during visual analysis as well as more conservative ratings of significance (Bailey, 1984).

Julie

Phase One

FBA

Julie’s FBA was conducted using the Request for Assistance Form (Crone & Horner, 2003), the Functional Assessment Checklist for Teachers and Staff (Crone & Horner, 2003), a records review of academic performance, attendance, discipline referrals, and medical history, and observations in natural settings using the ABC Form (Crone & Horner, 2003), including likely times in which problem behaviors were most
and least likely to occur. This process resulted in the identification of off-task behavior during periods of academic task activities or when the classroom teacher was providing instruction. Thus, Julie’s target behavior was operationally defined as off-task, as evidenced by talking or gesturing to a peer or looking away from academic tasks or her teacher for five or more seconds during class periods when attention to academic tasks or teacher was required.

**Brief FA**

As a result of the FBA, the hypothesized function of Julie’s target behavior was identified as access to attention from a specific peer, who was identified as Amy (also a subject of the study). These two girls were best friends who only saw one another during this special education resource classroom. In order to avoid confounding results from the two subjects, the brief FA was conducted conjointly for each subject. However, conditions were established to control variables related directly to the hypothesis and results are reported separately. During the brief FA for Julie access to the specific peer, limited access to the specific peer, and a third condition that provided her access to a non-specific peer were alternated – while holding setting, activities, and teacher interaction constant. Data gathered across these conditions confirmed the validity of the hypothesized function as access to specific peer attention. Each instance of access to this specific peer was associated with moderate levels of off-task behavior (mean = 24%) while conditions in which access to specific peer was limited showed a low level of off-task behavior (mean = 8%). To be certain that function was access to this specific peer, a condition allowing access to non-specific peer was juxtaposed and revealed a level only slightly higher than limited access to specific peer (15%) – still far below what was observed during access to specific peer conditions. This data shows a clear differentiation
between the brief FA conditions and serves to verify the preliminary hypothesis of access to specific peer attention. Brief FA data for Julie are presented in Figure 1.

![Julie's Brief Functional Analysis](image)

Figure 1. Brief FA Results for Julie

**Phase Two**

In the experimental phase, two interventions were identified, one indicated by function and the other not indicated by function, yet typical of classroom-based behavioral intervention in an average classroom. Julie’s functionally indicated intervention was the opportunity to earn break time to spend with her specific peer, contingent upon attending to academic tasks and listening to the teacher during instructional times (i.e., on task behavior). The non-functionally indicated intervention involved access to teacher attention in the form of verbal prompts and reprimands. Under these conditions the teacher simply prompted Julie back to work when she was off task.
but did not allow her the opportunity to access her preferred peer. During baseline no special interventions were implemented and data closely mirrored levels collected during the access to specific peer condition in the brief FA (mean = 21.67%), and with an increasing trend. In Julie’s case, the non-functionally indicated intervention was implemented first and was associated with a continuation of the increasing trend of off task behavior (mean = 27.67%) that remained highly stable. Next, the functionally indicated intervention was introduced and was associated with an immediate drop in the level of off task behavior (mean = 12.75%) and a decreasing trend. This data showed some degree of variability but still is calculated in the stable range of 10%. When the non-functionally indicated intervention was reintroduced, off task behavior again increased immediately to a new high level (mean = 49.3%) and with a slightly increasing trend. The reintroduction of the functionally indicated intervention was associated with a second immediate and even more pronounced decrease in off task behavior (mean = 1.6%) that hit 0% in the final trial. As a final step one week after all sessions had ended, a maintenance condition was introduced wherein functionally indicated intervention was reintroduced to assess whether it would maintain. This resulted in continued low rates of off task behavior at 3%. These data demonstrate a functional relationship between the functionally indicated intervention and Julie’s behavior, and a lack of relationship between the non-functionally indicated intervention and off task behavior. Figure 2 presents a graphic display of the results of this experimental analysis. In summary the functionally indicated intervention consistently and repeatedly produced more positive results than did the non-indicated intervention.
Figure 2. Results of Experimental Analysis for Julie

**Amy**

**Phase One**

**FBA**

Amy’s FBA was conducted using the Request for Assistance Form (Crone & Horner, 2003), the Functional Assessment Checklist for Teachers and Staff (Crone & Horner, 2003), a records review of academic performance, attendance, discipline referrals, and medical history, and observations in natural settings using the ABC Form (Crone & Horner, 2003), including likely times problem behaviors were most and least likely to occur. This process resulted in the identification of off-task behavior during periods of academic task activities or when the classroom teacher was providing instruction. Amy’s target behavior was operationally defined as off-task, as evidenced by talking or gesturing to a peer or looking away from academic tasks or her teacher for five
or more seconds during class periods when attention to academic tasks or the teacher was required.

**Brief FA**

As a result of the FBA, the hypothesized function of Amy’s target behavior was identified as access to attention from a specific peer, who was identified as Julie (also a subject of the study). Conditions were established to control variables related directly to the hypothesis. During the brief FA for Amy access to the specific peer, limited access to the specific peer, and a third condition that provided her access to a non-specific peer were alternated - while holding setting, activities, and teacher interaction constant. Data gathered during the conditions confirmed the validity of the hypothesized function as access to specific peer attention. Each instance of access to this specific peer was associated with moderate levels of off task behavior (mean = 20%) while conditions in which access to specific peer was limited showed a lower level of off task behavior (mean = 6%). To be certain that function was access to this specific peer, a condition allowing access to non-specific peer was juxtaposed and revealed a level only slightly higher than limited access to specific peer (8%) – still below what was observed during access to specific peer conditions. This data shows a clear differentiation between the brief FA conditions and serves to verify the preliminary hypothesis of access to specific peer attention. Brief FA data for Amy are presented in Figure 3.
Phase Two

In the experimental phase, two interventions were identified, one indicated by function and the other not indicated by function, yet typical of classroom-based behavioral intervention in an average classroom. Amy’s functionally indicated intervention was the opportunity to earn break time to spend with her specific peer, contingent upon attending to academic tasks and listening to the teacher during instructional times (i.e., on task). The non-functionally indicated intervention involved teacher attention in the form of verbal prompts and reprimands. Under these conditions the teacher simply prompted Julie back to work when she was off task but did not allow the opportunity to access her preferred peer. During baseline no special interventions were implemented and data closely mirrored levels collected during the access to specific
peer condition in the brief FA (mean = 17.33%), and with an increasing trend. In Amy’s case, the functionally indicated intervention was implemented first and was associated a continuation of the increasing trend of off task behavior (mean = 20%) that remained highly stable. Next, the functionally indicated intervention was introduced and was associated with an immediate drop in the level of off task behavior (mean = 6.25%). This data was more volatile, warranting the collection of an additional data point to assure adequate stability. When the non-functionally indicated intervention was reintroduced, off task behavior again increased immediately to a new high level (mean = 41.6%). The reintroduction of the functionally indicated intervention was associated with a second immediate and even more pronounced decrease in off task behavior (mean = 1.6%). As a final step one week after all sessions had ended, a maintenance condition was introduced wherein functionally indicated intervention was reintroduced to assess whether it would maintain. This resulted in no observed instances of off task behavior during the final trial. These data demonstrate a functional relationship between the functionally indicated intervention and Amy’s behavior. Figure 4 presents a graphic display of the results of this experimental analysis. In summary, the functionally indicated intervention consistently and repeatedly produced more positive results than did the non-indicated intervention.
Figure 4. Results of Experimental Analysis for Amy

**Brian**

**Phase One**

**FBA**

The FBA was conducted for Brian using the Request for Assistance Form (Crone & Horner, 2003), the Functional Assessment Checklist for Teachers and Staff (Crone & Horner, 2003), a records review of academic performance, attendance, discipline referrals, and medical history, and observations in natural settings using the ABC Form (Crone & Horner, 2003), including likely times problem behaviors were most and least likely to occur. This process resulted in the identification of a target behavior of non-compliant behavior to teacher requests. This target behavior was operationally defined as inappropriate response to teacher mands, as evidenced by negative verbal or facial or
gesture reaction followed by either compliance or non-compliance. Brian’s teacher felt even compliance after a negative reaction was not acceptable classroom behavior.

