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School-Based Functional Assessment for Adolescents with ADHD: Procedural Issues in General Education Settings

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SCHOOL-BASED FUNCTIONAL ASSESSMENT FOR ADOLESCENTS WITH ADHD: PROCEDURAL ISSUES IN GENERAL EDUCATION SETTINGS

by

Pamela M. Radford

A Specialist Project
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SCHOOL-BASED FUNCTIONAL ASSESSMENT FOR ADOLESCENTS WITH ADHD: PROCEDURAL ISSUES IN GENERAL EDUCATION SETTINGs

Pamela M. Radford, Ed.S.
Western Michigan University, 1999

Functional assessment is a structured problem-solving process that has been found to be an effective method for guiding the selection of classroom intervention for students who present a variety of problem behaviors (O’Neill, et al., 1997), including Attention Deficit/Hyperactivity Disorder (ADHD; American Psychiatric Association, 1994). This study evaluated the utility of school-based functional assessments with 2 adolescent boys diagnosed with ADHD in general education settings utilizing resources typically available to school personnel to document information relevant to behavior function. Descriptive information (i.e., interviews, observations, record reviews) led to the development of potential intervention strategies that were implemented and evaluated by school personnel in general education settings. According to direct observations, school interventions were effective in reducing problem behaviors for both participants. Yet, information regarding treatment acceptability and procedural integrity was mixed. This study demonstrated the utility of using existing school records to document potential predictor and maintaining variables associated with low-rate, high-intensity behaviors, such as aggression.
First of all, I would like to acknowledge my advisor, Dr. Ruth Ervin. I would like to thank her for all her support and guidance throughout the project. Further, I would like to express my appreciation towards Dr. Ervin, who went above and beyond her responsibilities as an advisor, for serving as an observer for interobserver reliability. I would also like to extend my gratitude to Dr. John Austin and Dr. Kristal Ehrhardt, who served as committee members for my specialist project. Both members provided me with invaluable feedback and praise on my project.

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succeed and not to give up my dreams--Mom you are my inspiration! To sum up my appreciation for my family's support, words from the song "Kind and Generous" (Merchant, 1998) best describe how I feel.

**KIND AND GENEROUS**

You felt so kind and generous...
I don’t why you keep on giving.
For your kindness—I am in debt to you
For your selflessness—my admiration!
For everything you’ve done—you know I’m bound...
I’m bound to thank you for it.
You felt so kind and generous
I don’t know why you keep on giving
For your kindness—I am in debt to you.
And I never could have gone this far without you!
For everything you’ve done—you know I’m bound...
I’m bound to thank you for it
Oh, I want thank you for so many gifts you gave and all the tenderness;
I want to thank you!
I want to thank you for your generosity, the love, and the honesty that you gave me;
I want to thank you!
Show my gratitude, my love, and my respect for you;
I want to thank you!
Oh, I want to thank you, thank you, thank you, thank you, thank you, thank you, thank you, thank you, thank you, thank you, thank you, thank you, thank you, thank you, thank you, thank you, thank you, thank you...

Pamela M. Radford
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The age of technology has brought about many new developments in the field of psychology and mental health, peaking interest and encouraging research in various domains. During this era, Attention Deficit/Hyperactivity Disorder (ADHD; American Psychiatric Association, 1994) has become one of the most commonly diagnosed childhood psychiatric disorders and has been the focus of research in such fields as medicine, psychology, and education (Reid, Maag, Vasa, & Wright, 1994). According to national statistics, approximately 3% to 5% (Barkley, 1990) or 1.4 to 2.3 million (U. S. Census Bureau, 1998) of school-aged children are currently meeting diagnostic criteria for ADHD, and the number of students being diagnosed appears to be an increasing trend (Safer, Zito, & Pine 1996; Safer & Krager, 1988). More specifically, approximately one student out of 20 in a general education classroom will be diagnosed with ADHD or exhibit ADHD related behaviors (DuPaul & Stoner, 1995). The manifestation of this disorder tends to be more prominent in males than females (i.e., approximately 3:1 ratio in community-based samples) (Szatmari, Offord, & Boyle, 1989). The higher prevalence rate for males may be due,
in part, to the fact that they are more likely to be referred for other disruptive behaviors (e.g., aggression, noncompliance) (Barkley, 1990; DuPaul & Stoner, 1994).