**Brief FA**

As a result of the FBA, the hypothesized function of Brian’s target behavior was identified as access to teacher attention. During the brief FA for Brian, teacher requests without providing attention to Brian were alternated with teacher requests that included attention in the form of specific praise statements. Prior to implementation, efforts were made to control variables related directly to the hypothesis (i.e., teacher attention), while variables such as setting, time of day, and activities were held constant. Data gathered across conditions confirmed the validity of the hypothesized function as access to teacher attention. This data was calculated in terms of opportunities to respond in that each teacher request represented an opportunity and data was collected on whether Brian complied in a positive manner. Data showed that each instance of access to teacher attention was associated with moderate to high levels of positive compliance, ranging from 67% to 100% (mean = 84%), while conditions in which access to teacher attention was limited showed a low level of positive compliance, ranging from 0% to 20% (mean = 11%). This data shows a clear differentiation between the brief FA conditions and serves to verify the preliminary hypothesis of access to teacher attention. Brief FA data for Brian are presented in Figure 5.
Phase Two

In the experimental phase, Brian’s classroom teacher and the researcher collaboratively created two interventions. One was indicated by function, and the other was not indicated by function, yet was typical of classroom-based behavioral intervention in an average classroom. Brian’s functionally indicated intervention involved the provision of appropriate teacher attention in the form of specific praise and encouraging comments, especially prior to making a request of Brian while instituting a policy of planned ignoring of non-compliant behavior (i.e., differential reinforcement of alternative or incompatible behavior). The non-functionally indicated intervention involved a token system for compliant responses to teacher requests that simply involved the teacher providing token reinforcement without attention. During baseline for Brian, no teacher
attention or tokens were provided and Brian’s compliance was inconsistent between moderate and low rates of positive compliance, ranging from 0% to 33% of opportunities (mean = 19.7%). In Brian’s case, the functionally indicated intervention was implemented first and was associated with an immediate increase in the level of positive compliance to 100% across all three trials. Next, the non-functionally indicated intervention was introduced and was associated with an immediate drop in the level of off-task behavior (mean = 22.3%) and a decreasing trend. When the functionally indicated intervention was reintroduced, positive compliance again rose to a high level (mean = 75%) with the final trial at 100%. A second reintroduction of the non-functionally indicated intervention was associated with an immediate drop in level to 0% across all three trials. To end the experiment on a positive note, the functionally indicated intervention reintroduced a final time and was again associated with an immediate increase in positive compliance (mean = 89%). These data demonstrate a functional relationship between the functionally indicated intervention and Brian’s behavior. Figure 6 presents a graphic display of the results of this experimental analysis. In summary, the functionally indicated intervention consistently and repeatedly produced more positive results than did the non-indicated interventions.
Phase One

FBA

Barry’s FBA was conducted using the Request for Assistance Form (Crone & Horner, 2003), the Functional Assessment Checklist for Teachers and Staff (Crone & Horner, 2003), a records review of academic performance, attendance, discipline referrals, and medical history, and observations in natural settings using the ABC Form (Crone & Horner, 2003), including likely times problem behaviors were most and least likely to occur. This process resulted in the identification of a target behavior of off-task during academic task. Barry’s off-task behavior was operationally defined as not actively involved in an assigned task, as evidenced by initiating interaction with teacher or peers,
not working or staring away from task for three seconds or longer, or manipulating any objects in any way other than to work on the assigned task.

**Brief FA**

As a result of the FBA, the hypothesized function of Barry’s target behavior was identified as escape from difficult tasks. The brief FA for Barry presented issues that necessitated it being different from what was done with the other three subjects. Because Barry’s behavior was escape motivated, a true consequence manipulation would have had to create conditions under which he could and could not escape. Because these conditions were deemed both unethical for Barry and unacceptable to the teacher, antecedents were manipulated. While such a procedure might be more accurately described as a structural rather than functional analysis and technically cannot verify function, the function can be assumed from clear differences across conditions. During this process for Barry, preferred and non-preferred tasks were alternatively introduced and removed while holding constant variables such as teacher attention, setting, and time of day. Data gathered across these conditions demonstrated that Barry was far more likely to engage in negative behavior in the presence of an aversive, non-preferred condition. Under conditions where the preferred task was in place, Barry’s level of off task behavior remained at a low level (mean = 7.5%), while when non-preferred task conditions were in place his level of off task behavior was significantly higher (mean = 33%). This data showed a clear differentiation between the conditions and provides strong evidence in support of the hypothesized function of escape from difficult tasks. Brief FA data for Barry are presented in Figure 7.
Phase Two

In the experimental phase, two interventions were identified, one indicated by function and the other not indicated by function, yet typical of classroom-based behavioral intervention in an average classroom. Barry’s functionally indicated intervention allowed escape contingent upon completing non-preferred task by allowing him to earn “B Passes” which were small magnets presented by the teacher. The teacher would present these tokens to the student, contingent upon on task behavior during non-preferred tasks. When the student had more than one token in his possession he was allowed to use one to take a 5-10 minute break. The non-functionally indicated intervention involved teacher attention in the form of verbal prompts and reprimands contingent upon off task behavior. During baseline no special interventions were implemented and data closely mirrored levels collected during the access to specific peer
condition in the brief FA (mean = 46.6%), and with a slightly increasing trend. In Barry’s case, the functionally indicated intervention was implemented first and was associated with an immediate decrease in off task behavior to a low level (mean = 3.3%) with a decreasing trend ending with 0% of intervals on task during the last trial. Next, the non-functionally indicated intervention was introduced and was associated with a change in trend and very gradual change in level. This change was so gradual that six trials were conducted to be certain of the stability of the data. Overall data during this condition ranged from 3% to 53% (mean = 26.3%). When the functionally indicated intervention was reintroduced off task behavior again dropped immediately to a low level (mean = 1.6%) with a decreasing trend ending with 0% Reintroduction of the non-functionally indicated intervention again was associated with an immediate increase to a high level of off task behavior (mean = 43%) and an increasing trend. In order to end the experiment on a positive note, the functionally indicated intervention was again reintroduced and demonstrated an immediate decrease in off task behavior (mean = .6%) with the last two trials at 0%. These data demonstrate a functional relationship between the functionally indicated intervention and Barry’s behavior. Figure 8 presents a graphic display of the results of this experimental analysis. In summary, the functionally indicated intervention consistently and repeatedly produced more positive results than did the non-indicated intervention.
Figure 8. Results of Experimental Analysis for Barry
CHAPTER 5
DISCUSSION

Chapter five provides a discussion of the dissertation study investigating the effectiveness of function indicated behavioral interventions when compared to typical school interventions that are not based of the function of a behavior. First, a preamble offers an overview of the rationale and methods involved in the study. Second, implications of those finding are explored and put into the context of the research base related to the study. Third, limitations of the study are presented. Fourth, directions for future research are discussed. Last, a conclusion summarizes the study and it’s findings.

Preamble

Students who exhibit challenging behaviors in the school setting rob themselves and their fellow students of learning opportunities, simultaneously taxing school and teacher resources in terms of instructional time and energy. Educators are searching for strategies that are both effective and efficient to better manage classroom behavior and FBA has been deemed a promising behavioral assessment strategy. While developed for use with students with severe disabilities, FBA is now being extended to the school setting for students with mild disabilities. Although a large body of research has assessed the effectiveness of developing interventions based on the function in clinical settings and with a population identified as severely disabled, less research has evaluated the effectiveness of FBA in school settings and for students with or at-risk of school failure. Even less research has been conducted on the efficacy of brief FAs as a component of FBA to verify the hypothesized function prior to the development of intervention.
The purpose of this dissertation study was to scientifically investigate the efficacy of interventions based on the function of behavior as compared to typical classroom behavioral interventions that are not based on the identified function of behavior. The study was conducted using single subject research methodologies that measure the effect of intervention on behavior over time for each study participant. Alternating treatments designs were used in this study because they directly compare the effects of the interventions (functionally and non-functionally indicated) under investigation. In this study, threats to internal validity by sequencing effect were controlled by counterbalancing the order of introduction of function indicated and non-function indicated interventions for the four study participants. That is, for two subjects (Brian and Barry), the function indicated intervention was introduced first, followed by the non-function indicated intervention, while for the other two students (Julie and Amy), the order was reversed so that the non-function indicated interventions were introduced first, followed by the function indicated interventions.

**Implications**

The FBA, brief FA, and experimental phases of this study each provide information that both answers the questions posed at the beginning of this study and sets the occasion for an new set of questions and study to further develop the indicators and implications of these processes. The remainder of this chapter further explores these implications.

In terms of the FBA procedures used in this study, the fact that each student’s teacher was intimately involved with the development of all interventions and reported acceptance of the practices and procedures followed during the course of this study is significant. The initial FBA was conducted by the researcher in coordination with the teacher using a semi-structured interview form (Crone & Horner, 2003) that is presented
in Appendix D. In particular, these forms were useful in imparting information about the student and his/her problem behavior, defining contexts for observation and leading to the generation of hypotheses of function for each student. This process was simple, well prescribed by the forms, and was accomplished by the researcher and teacher in the absence of outside assistance. This is important because, across all students, hypotheses generated from this process were validated by the brief FA. This means that the FBA process detailed herein has demonstrated validity by correctly identifying function in four of four trials. The fact that such simplified FBA methods demonstrated clearly accurate identification of function has implications for the form of FBA in public school settings, as there currently exists no clear evidence of what teachers are able and willing to do in terms of FBA.

A second level of implication can be drawn from the brief FAs. In general, manipulations undertaken as part of the brief FA resulted in clearly differentiated data patterns that occurred with strong temporal contiguity and were replicated. This process proved to be time consuming and, often, difficult to develop. Especially in the case of escape motivated behaviors, functional analysis procedures may be both unethical and unwieldy. Perhaps it would make logical sense to consider a brief FA in the case of access motivated behaviors and to use a structural analysis in the case of escape function hypotheses. However, there is no literature to support such a decision rule at this point, only the logistical and ethical warrants of the typical public school setting.

In the experimental phase, each student demonstrated clearly more positive results under conditions involving functionally indicated interventions – regardless of which was introduced first. At the same time, interventions that were not based on function did not
demonstrate effects that were significantly different from baseline. Thus, these data support the use of functionally indicated interventions as more effective than non-indicated interventions – even when those interventions are widely used and accepted. Function indicated interventions were found to be more effective in reducing problem behaviors.

**Extension of the Literature**

The two studies most influential in the development of this dissertation are Newcomer and Lewis (2004) and Ingram, Lewis-Palmer, and Sugai (2005). Both of these studies were novel in that they attempted to validate the role of function in the development of behavioral interventions. Both produced results that supported function-based intervention but both had limitations in three key areas. First, Newcomer and Lewis did not counterbalance to control for ordering effects but Ingram et al. did. Second, Ingram et al. did not experimentally validate functional hypotheses prior to intervention while Newcomer and Lewis did. Third, Newcomer and Lewis manipulated only antecedents for their interventions while Ingram et al. manipulated consequence-based interventions. Because each of these three issues is seen as key, the current study extended the research by assuring the counterbalancing, experimental validation of functional hypotheses, and consequence based interventions were used. The significance here is that, with this more stringent methodology, function-based intervention continued to be associated with more positive student outcomes than non-functional interventions.

One serendipitous finding in this study is related to the fact that two of the subject’s target behaviors were maintained each by access to attention of one another. While complicated in terms of research, this situation likely is common in classrooms where children spend large amounts of time together and become conditioned reinforcers for
each other. Of importance is the manner in which the brief FA was used to validate these functions simultaneously and how contingent access to specific peers was successfully used as intervention strategy for these students. Although a common problem in the school setting, this type of behavior has not previously been addressed in the literature.

Upon reviewing the data from all students it became evident that non-indicated interventions not only were associated with higher levels of inappropriate behavior but that these behaviors tended to increase over time. This held true both within the phase where increasing trends of problem behavior were observed in all non-indicated conditions, but also across non-indicated conditions. For each student, the second introduction of non-indicated intervention was associated with a further deterioration of behavior than had been observed in the first introduction. If a contra-indicated intervention (reversal) had been implemented we might expect such an outcome, as the intervention would be hypothesized to reinforce problem behavior. However, the use of a simple non-indicated intervention would not predict accelerating negative behavior. Possibly this escalation is small extinction burst that grows with each new removal of the reinforcer (e.g., attention or opportunity to escape). But the potential implication for teachers is important. Inconsistent application of a function-based intervention – even when not directly reinforcing problem behavior may tend to have the effect of escalating problem behavior. This is another issue that warrants further study.

Limitations

When considering the outcomes reported in this study a number of limitations should be considered. While these limitations do not erase the significance of the outcomes, they do present concerns that ultimately must mediate the scope of conclusions drawn as a result.
Generalization

As with any single subject design, generalization to other students by age, grade, gender, learning histories, disability, educational settings, behavior types, and setting cannot be inferred without systematic replication in light of these variables. For example, assessments did not occur across the full range of stimulus conditions, prohibiting the detection of multiple functions of the target behaviors, which may have resulted in only partial reductions. In addition, the small number of subjects involved in this study does not warrant comprehensive statements regarding effect. However, the purpose of this study was to add to the scant evidence base on FBA in public schools. More generalizable results will be dependent upon the continuing evolution and replication of this line of research.

Design Limitations

Single subject in general are limited by the degree to which the data are clearly enough differentiated across phases in terms of level, trend, and stability. Fortunately, data in this study was associated with clear temporal contiguity (change immediate at phase line) and replication. In addition, the complex environment that is the school classroom creates an endless array of variables that may or may not have any predictable effect on the student’s behavior. Although efforts were made to control all variables in the environment, it is impossible to know whether all relevant variables were actually controlled. While this lack of control lends itself to external validity by involving natural stimuli, it weakens internal validity and must be considered when analyzing the outcomes reported herein. Alternating treatments designs in particular provide the advantage of comparing treatments in an efficient manner. However, ordering effects and the inability to draw conclusions regarding the individual components of a package intervention limit
this design. In the current study these issues were minimized by counterbalancing the order of intervention and using discrete intervention consequences rather than multi-intervention packages.

**Directions for Future Research**

Robert Gable (1999) has summarized both the rationale and direction of FBA research in reinforcing that the use of FBA in school settings necessitates a hypothesis-driven approach using indirect (interviews, etc.) and direct (scatter plot, ABC, etc.) procedures to generate an informed hypothesis of function. He makes the point that, in complex settings such as schools, much of what the research tells us about FBA may simply be inaccurate or incomplete. For example, he points to analog analysis as a procedure that, while validated in the literature for clinical settings, may not be realistic in the school. What other features of our existing knowledge of FBA warrant further thought, discussion, and research? The following issues that have arisen from the implementation and results of this study seem especially relevant and in need of our attention as future direction for our scholarly efforts.