Students diagnosed with ADHD typically exhibit behaviors of inattention, impulsivity and hyperactivity. On account of difficulties with inattention, students with ADHD may have problems sustaining attention to tasks, thus compromising task completion, test performance, organization and study skills, and hindering the ability to follow teacher instructions (Barkley, 1990; DuPaul & Stoner, 1994). Inattention to teacher lectures and/or group discussions can further jeopardize academic performance for these students. In addition to problems with inattention, students with ADHD may experience problems with poor impulse control that not only interfere with their learning, but can also impede the learning of others (i.e., classmates). For example, impulsivity might manifest itself as vocalizations at inappropriate times (e.g., talking with peers, calling out answers without raising hand or waiting to be called on), as well as frequent mistakes on academic tasks due to careless responses to questions and/or a failure to review answers. Finally, students with ADHD may exhibit behaviors that might be associated with hyperactivity that interfere with school success (Alto & Frankenberger, 1995; Cantwell & Baker, 1991), these include constant movements (e.g., tapping a pencil, rocking in chair, tapping feet, out of seat, and playing with objects unrelated to a specified task). If behaviors that are typically exhibited by students diagnosed with ADHD persist at unforeseen rates or intensities, classroom activities or instruction may be compromised (DuPaul & Stoner, 1994). Consequently, the manifestation of these core behaviors (i.e., inattention, impulsivity,
hyperactivity) tend to correlate frequently with academic underachievement, high rates of noncompliance and aggression, and disturbances in peer relationships (Barkley, Fischer, Edelbrock, & Smallish, 1990; Guevremont, 1990).

Approximately 50% of students diagnosed with ADHD qualify for special services in school settings under the Individuals with Disability Education Act (IDEA: Department of Education, 1997) (e.g., learning disability, LD; behavior disorder, BD; other health impairment, OHI) (Reid et al., 1994) and/or meet diagnostic criteria under the Diagnostic and Statistical Manual of Mental Disorders (4th ed., DSM-IV; American Psychiatric Association, 1994), such as Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD) (American Psychiatric Association, 1994). As students with ADHD reach adulthood, several other problems persist (e.g., inability to keep a job, forgetfulness, disorganization, poor marital relationships) (Barkley, 1990). Given the potential for later life difficulties for students with ADHD who exhibit problem behaviors in school settings, it is essential that school personnel attempt to ameliorate educational concerns.

Educational Services for Students With ADHD

Currently, students who meet diagnostic criteria for ADHD do not automatically qualify for special education services under existing categories supported by IDEA '97. Students with ADHD who do receive services may do so because they qualify under other diagnostic categories (e.g., LD, BD, OHI; Reid et al., 1994). Alternatively, when behaviors associated with ADHD occur to an extent that adversely
impacts educational attainment, students are recognized as disabled under Section 504 of the Rehabilitation Act. Once identified (under Section 504 of the Rehabilitation Act or IDEA) students with ADHD are entitled to special services, due process, and a free appropriate public education. Those students with ADHD who may receive special education services under Section 504 of the Rehabilitation Act or IDEA, despite their identification, will spend most of their time in general education classrooms (Reid, et al., 1994). For example, Reid and colleagues (1994) gathered demographic information on students diagnosed with ADHD (N=177) located in a Midwest state and concluded that, over 80% of students with ADHD from their sample spent most, if not all, of their time in the general education classroom. Not only do these data model the current practice of inclusion, but they also correspond with national statistics that state over 80% of IDEA students spend most of their time in general education settings (U.S. Department of Education, 1990). On account of the large amount of time spent in general education settings, the knowledge and experience by general education teachers is imperative to the educational success of students diagnosed with ADHD.