It seems clear that function indicated interventions should be evaluated in terms of cost/benefit for effectiveness plus efficiency. That is, we must determine the point at which FBA is warranted in order to prevent failure and the level of FBA that should be prescribed. To be sure, early intervention provides a better prognosis for the future but how early and how much intervention are questions that remain unanswered as we simply cannot apply FBA to each and every student with the most mild of problems – nor do we need to. Thus, there are some important questions primed for study.

First, because FBA is complex and idiosyncratic, requiring much effort and energy, future research must continue to examine ways to improve the efficiency of the process.
One area of focus might be to determine which component pieces of FBA are essential to its successful implementation in school settings. To repeat Gable’s thought, are analog analyses necessary? In the current study brief FAs were successfully used to validate hypotheses but it still seems relevant to ask, given that all initial hypotheses were validated, whether the validation process is necessary at all. Thus, research needs to further examine when and how validation is best implemented so as to create a set of decision rules for its application in the school setting.

Similarly, research must strive to determine the point or conditions under which the simple FBA methods used in this study are likely to be sufficient and when, if ever, more formalized and complex assessment procedures must be implemented. Whether this is an issue of the topography or intensity of the behavior, the degree of failure for the student, or the number of previous assessment and interventions trials is a question that must be studied. It would be helpful for school personnel if they could characterize a given student’s behavior and get a prescription for the intensity of assessment based on some score or set of criteria.

Another issue involves the portability or generalization of function-based interventions. Because function is often very contextual and tied to specific settings or circumstances, will we find that the full range of FBA, FA, and intervention planning will need to occur for every context or condition in which the student resides on a daily basis? If so, FBA quickly becomes too burdensome a task to be realistic for public schools. More likely, classes of environmental stimuli (antecedents and consequences) can be identified as part of the process, allowing more generalized interventions. However, such
generalizability has not been demonstrated in the complex and subtle social environment of the typical school classroom.

Perhaps the heart of all of the questions that remain unanswered for FBA is what processes and procedures will school personnel find simple and efficient enough to implement in the scope of their daily work lives. As Scott and Nelson (1999a) have suggested, providing teachers with models of FBA that serve to actually decrease the problem behaviors they so lament will be a major factor in persuading them to continue using this technology. However, when not realistic in terms of time or effort, even the most effective interventions are unlikely to maintain. Research must continue to focus on teacher application without assistance or advisement from researchers or other experts. The current study, although involving the teacher in all phases, was directed and coordinated by the researcher and thus cannot be said to have demonstrated any practicality for teachers in terms of efficiency or effort. It is still not clear whether the future of FBA will be in the hands of classroom teachers, school psychologists, specialized teams, or relegated back to experts from outside the school.

**Conclusions**

This study set out to answer the question as to whether an intervention based on the verified function of behavior in a public school classroom is more effective than traditional classroom-based interventions that are not indicated by function. The results of this study, in consideration of the limitations inherent in such research, support function-based interventions as being more effective in reducing problem behavior and increasing positive replacement behavior than are interventions that, while common, are not based on function. As has been discussed, the use of FBA, brief FA, and function-based intervention were found to be effective methods of gathering information, validating
function, and changing behavior. Whether these results will hold up over time, across settings, and under less controlled contexts is yet to be determined and must make up the bulk of a research agenda for those who study FBA.
January 31, 2005

University of Florida
Institutional Review Board

Dear IRB Chair,

I am submitting the proposed study, Functional Behavioral Assessment: Basing Intervention on Function in School Settings, for an expedited review as I believe it fits the criteria for such a review.

This is the paper copy with signatures. I am concurrently submitting the same form electronically.

Thank you,

Linda Lou D. Payne, Doctoral Candidate
Department of Special Education
P.O. Box 117050
Gainesville, FL 32611
(352) 392-0701 (office)
(352) 392-2655 (fax)
lindapay@ufl.edu
UNIVERSITY OF FLORIDA INSTITUTIONAL REVIEW BOARD

1. **TITLE OF PROTOCOL:**
   Functional Behavioral Assessment: Basing Intervention on Function in School Settings

2. **PRINCIPAL INVESTIGATORS(s):**
   Linda Lou D. Payne, Doctoral Candidate
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   P.O. Box 117050
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   lindapay@ufl.edu

3. **SUPERVISOR (IF PI IS STUDENT):**
   Terrance M. Scott
   Department of Special Education
   PO Box 117050
   Gainesville, FL 32611-7050
   352-392-0701 x263 (office)
   352-392-2655 (fax)
   terryscott@coe.ufl.edu

4. **DATES OF PROPOSED PROTOCOL:**
   From February 1, 2005 to January 31, 2006

5. **SOURCE OF FUNDING FOR THE PROTOCOL:**
   None

6. **SCIENTIFIC PURPOSE OF THE INVESTIGATION:**
   The purpose of this study is to determine whether an intervention based on the function of a behavior in a public school classroom is more efficacious than the typical or traditional intervention that is implemented without regard to function for students with challenging behavior in general education classrooms.

7. **DESCRIBE THE RESEARCH METHODOLOGY IN NON-TECHNICAL LANGUAGE:**
   Functional behavior assessment (FBA) is a procedure that is required by federal law for students whose behaviors identify them as at-risk for special education under the category of behaviorally disordered. We have been working at Terwilliger Elementary School to help them implement effective programs for students with and at-risk for behavior disorders and have been asked to continue our involvement by helping them with their FBA process. Students already have
been identified by the school and legal consents for the implementation of FBA have been undertaken.

This study will simply evaluate the outcomes of typical classroom behavioral interventions that are approved by the school district for use with students exhibiting problem behaviors and which are already in use in these classrooms (e.g., brief time out, reprimand, planned ignoring, token economy response cost, etc.). Using a single subject alternating treatment research design, these interventions will be implemented and evaluated by direct observation using a 10-second partial interval recording as to which are most effective given the outcomes of the FBA. The intent is to validate specific interventions in relation to the FBA.

8. POTENTIAL BENEFITS AND ANTICIPATED RISK:
There are no risks associated with participation in this project. This project has the potential benefit for participants in facilitating appropriate skills and behaviors in the classroom. In addition, the project will benefit the teachers by providing them intervention information, skills, and knowledge related to the effective use of the legally required FBA process.

9. DESCRIBE HOW PARTICIPANT(S) WILL BE RECRUITED, THE NUMBER AND AGE OF THE PARTICIPANTS, AND PROPOSED COMPENSATION (if any):
Participants in this study have already been identified from disciplinary referral information at Terwilliger Elementary School in Alachua County. Because each student has been identified as exhibiting challenging behaviors that interfere with academic achievement, the school is legally obligated to perform an FBA and to evaluate interventions. Our role is simply to assist in this process and to generate an empirical evaluation of the outcomes. As part of federal law, participants must have signed parent permission forms indicating consent for assessment and evaluation of intervention. Currently, the school has identified four such students who require FBA and have received parent consent.

10. DESCRIBE THE INFORMED CONSENT PROCESS. INCLUDE A COPY OF THE INFORMED CONSENT DOCUMENT (if applicable):
As part of federal law, participants must have signed parent permission forms indicating consent for assessment and evaluation of intervention. Because we already have the school and teacher's consent to work at Terwilliger and because federal law requires that the school garner parent consent, no informed consent is necessary for our participation in this study.
Principal Investigator's Signature

Supervisor's Signature

I approve this protocol for submission to the UFIRB:

Dept. Chair/Center Director Date
February 16, 2005

TO: Linda Lou D. Payne
PO Box 117050
Campus

FROM: Ira S. Fischler, PhD, Chair
University of Florida Institutional Review Board 02

SUBJECT: UFIRB Protocol #2005-U-0194
Functional Behavioral Assessment: Basing Intervention on Function in School Settings

FUNDING: None

Because this protocol involves research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods, it is exempt from further review by this Board in accordance with 45 CFR 46.101(b)(1).