To date, three empirically-based sources of treatment for students with ADHD are stimulant medication (e.g., Ritalin, Cylert, Dexedrine), behavior management strategies (e.g., time-out, response cost, punishment) and a combination of the two (DuPaul & Stoner, 1994). All of these intervention strategies have been shown to be moderately effective. Still, despite the documented effectiveness of various treatments in reducing symptoms of ADHD, medication has been the favored approach (DuPaul
& Stoner, 1994; Barkley, 1990). Possible reasons for the widespread use of stimulant medication may include ease of implementation, relatively quick improvements (dependent on the type of medication), and the lack of knowledge and resources regarding other intervention strategies of school-based personnel (Reid et al., 1994). Although the use of stimulant medication has become increasingly popular as the main treatment for students diagnosed with ADHD, it is not effective for all children with ADHD. In fact, medication tends to work for approximately 70-80% of school-aged children, and is even lower for pre-school children (Barkley, 1990). Furthermore, the use of stimulant medication alone has been associated with only minimal improvements in academic performance for students with ADHD (e.g., Alto & Frankenberger, 1995). Thus, individual responses to various treatment modalities and/or a combination of such treatment strategies have been documented (Whalen & Henker, 1991), with a combination of stimulant medication and behavior management found to be the most efficacious treatment approach (Barkley, 1990; DuPaul & Stoner, 1994).

Despite the fact that students with ADHD tend to exhibit similar behaviors that lead to a diagnosis (i.e., inattention, impulsivity, and/or hyperactivity) the population as a whole is quite heterogeneous. For example, the effectiveness of stimulant medication as a primary method of treatment varies across age, gender, and race. More specifically, stimulant medication appears to be used most frequently for 8- and 9-year-olds, is least likely to be employed for high school students, and is more frequently (i.e., 5:1 ratio) prescribed for boys than girls (Safer & Krager, 1989; Safer, Zito, & Pine, 1996). In addition, children who attend public schools, as opposed to
private schools, are more likely to be treated with stimulant medications (Brown & Sawyer, 1998). These individual differences to stimulant medication alone warrant a search for further intervention strategies that are idiosyncratic in ameliorating ADHD related behaviors.

Further, diagnostic labels (e.g., ADHD) placed on individuals are usually used to dictate treatment selection (Reid & Maag, 1997; Kratochwill & McGivern, 1996). Studies have shown that various treatments (e.g., self-monitoring, methylphenidate) are effective in reducing problem behaviors associated with ADHD, however, such treatments will doubtfully be effective for all students diagnosed with ADHD.

Typically, labels dictate an umbrella of intervention strategies that are not idiosyncratic in nature, ignoring "what should be the focus of treatment—behaviors" (Reid & Maag, 1997, p. 15). For instance, the DSM-IV follows a structural model of problem-solving (i.e., looking at topographies of behavior), rather than focusing on the etiology or function of behaviors (Kratochwill & McGivern, 1996). Functional assessment is a problem-solving model that focuses on the determining "why" problem behaviors occur and has been cited as an approach superior to traditional psychiatric or school-based diagnostics (DuPaul & Ervin, 1996; Kratochwill & McGivern, 1996; Zentall & Javorsky, 1995). Although diagnostic labels can provide desirable social functions (e.g., legitimize parents concerns, externalize the disorder, ensure special services) (Reid & Maag, 1997), they are only useful if a correct diagnosis informs treatment (Reid & Maag, 1997, DuPaul & Stoner, 1994).
Additionally, behavioral interventions employed in schools are typically based upon traditional methods of classroom management and focus on behavior topographies rather than functions (Kern, Childs, Dunlap, Clarke, & Falk, 1994). These methods often include reinforcement and punishment strategies, as well as other disciplinary approaches (e.g., office referrals) and/or placement of students in more restrictive environments (i.e., special education). Moreover, treatments proposed to be successful can fail due to improper implementation (i.e., poor treatment integrity). These conventional strategies limit opportunities for positive social and learning experiences (Kern et al., 1994), fail to teach students appropriate behaviors (Vollmer & Northup, 1996), and focus on the topographies of behaviors. Interventions are usually matched to behavior topography or predetermined discipline procedures with little regard for identifying "why" problem behaviors occur.