Should you need to revise this protocol, please contact this office for additional information.

IF/dl
APPENDIX B
PBS SCHOOL-WIDE EVALUATION TOOL (SET)

Systems-wide Evaluation Tool: School Wide
(SET-SW)

Overview

Purpose of the SET
The Systems-wide Evaluation Tool (SET) is designed to assess and evaluate the critical features of school-wide effective behavior support across each academic school year. The SET results are used to:
1. assess features that are in place,
2. determine annual goals for school-wide effective behavior support,
3. evaluate on-going efforts toward school-wide behavior support,
4. design and revise procedures as needed, and
5. compare efforts toward school-wide effective behavior support from year to year.

Information necessary for this assessment tool is gathered through multiple sources including review of permanent products, observations, and staff (minimum of 10) and student (minimum of 15) interviews or surveys. There are multiple steps for gathering all of the necessary information. The first step is to identify someone at the school as the contact person. This person will be asked to collect each of the available products listed below and to identify a time for the SET data collector to preview the products and set up observations and interview/survey opportunities. Once the process for collecting the necessary data is established, reviewing the data and scoring the SET averages takes two to three hours.

Products to Collect

1. Discipline handbook
2. School improvement plan goals
3. Annual Action Plan for meeting school wide behavior support goals
4. Social skills instructional materials/ implementation time line
5. Behavioral incident summaries or reports (e.g., office referrals, suspensions, expulsions)
6. Office discipline referral form(s)
7. Other related information

Using the SET Results

The results of SET will provide schools with a measure of the proportion of features that are 1) not targeted or started, 2) in the planning phase, and 3) in the implementation/maintenance phases of development toward a systems approach to school wide effective behavior support. The SET is designed provide trend lines of improvement and sustainability over time.

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SET 7.0, 2001

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# Systems-wide Evaluation Tool: School Wide (SET-SW) Implementation Guide

**Step 1: Make Initial Contact**

- A. Identify school contact person & give overview of SET page with the list of products needed
- B. Ask when they may be able to have the products gathered. Approximate date: __________
- C. Get names, phone #’s, email address & record below.

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
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<tr>
<th>Email</th>
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</table>

**Products to Collect**

1. ______ Discipline handbook
2. ______ School improvement plan goals
3. ______ Annual Action Plan for school-wide behavior support activities
4. ______ Social skills instructional materials/implementation timeline
5. ______ Behavioral incident summaries or reports (e.g., office referrals, suspensions, expulsions)
6. ______ Office discipline referral form(s)
7. ______ Other related information

**Step 2: Confirm the Date to Conduct the SET**

- A. Confirm meeting date with the contact person for conducting an administrator interview, taking a tour of the school while conducting student & staff interviews, & for reviewing the products.

<table>
<thead>
<tr>
<th>Meeting date &amp; time:</th>
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**Step 3: Conduct the SET**

- A. Conduct administrator interview
- B. Tour school to conduct observations of posted school rules & randomly selected staff (minimum of 10) and student (minimum of 15) interviews.
- C. Review products/score SET

**Step 4: Summarize and Report the Results**

- A. Summarize surveys & complete SET scoring
- B. Update school graph
- C. Meet with team to review results

<table>
<thead>
<tr>
<th>Meeting date &amp; time:</th>
</tr>
</thead>
</table>

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SET 2.0, 2001
Hints from other SET data collectors:  
(we want to be welcomed back!)

Getting set up for SET:

Schedule, administrator questions, and consent forms

✓ Send out (fax) information to get things set up.
✓ Send out a reminder a few days ahead of time. (people are anxious about this the first time around AND you want them to be prepared so that your time is used efficiently)

Getting interviews completed:

Schedule

✓ as soon as you get there- find out recess times for different grade levels.
✓ be careful if there is an assembly- no one wants to talk to you then.

Access

✓ ask if the principal can take you to the teachers lounge  
(having the principal behind you is much better than walking into the teacher's lounge alone- asking questions).
✓ have the principal direct you to the team members- you may not run across them walking down the halls.
✓ While asking staff- state the purpose of why you are gathering the information (I'm gather info on ...)
✓ try to ask staff one at a time- not allowing a group of staff to answer.

Reviewing products:

✓ it's nice if the principal can be "around" (available) if you have questions on the permanent product stuff. lots of times the notebooks are not organized well.
✓ take a look at the products and figure out if you have everything you need so that you can ask for other things when the administrator is with you

Completing the SET:

✓ check in with the administrator prior to leaving. Give a brief summary of the good stuff going on and set the stage for sending a report in the mail.
✓ Send an email of thanks to the administrator with the instructions to share with the staff.

**Reporting SET results:**

✓ Check with district to see how the results should be shared. Options that have worked well thus far include:

- Attend a meeting to share the SET results. Use the EBS Self-assessment (SW) to juxtapose the SET results. The EBS survey is the tool that the schools will use on-going to get this information. The SET validates the survey result (.82 correlation between the two tools).

- Send a one-two page report, remind people of the purpose and uses for SET (don’t assume they remember this stuff) after completing the SET.

- Give the results to the district team facilitators to share with the team. Make sure that you model the summary of results with them first, though.
SET Administrator Interview Questions

**et's talk about your discipline system**

1. Do you collect and summarize office discipline referral information? Yes No If no, skip to #5.
2. What information do you use for collecting office discipline referrals? (E2)
   a. What data are collected?____________
   b. Who collects the data?____________
3. What do you do with the office discipline referral information? (E2)
   a. Who looks at the data?____________
   b. How often do you share it with other staff and who do you share it with?____________
4. What type of problems do you expect teachers to refer to the office rather than handling in the classroom/specific setting? (D2)
5. What is the procedure for handling extreme emergencies in the building (i.e. stranger in building with a gun/serious fight? (D4)

**Let's talk about your school rules or motto**

6. Do you have school rules or motto? Yes No If no, skip to #10.
7. How many are there?____________
8. What are the rules/motto? (B5)
9. What are they called? (B2, B4)
10. Do you acknowledge students for doing well socially in ways that you do academically? Yes No If no, skip to #12.
11. What are the social acknowledgements/activities/routines called (student of month, positive referral, letter home, stickers, high 5's)? (C2, C3)

**Do you have a team that addresses school wide discipline? If no, skip to #19**

12. Has the team taught/reviewed the school wide program to staff this year? (B3) Yes No
13. Is your school wide team representative of your school staff? (F3) Yes No
14. Are you on the team? (F5) Yes No
15. How often does the team meet? (F6)____________
16. Do you attend team meetings consistently? (F5) Yes No
17. Who is your team/leader? (F4)____________
18. Does the team provide faculty updates on activities & data summaries? (E3) Yes No If yes, how often
19. Do you have an out-of-school liaison in the state or district to support you on positive behavior support systems development? (G2) Yes No If yes, who?

20. What are your school improvement goals? (F1)
   1. 2. 3. 4.
21. Does the school budget contain an allocated amount of money for building and maintaining school wide behavioral support? (G1) Yes No If yes, where does the money come from?
In addition to the administrator interview questions there are questions for Behavior Support Team members, staff and students. Interviews can be completed during the school tour. Randomly select students and staff as you walk through the school. Use the interview scoring page to record student, staff, and team member responses.