The rationale for utilizing conventional strategies is primarily based on demonstrated success in the literature and/or experience. For example, teachers or other school personnel (e.g., school psychologists) may recommend an intervention based on its success with other student(s) who exhibited topographically similar behaviors. This is problematic because behaviors that have similar topographies can serve different functions for different individuals (e.g., Broussard & Northup, 1995). For example, for one student frequent call-outs during class may be maintained by peer attention; the student calls-out and peers giggle or laugh, providing positive reinforcement in the form of peer attention. Alternatively, for another student, call-outs may be maintained by escaping or avoiding an academic task; the student calls-
out and the teacher sends him/her to time-out or to the office, providing negative reinforcement in the form of escape from the academic task in the classroom. Unfortunately, the same intervention will doubtfully be effective for both students, largely because the function of their behaviors differ (i.e., peer attention vs. escape from academic task). For instance, a potential intervention strategy for the student whose behavior serves to function to escape an academic task, may be to provide frequent breaks contingent upon appropriate task-related behavior (e.g., raising his/her hand, reading the assigned material), as opposed to sending the student to time-out or the office. Alternatively, adjusting the curriculum to the student’s instructional level may also reduce the likelihood of frequent call-outs, if the academic task is too difficult for the student. However, it is improbable that these interventions (i.e., providing breaks or reducing task difficulty) would be effective in reducing the frequency of call-outs during class for the student whose behavior served to function to gain peer attention, because his/her peers will probably still respond to the call-outs with giggles or laughter. Therefore, it is essential to examine the context in which each behavior occurs, linking the intervention strategy to the behavior function and not the topography or what the behavior “looks like” (Vollmer & Northup, 1996).

Interventions that do consider behavior function may focus on teaching replacement behaviors that obtain the same outcome (function), setting up contingencies to support an alternative appropriate behavior that is incompatible with the problem behavior, or altering the context (antecedent stimuli or establishing operations) that set the occasion for or establish motivation for the misbehaviors.
Interventions implemented without consideration of behavior function can become countertherapeutic even when intervention integrity is high (Taylor & Miller, 1997; Broussard & Northup, 1995). Furthermore, when interventions are ineffective, behaviors may become more resistant to new or modified interventions (Iwata, Dorsey, Slifer, Bauman & Richman, 1982).

Increasing demands to provide services to a diverse population of students in inclusive settings is a growing concern in education. Unfortunately, intervention selection methods commonly practiced in school settings expend energy and resources through the placement of diagnostic labels (e.g., LD, BD) on children and/or focus on the implementation of direct interventions based on the topographies, rather than the functions of problem behaviors. Consequently, these methods detour efforts to change situations in a proactive and effective manner, exhausting valuable time and resources. Due to these limitations, there is a need for a process (e.g., functional assessment) that closely links assessment to the selection of interventions and supports the inclusion of students with disabilities (e.g., ADHD) in the least restrictive environment (e.g., general education classroom).

Functional Assessment

Functional assessment is a systematic method for identifying variables that set the occasion for the occurrence or nonoccurrence of problem behaviors (O'Neill, et al., 1997). Since this methodology does not focus on topographies of behavior, it can lead to more desirable and effective outcomes. Further, functional assessment has been
found to be an effective method for guiding the selection of classroom interventions for students who present a variety of problem behaviors (O’Neill, Horner, Albin, Storey, & Sprague, 1990). This structured problem-solving process allows for school practitioners to identify variables systematically related to the occurrence of specific target behaviors, therefore, increasing the likelihood of intervention effectiveness (e.g., Dunlap & Kern, 1996; Vollmer & Northup, 1996), and enhancing treatment utility. In addition, functional assessment is endorsed by national organizations (i.e., National Association of School Psychologists, National Institutes of Health, National Association of State Directors of Special Education), and mandated by federal law (IDEA ‘97).

Not only has functional assessment been empirically supported as best practice for intervention design (Vollmer & Northup, 1996), schools are now required (Section 615 (k)(1)(B); IDEA ’97) to conduct functional behavioral assessments for students exhibiting behavioral problems to guide the development of positive behavioral support plans. By utilizing a functional assessment process, school personnel can provide documentation of intervention strategies implemented prior to making a referral to more restrictive placements (e.g., special education). Too often school personnel have exhausted their efforts and resources, implementing intervention strategies in a trial and error methodology, only to be ineffective in observing a change in behavior. Functionally-based interventions have proven to be more effective than the simple “least to most intrusive” approach to treatment selection, supporting pre-referral interventions (Taylor & Miller, 1997). Further, the functional assessment
process can assist in the development of individualized education plans by identifying functional relationships between classroom variables (e.g., curricular modifications) and student behavior (Dunlap, et al., 1993), providing social validity of its use within educational contexts. Generally speaking, the aim of conducting a functional assessment is to bring some understanding to problem behaviors and situations that are quite "baffling or chaotic" (O’Neill et al., 1997, p. 3).

Review of the Functional Assessment Literature

As stated by O’Neill et al. (1997), five primary outcomes can be expected when utilizing a functional assessment methodology to design intervention strategies for problem behaviors. These outcomes include (1) a clear description of the problem behaviors, (2) identification of environmental variables that predict the likelihood of the occurrence or nonoccurrence of problem behaviors, (3) identification of consequences that may maintain the behaviors, (4) development of possible hypotheses that describe the circumstances under which the behaviors are most or least likely to occur, and (5) empirical support (obtained through manipulation of environmental variables and direct observations) for the hypotheses.

The terms "functional assessment" and "functional analysis" are used to describe the methods employed to assess the function of behaviors, with functional analysis usually being a component of functional assessment (Horner, 1994). Often these terms are used interchangeably, hence it is necessary to clarify their meanings. For the remainder of this paper, functional assessment will be defined as a process of
gathering information to assess the relationship between environmental variables and
the occurrence or nonoccurrence of a problem behavior (Dunlap et al., 1993). Several
procedures and instruments are included in functional assessment to facilitate the
identification of maintaining variables and intervention strategies. For example,
functional assessment may include descriptive techniques, such as, (a) direct
observations (O’Neill et al., 1990), (b) teacher interviews (O’Neill et al., 1990), (c)
student interviews (Kern et al., 1994), (d) rating scales (Lewis, Sugai & Scott, 1994),
and (e) record reviews (e.g., Umbreit, 1995) to gather information on target behaviors
and potential predictor and maintaining variables. Another procedure that may be
included in the functional assessment process involves the direct manipulation of
potential predictor and/or maintaining variables, otherwise known as functional
analyses.

For the purpose of this paper, functional analysis, or experimental analysis, will
be defined as “the experimental manipulation of environmental variables in order to
identify factors that maintain or suppress the target behavior” (Vollmer & Northup,
1996, p.76). These procedures provide information to support or discredit
hypothesized functions of behaviors or possible intervention strategies that are
developed through descriptive assessment methods. Environmental variables that are
often manipulated in educational settings include antecedent variables, such as
curricular revisions (Dunlap & Kern, 1996; Dunlap et al., 1991) and consequent or
maintaining variables (e.g., attention, escape). Previous classroom-based functional
analyses indicated three typical consequences related to aberrant behavior. These
included teacher attention, peer attention, and escape or avoidance from tasks or demands (e.g., Broussard & Northup, 1997; Vollmer & Northup, 1996).

In schools, the manipulation of environmental variables have been assessed in analog (e.g., Broussard & Northup, 1997; Umbreit, 1995) and natural (e.g., Lewis & Sugai, 1996; Repp & Karsh, 1994) contexts. Analog experimental analyses may not be desired because the conditions are contrived situations that differ from the actual setting and normal daily routines of a classroom environment. Consequently, conducting functional analyses in analog settings may impede upon the true function(s) of the problem behavior, since the perceived functions, in part, may be due to the context in which the behaviors were tested, rather than the natural environmental conditions (Sasso et al., 1992). Manipulation of environmental variables in the natural setting (e.g., classroom) where the problem behavior occurs can ensure greater treatment utility of the functional assessment process. However, although naturalistic settings are optimal for accurately determining functions of behavior, they may not always be acceptable or feasible (Mace, Lalli & Lalli, 1991) in applied settings (e.g., schools). For example, it may be unacceptable to manipulate variables in order to test out potential hypotheses when those variables set the occasion for inappropriate behaviors to occur. Or it may not be feasible for school personnel (e.g., teachers) to conduct functional analyses in school settings since such a process may require “research-like skills” (O’Neill et al., 1997).