**Staff Interview Questions**

*Interview a minimum of 10 staff*

1. Is there a school wide team that addresses behavioral support in your building? (F2)
   
   Are you on the team?

2. What are the ________________ (school rules, high 5's, 3 bee's)? (B5) (define what the acronym means)

3. Have you taught the school rules/behavioral expectations this year? (B2)

4. Have you given out any ________________ since ________________? (C3)
   (rewards for appropriate behavior) (2 months ago)

5. What type of student problems do/would you refer to the office? (D2)

6. What is the procedure for dealing with a stranger/serious fight in the building? (D4)

**Team Member Interview Questions**

1. Does your team use discipline data to make decisions? (E4)

2. Who is the team leader/facilitator? (F4)

3. Has your team taught/reviewed the school wide program with staff this year? (B3)

**Student interview Questions**

*Interview a minimum of 15 students*

1. What are the ________________ (school rules, high 5's, 3 bee's)? (B4) (define what the acronym means)

2. Have you received a reward for doing the right things since ________________? (C2)
   (2 months ago)

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SET 2.0, 2001
### Interview and Observation Form

<table>
<thead>
<tr>
<th>Staff interview questions</th>
<th>Team member interview questions</th>
<th>Stud`interview questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Have you taught the school rules?</strong> Have you given out any discipline forms since?</td>
<td><strong>Is there a team in your school to address school-wide behavior support systems?</strong> Are you on the team? If yes, ask team questions</td>
<td><strong>What are the school rules?</strong> Record the # of rules known</td>
</tr>
<tr>
<td>1</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>2</td>
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<td>N</td>
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**Total**

### Observations

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<thead>
<tr>
<th>Location</th>
<th>Front hall</th>
<th>Class 1</th>
<th>Class 2</th>
<th>Class 3</th>
<th>Cafeteria</th>
<th>Library</th>
<th>Other setting (gym, computer lab)</th>
<th>Hall 1</th>
<th>Hall 2</th>
<th>Hall 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are rules &amp; expect. posted?</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Is the documented crisis plan posted?</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

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### Systems-wide Evaluation Tool: School Wide (SET-SW) Scoring Guide

<table>
<thead>
<tr>
<th>Feature</th>
<th>Evaluation Question</th>
<th>Data Source (circle sources used)</th>
<th>Score: 0-2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Expectations Defined</strong></td>
<td>1. Is there documentation that staff has agreed to 3 or fewer positively stated school rules/behavioral expectations? (0=no, 1=too many/negatively focused, 2=yes) Rules:</td>
<td>Discipline handbook, Instructional materials, Other</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>2. Are the agreed upon rules &amp; expectations publicly posted in 8 of 10 locations? (See interview &amp; observation form for selection of locations) (0=0-4, 1=5-7, 2=8-10)</td>
<td>Wall posters, Other</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td><strong>B. Behavioral Expectations Taught</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Is there a documented system for teaching behavioral expectations to students on an annual basis? (0=no, 1=states that teaching will occur, 2=yes)</td>
<td>Lesson plan books, Instructional materials, Other</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>2. Do 90% of the staff asked state that teaching of behavioral expectations to students has occurred this year? (0=0-50%, 1=51-89%, 2=90%-100%)</td>
<td>Interviews, Other</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td>3. Do 90% of team members asked state that the school wide program has been taught/reviewed with staff on an annual basis? (0=0-50%, 1=51-89%, 2=90%-100%)</td>
<td>Interviews, Other</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td>4. Can at least 70% of 15 or more students state 67% of the school rules? (0=0-50%, 1=51-69%, 2=70-100%)</td>
<td>Interviews, Other</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td>5. Can 90% or more of the staff asked list 67% of the school rules? (0=0-50%, 1=51-89%, 2=90%-100%)</td>
<td>Interviews, Other</td>
<td>I</td>
</tr>
<tr>
<td><strong>C. On-going System for Rewarding Behavioral Expectations</strong></td>
<td>1. Is there a documented system for rewarding student behavior? (0=no, 1=states to acknowledge, but not how, 2=yes)</td>
<td>Instructional materials, Lesson Plans, Interviews, Other</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>2. Do 50% or more students asked indicate they have received a reward (other than verbal praise) for expected behaviors over the past two months? (0=0-25%, 1=26-49%, 2=50-100%)</td>
<td>Interviews, Other</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td>3. Do 90% of staff asked indicate they have delivered a reward (other than verbal praise) to students for expected behavior over the past two months? (0=0-50%, 1=51-89%, 2=90-100%)</td>
<td>Interviews, Other</td>
<td>I</td>
</tr>
<tr>
<td><strong>D. System for Responding to Behavioral Violations</strong></td>
<td>1. Is there a documented system for dealing with and reporting specific behavioral violations? (0=no, 1=states to document, but not how, and 2=yes)</td>
<td>Discipline handbook, Instructional materials, Other</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>2. Do 90% of staff asked agree with administration on what problems are office-managed and what problems are classroom-managed? (0=0-50%, 1=51-89%, 2=90-100%)</td>
<td>Interviews, Other</td>
<td>I</td>
</tr>
</tbody>
</table>

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SET 2.0, 2001
| E. Monitoring & Decision-Making |  |  |  |
|---------------------------------|-------------------------------|-------------------------------|
| 1. Does the discipline referral form list (a) student/grade, (b) date, (c) time, (d) referring staff, (e) problem behavior, (f) location, (g) persons involved, (h) probable motivation, & (i) administrative decision? (0=0-3 items, 1=4-6 items, 2=7-9 items) | Referral form (circle items present on the referral form) | P |
| 2. Can the administrator clearly define a system for collecting & summarizing discipline referrals (computer software, data entry time)? (0=no, 1=referrals are collected, 2=yes) | Interview Other | I |
| 3. Does the administrator report that the team provides discipline data summary reports to the staff at least three times/year? (0=no, 1=1-2 times/yr, 2=3 or more times/yr) | Interview Other | I |
| 4. Do 90% of team members asked report that discipline data is used for making decisions in designing, implementing, and revising school wide effective behavior support efforts? (0=0-30%, 1=31-89%, 2=90-100%) | Interviews Other | I |

| F. Management |  |  |  |
|---------------------------------|-------------------------------|-------------------------------|
| 1. Does the school improvement plan list improving behavior support systems as one of the top 3 school improvement plan goals? (0=no, 1=4th or higher, 2=yes) | School Improvement Plan, Interview Other | P/A |
| 2. Can 90% of staff asked report that there is a school wide team established to address behavior support systems in the school? (0=0-30%, 1=31-89%, 2=90-100%) | Interviews Other | I |
| 3. Does the administrator report that team membership includes representation of all staff? (0=no, 2=yes) | Interview Other | I |
| 4. Can 90% of team members asked identify the team leader? (0=no, 1=31-89%, 2=90-100%) | Interview Other | I |
| 5. Is the administrator an active member of the school-wide behavior support team? (0=no, 1=yes, but not consistently, 2=yes) | Interview Other | I |
| 6. Does the administrator report that team meetings occur at least monthly? (0=no team meeting, 1=less often than monthly, 2=at least monthly) | Interview Other | I |
| 7. Does the administrator report that the team reports progress to the staff at least four times per year? (0=no, 1=less than 4 times per year, 2=yes) | Interview Other | I |
| 8. Does the team have an action plan with specific goals that is less than one year old? (0=no, 2=yes) | Annual Plan, calendar Other | P |

| G. District-Level Support |  |  |  |
|---------------------------------|-------------------------------|-------------------------------|
| 1. Does the school budget contain an allocated amount of money for building and maintaining school-wide behavioral support? (0=no, 2=yes) | Interview Other | I |
| 2. Can the administrator identify an out-of-school liaison in the district or state? (0=no, 2=yes) | Interviews Other | I |

Summary Scores:  
A = /4  B = /10  C = /6  D = /8  
E = /8  F = /16  G = /4  Mean = /7

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APPENDIX C
REQUEST ASSISTANCE FORM

Request for Assistance Form

<table>
<thead>
<tr>
<th>Date</th>
<th>Teacher/Team</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

IEP: Yes No (Circle)

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Situations</th>
<th>Problem Behaviors</th>
<th>Most Common Result</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What have you tried/used? How has it worked?

<table>
<thead>
<tr>
<th>What is your behavioral goal/expectation for this student?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

What have you tried to date to change the situations in which the problem behavior(s) occur?

<table>
<thead>
<tr>
<th>Modified assignments to match the student's skill</th>
<th>Changed seating assignments</th>
<th>Changed schedule of activities</th>
<th>Other?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Arranged tutoring to improve the student's academic skills</th>
<th>Changed curriculum</th>
<th>Provided extra assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What have you tried to date to teach expected behaviors?

<table>
<thead>
<tr>
<th>Reminders about expected behavior when problem behavior is likely</th>
<th>Clarified rules and expected behavior for the whole class</th>
<th>Practiced the expected behaviors in class</th>
<th>Other?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reward program for expected behavior</th>
<th>Oral agreement with the student</th>
<th>Self-management program</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Systematic feedback about behavior</th>
<th>Individual written contract with the student</th>
<th>Contract with student/with parents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What consequences have you tried to date for the problem behavior?

<table>
<thead>
<tr>
<th>Loss of privileges</th>
<th>Note or phone call to the student's parents</th>
<th>Office referral</th>
<th>Other?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time-out</th>
<th>Detention</th>
<th>Reprimand</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Referral to school counselor</th>
<th>Meeting with the student's parents</th>
<th>Individual meeting with the student</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(continued)
APPENDIX A. Request for Assistance Form (page 2 of 2)

WHEN ADDRESSING THIS PROBLEM, PLEASE CONSIDER THE FOLLOWING QUESTIONS:

1. When is the problem behavior(s) most and least likely to occur?
   - On particular days of the week (e.g., Monday) or times of day (e.g., right after recess)?
   - During or after interactions with certain people (e.g., during small, cooperative group projects)?
   - During certain types of activity or tasks (e.g., during apparently difficult or boring work)?
   - In connection with particular features of the physical environment (e.g., noisy, crowded)?
   - Features of routine (e.g., when there are unexpected changes or when a preferred activity is canceled)?
   - Medical or physical factors (e.g., apparent hunger or lack of sleep)?
   - Other influences?

2. What do you think the student(s) may gain from the problem behaviors?
   - Attention? What kind of attention? From whom?
   - Avoid an apparently difficult or boring activity?
   - Avoid teacher interaction?
   - Get control of a situation?
   - Avoid embarrassment in front of peers?

<table>
<thead>
<tr>
<th>Setting Events &amp; Predictors</th>
<th>Behaviors of Concern</th>
<th>Maintaining Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Are there appropriate behaviors that the student could use that would make the problem behavior unnecessary?

4. Teacher support team decision
   - Some suggestions regarding interventions to try.
   - Referral to a different team for assessment (speech hearing, academic): ____________
   - Formation of an action team to conduct a functional assessment and develop a plan of support.

5. Date for follow-up ____________
APPENDIX D
FUNCTIONAL ASSESSMENT CHECKLIST FOR TEACHERS AND STAFF
(FACTS)

Functional Assessment Checklist
for Teachers and Staff (FACTS)

Student/Grade: ___________________________ Date: ___________________________
Interviewer: ___________________________ Respondent(s): ___________________________

Student profile: Please identify at least three strengths or contributions the student brings
to school.

Problem Behavior(s): Identify problem behaviors

<table>
<thead>
<tr>
<th>Tardy</th>
<th>Inapprop language</th>
<th>Disruptive</th>
<th>Theft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unresponsive</td>
<td>Fight/physical aggress</td>
<td>Insubordination</td>
<td>Vandalism</td>
</tr>
<tr>
<td>Withdrawn</td>
<td>Verbal harassment</td>
<td>Work not done</td>
<td>Other</td>
</tr>
</tbody>
</table>

Describe problem behavior:

Identifying Routines: Where, when, and with whom problem behaviors are most likely.

<table>
<thead>
<tr>
<th>Schedule (Times)</th>
<th>Activity</th>
<th>With Whom Does Problem Occur?</th>
<th>Likelihood of Problem Behavior</th>
<th>Specific Problem Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low High 1 2 3 4 5 6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Select 1–3 routines for further assessment. Select routines based on (1) similarity of activities (conditions)
with ratings of 4, 5, or 6 and (2) similarity of problem behaviors(s). Complete the FACTS–Part B for each
routine identified.

(continued)

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in their professional activities.
APPENDIX C. FACTS (page 2 of 4)

FACTS—Part B

Student/Grade: ______________________  Date: ______________________

Interviewer: ______________________  Respondent(s): ______________________

Routine/Activities/Context: Which routine (only one) from the FACTS—Part A is assessed?

<table>
<thead>
<tr>
<th>Routine/Activities/Context</th>
<th>Problem Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Provide more detail about the problem behavior(s):

What does the problem behavior(s) look like?

How often does the problem behavior(s) occur?

How long does the problem behavior(s) last when it does occur?

What is the intensity/level of danger of the problem behavior(s)?

What are the events that predict when the problem behavior(s) will occur?

<table>
<thead>
<tr>
<th>Related Issues (Setting Events)</th>
<th>Environmental Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>illness</td>
<td>reprimand/correction</td>
</tr>
<tr>
<td>drug use</td>
<td>structured activity</td>
</tr>
<tr>
<td>negative social</td>
<td>physical demands</td>
</tr>
<tr>
<td>conflict at home</td>
<td>unstructured time</td>
</tr>
<tr>
<td>academic failure</td>
<td>socially isolated</td>
</tr>
<tr>
<td></td>
<td>tasks too boring</td>
</tr>
<tr>
<td></td>
<td>with peers</td>
</tr>
<tr>
<td></td>
<td>activity too long</td>
</tr>
<tr>
<td></td>
<td>other</td>
</tr>
<tr>
<td></td>
<td>tasks too difficult</td>
</tr>
</tbody>
</table>

What consequences are most likely to maintain the problem behavior(s)?

<table>
<thead>
<tr>
<th>Things That Are Obtained</th>
<th>Things Avoided or Escaped From</th>
</tr>
</thead>
<tbody>
<tr>
<td>adult attention</td>
<td>hard tasks</td>
</tr>
<tr>
<td>peer attention</td>
<td>Other:</td>
</tr>
<tr>
<td>preferred activity</td>
<td>reprimands</td>
</tr>
<tr>
<td>money/things</td>
<td>peer negatives</td>
</tr>
<tr>
<td></td>
<td>physical effort</td>
</tr>
<tr>
<td></td>
<td>Other:</td>
</tr>
</tbody>
</table>

SUMMARY OF BEHAVIOR

Identify the summary that will be used to build a plan of behavior support

<table>
<thead>
<tr>
<th>Setting Events and Predictors</th>
<th>Problem Behavior(s)</th>
<th>Maintaining Consequence(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How confident are you that the Summary of Behavior is accurate?

<table>
<thead>
<tr>
<th>Not very confident</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Very confident</th>
</tr>
</thead>
</table>

APPENDIX C. FACTS (page 3 of 4)

What current efforts have been used to control the problem behavior?