Despite its recent novelty to school practitioners, functional assessment is not a new concept (e.g., Bijou, Peterson, & Ault, 1968; Cone, 1997). A review of the
functional assessment literature (Blakeslee, Sugai, & Gruba, 1994), indicated that previous studies have primarily focused on non-school (e.g., clinical) settings, developmentally disabled children (Iwata, et al., 1982), and high intensity behaviors (e.g., self-injury, aggression). More recently, the trend has shifted to the application of functional assessment procedures to school settings (e.g., Repp & Karsh, 1994; Sasso et al., 1992), low intensity behaviors (e.g., non-compliance, off-task behaviors) (e.g., Lewis & Sugai, 1996; Broussard & Northup, 1995), and students with average intellectual abilities (e.g., Kern et al., 1994; Umbreit, 1995) in both general (e.g., Lewis & Sugai, 1996) and special (Sasso et al., 1992; Dunlap et al., 1991) education classrooms. Further, this process of linking assessment to intervention has proven utility in evaluating pre-referral interventions (e.g., Broussard & Northup, 1995), peer interventions (e.g., Broussard & Northup, 1997), and time-out procedures (Taylor & Miller, 1997) in school settings.

The efficacy of functional assessment has been documented across students with various disabilities including young children (e.g., Broussard & Northup, 1996; 1997; Lewis & Sugai, 1994; Umbreit, 1995) and adolescents with ADHD (Ervin, Kern, Clarke, DuPaul, Dunlap, & Friman, 1998), and those with severe emotional and/or behavioral disorders (e.g., Dunlap et al., 1991; Ervin et al., 1998). For example, Dunlap et al., (1993) assessed the applicability of functional assessment procedures with five students described as having emotional and behavioral disorders. Based on descriptive assessments, several hypotheses were developed regarding the relationship between classroom variables and the presence/absence of target behaviors.
Functional analyses demonstrated that certain classroom variables exerted control over particular problematic behaviors for each student (Dunlap et al., 1993).

**Functional Assessment and Students With ADHD**

To date, several functional assessment studies have evaluated the utility of this methodology with students diagnosed with ADHD (Ervin et al., 1998; Broussard & Northup, 1997, 1995; Lewis & Sugai, 1996; Northup, Broussard, Jones, George, Vollmer, & Herring, 1995; Umbreit, 1995). For example, Northup and colleagues (1995) conducted brief functional analyses with 3 boys diagnosed with ADHD. Through analog experimental analyses, Northup and colleagues (1995) concluded that the frequency of problem behaviors for each student was higher when peer attention was contingent on problem behavior. Similarly, Broussard and Northup (1995) conducted brief functional analyses in a general education classroom (i.e., the natural setting) with a 6-year-old boy diagnosed with ADHD. Results indicated inappropriate behaviors were maintained by escape from academic tasks. Lewis and Sugai (1996) also demonstrated the applicability of functional assessment to students with ADHD in the general education classroom. A 9-year-old boy with ADHD referred for high rates of off-task behavior, inappropriate peer interactions, and non-compliance with teacher directions was found to be off-task more often when placed with peers who attended to his behaviors and under low rates of teacher attention. In addition, Umbreit (1995) manipulated environmental variables in both analog and natural contexts in a general education classroom to determine behavior function for disruptive behaviors exhibited
by an 8-year-old male with ADHD. Results indicated that his behavior was maintained by escape from tasks and social attention from peers. The intervention implemented was effective in reducing disruptive behaviors and was rated with high treatment acceptability by the teaching staff. Ervin et al., (1998) demonstrated the utility of the functional assessment process to 2 adolescent males with a comorbid diagnosis of ADHD-ODD. This study examined the effectiveness and acceptability of using adjunctive assessments (e.g., curricular manipulations) in the selection of intervention strategies. This study demonstrated that it may not always be necessary to manipulate behavior function to identify effective and acceptable interventions in the classroom. Overall, these investigations demonstrate treatment utility of functional assessment to young children (e.g., Broussard & Northup 1995; 1997; Lewis & Sugai, 1996) and adolescents (e.g., Ervin et al., 1998) with ADHD.