<table>
<thead>
<tr>
<th>Strategies for Preventing Problem Behavior</th>
<th>Consequences for Problem Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>___ schedule change</td>
<td>reprimand</td>
</tr>
<tr>
<td>___ seating change</td>
<td>office referral</td>
</tr>
<tr>
<td>___ curriculum change</td>
<td>detention</td>
</tr>
<tr>
<td>Other: _________________________________</td>
<td>Other: _________________________</td>
</tr>
</tbody>
</table>

Instructions

The FACTS is a two-page interview used by school personnel who are building behavior support plans. The FACTS is intended to be an efficient strategy for initial functional behavioral assessment. The FACTS is completed by people (teachers, family, clinicians) who know the student best, and used to either build behavior support plans, or to guide more complete functional assessment efforts. The FACTS can be completed in a short period of time (5-15 min). Efficiency and effectiveness in completing the forms increases with practice.

How to Complete the FACTS—Part A

Step 1: Complete Demographic Information:

Indicate the name and grade of the student, the date the assessment data were collected, the name of the person completing the form (the interviewer), and the name(s) of the people providing information (respondents).

Step 2: Complete Student Profile

Begin each assessment with a review of the positive and contributing characteristics the student brings to school. Identify at least three strengths or contributions the student offers.

Step 3: Identify Problem Behaviors

Identify the specific student behaviors that are barriers to effective education, disrupt the education of others, interfere with social development, or compromise safety at school. Provide a brief description of exactly how the student engages in these behaviors. What makes his or her way of doing these behaviors unique? Identify the most problematic behaviors, but also identify any problem behaviors that occur regularly.

Step 4: Identify Where, When, and with Whom the Problem Behaviors Are Most Likely

A: List the times that define the student’s daily schedule. Include times between classes, lunch, and before school, and adapt for complex schedule features (e.g., odd/even days) if appropriate.

B: For each time listed indicate the activity typically engaged in during that time (e.g., small-group instruction, math, independent art, transition).

C: Where appropriate indicate the people (adults and peers) with whom the student is interacting during each activity, and especially list the people the student interacts with when he or she engages in problem behavior.

D: Use the 1 to 6 scale to indicate (in general) which times/activities are most and least likely to be associated with problem behaviors. A “1” indicates low likelihood of problems, and a “6” indicates high likelihood of problem behaviors.

E: Indicate which problem behavior is most likely in any time/activity that is given a rating of 4, 5, or 6.
APPENDIX C. FACTS (page 4 of 4)

Step 5: Select Routines for Further Assessment
Examine each time/activity listed as 4, 5, or 6 in the Table from Step 4. If activities are similar (e.g., activities that are unstructured; activities that involve high academic demands; activities with teacher reprimands; activities with peer taunting) and have similar problem behaviors, treat them as “routines for further analysis.”

Select between one and three routines for further analysis. Write the name of the routine and the most common problem behavior(s). Within each routine identify the problem behavior(s) that are most likely or most problematic.

For each routine identified in Step 5 complete a FACTS–Part B

How to Complete the FACTS–Part B

Step 1: Complete Demographic Information
Identify the name and grade of the student, the date that the FACTS–Part B was completed, who completed the form, and who provided information for completing the form.

Step 2: Identify the Target Routine
List the targeted routine and problem behavior from the bottom of the FACTS–Part A. The FACTS–Part B provides information about one routine. Use multiple Part B forms if multiple routines are identified.

Step 3: Provide Specifics about the Problem Behavior(s)
Provide more detail about the features of the problem behavior(s). Focus specifically on the unique and distinguishing features, and the way the behavior(s) is disruptive or dangerous.

Step 4: Identify Events that Predict Occurrence of the Problem Behavior(s)
Within each routine what (a) setting events and (b) immediate preceding events predict when the problem behavior(s) will occur. What would you do to make the problem behaviors happen in this routine?

Step 5: Identify the Consequences that May Maintain the Problem Behavior
What consequences appear to reward the problem behavior? Consider that the student may get/obtain something he or she wants, or that he or she may escape/avoid something he or she finds unpleasant.

Identify the most powerful maintaining consequence with a “1,” and other possible consequences with a “2” or “3.” Do not check more than three options. The focus here is on the consequence that has the greatest impact.

When problems involve minor events that escalate into very difficult events, separate the consequences that maintain the minor problem behavior from the events that may maintain problem behavior later in the escalation.

Step 6: Define What Has Been Done to Date to Prevent/Control the Problem Behavior
In most cases, school personnel will have tried some strategies already. List events that have been tried, and organize these by (a) those things that have been done to prevent the problem from getting started, and (b) those things that were delivered as consequences to control or punish the problem behavior (or reward alternative behavior).

Step 7: Build a Summary Statement
The summary statement indicates the setting events, immediate predictors, problem behaviors, and maintaining consequences. The summary statement is the foundation for building an effective behavior support plan. Build the summary statement from the information in the FACTS–A and FACTS–B (especially the information in Steps 3, 4, and 5 of the FACTS–B). If you are confident that the summary statement is accurate enough to design a plan, move into plan development. If you are less confident, then continue the functional assessment by conducting direct observation.
APPENDIX E
FUNCTIONAL BEHAVIORAL ASSESSMENT OBSERVATION FORM

Functional Behavioral Assessment Observation Form

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observer</td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td></td>
</tr>
<tr>
<td>Classroom/School</td>
<td></td>
</tr>
</tbody>
</table>

Setting Description:

Description of Behavior:

<table>
<thead>
<tr>
<th>Time</th>
<th>Antecedents</th>
<th>Behaviors</th>
<th>Consequences</th>
</tr>
</thead>
</table>

APPENDIX F
BRIEF FUNCTIONAL ANALYSIS PARTIAL INTERVAL DATA FORM

<table>
<thead>
<tr>
<th>Minutes</th>
<th>10-s</th>
<th>20-s</th>
<th>30-s</th>
<th>40-s</th>
<th>50-s</th>
<th>60-s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
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<tr>
<td>4</td>
<td></td>
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<td>5</td>
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<td>6</td>
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<td>7</td>
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APPENDIX G
BRIEF FUNCTIONAL ANALYSIS OPPORTUNITIES TO RESPOND DATA FORM

Brief Functional Analysis
Opportunities to Respond Form

Subject:

Target Behavior:

Condition:

Setting Events

Date:

Observer:

Session Length:

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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Key: Type of subject response
Tally opportunities to respond

Code: C=comply within 5 seconds within
5 seconds with appropriate
verbal and facial and gesture
response
N=non-comply or comply within
5 seconds with inappropriate
verbal or facial or gesture
response
APPENDIX H
EXPERIMENT PARTIAL INTERVAL DATA FORM

Experiment
Direct Observation

Subject/Participant: ________________________________________________________

Target Behavior: __________________________________________________________

Condition: _______________________________________________________________

Setting Events: ____________________________________________________________

Date: ___________________________________________________________________

Observer: __________________________________________________________________

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APPENDIX I
EXPERIMENT OPPORTUNITIES TO RESPOND DATA FORM

Experiment
Opportunities to Respond Form

Subject:

Target Behavior:

Condition:

Setting Events

Date:

Observer:

Session Length:

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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Key: Type of subject response
Tally opportunities to respond

Code: C=comply within 5 seconds within
5 seconds with appropriate
verbal and facial and gesture
response
N=non-comply or comply within
5 seconds with inappropriate
verbal or facial or gesture
response
LIST OF REFERENCES


BIOGRAPHICAL SKETCH

A biographical sketch is required of all candidates. The biographical sketch should be in narrative form. It typically includes the educational background of the candidate. You may replace this paragraph with your own text. The text uses the 08 Body Text style, which specifies double spacing.