Several of these studies (e.g., Broussard & Northup, 1995; Umbreit, 1995, Ervin et al., 1998) evaluated teacher perceptions of the acceptability and feasibility of classroom-based interventions and, in general, teachers rated interventions as acceptable and feasible. However, functional assessment procedures were rated as moderately acceptable in the general education classroom (e.g., Broussard & Northup, 1995). Across these studies, the identification and manipulation of environmental variables was done with extensive support from external consultants in both analog (Northup et al., 1995; Broussard & Northup, 1997) and natural (e.g., Ervin et al., 1998, Lewis & Sugai, 1996) contexts. That is, environmental variables were manipulated by the investigator (consultant) or by the classroom teacher with support
from external consultants. This indicates that it may not be practical for school personnel (e.g., teachers) to conduct such assessment procedures (e.g., gather descriptive data, manipulate variables) in the general education setting without extensive support from external consultants. However, it was demonstrated that it may not always be necessary to manipulate behavior function to identify effective and acceptable interventions (Ervin et al., 1998). Given the limited time and resources available to school personnel, further empirical evaluation of the efficacy of the functional assessment model is warranted.

Streamlining Functional Assessment Practice to Schools

As functional assessment research moves towards expanding these procedures to students with behavioral problems (e.g., ADHD) (e.g., Ervin, et al., 1998; Broussard & Northup 1996; 1997) who are included in general education settings, the feasibility and acceptability of this process to school practitioners will become increasingly important (Broussard & Northup, 1995; Lalli, Browder, Mace, & Brown, 1993). That is, functional assessment procedures can be a time-consuming and extensive process given the limited time and resources available to school practitioners. Furthermore, the level of expertise required to conduct functional assessment procedures in schools may include "research-like skills" and/or an extensive background in behavior analysis (O’Neill et al., 1997). However, these skills are typically not an emphasis in training programs for general education teachers.
Although conducting functional assessments may require extensive training, it has been demonstrated that school personnel (e.g., teachers) can be trained to effectively select interventions based on this process (e.g., Lalli et al., 1993; Sasso et al., 1992). For example, Lalli et al. (1993) trained special education teachers to observe and record problem behaviors exhibited by students in their classroom. Teachers successfully developed hypotheses for "why" problem behaviors were occurring and evaluated these hypotheses through brief experimental analyses. As a result, teachers implemented effective interventions and rated the functional assessment process as acceptable and feasible. However, this study was accomplished through extensive support and guidance from a consultant (i.e., the primary investigator).

When incorporating the functional assessment process within existing school practices, one needs to be careful not to compromise the treatment utility of the process. One method in which treatment utility has been addressed is through involving participants (i.e., teachers, students, parents) in the functional assessment process (Umbreit, 1995; Kern et al., 1994; Ervin et al., 1998). Problem behaviors can often be complex and be associated with a wide range of environmental variables. Including informants (e.g., parents, teachers, students) who have observed problem behaviors over time can potentially facilitate the development of hypotheses (Kern, Dunlap et al., 1994). Additionally, various informants can validate information collected from other sources and may provide consultants, or school practitioners, with subjective information that otherwise would be unavailable. Thus, for functional
assessment, as with any assessment model, it is desirable to use a multi-modal
approach (i.e., multi-sources, multi-settings, multi-methods).

A way to involve participants in the functional assessment process is through
semi-structured interviews. For example, student interviews (e.g., Kern et al., 1994;
Reed, Thomas, Sprague, & Horner, 1997) have been designed to assess certain
contexts (e.g., math, science, recess) and environmental variables (e.g., attention,
tangible, escape) in which target behaviors typically occur. Information collected
through these interviews can be used to validate teacher report, direct observations,
and possibly provide supplemental information. To illustrate, Kern and colleagues
(1994) evaluated the use of a semi-structured student interview with an 11-year-old
boy with emotional and behavioral challenges. From the descriptive information
obtained, five hypotheses were developed and tested. One hypothesis was solely
developed from the information obtained from the student interview. The student
expressed that he could work more effectively and efficiently if he worked in a study
carrel. This hypothesis was confirmed through a brief experimental analysis and was
added as a component to the intervention.

Despite empirical support, both conceptual and practical limitations can hinder
stated that “one of the most important limitations of a comprehensive functional
assessment is that the procedures are time-consuming and resource-intensive” (p.
617). Further, Vollmer and Northup, (1996) noted functional assessment may be
impractical for school personnel to conduct due to the limited resources available and
the amount of time needed to conduct an extensive functional assessment. As the functional assessment process moves to general education settings, it is necessary to identify what methodological procedures are necessary for intervention effectiveness, acceptability, and feasibility. The use of adjunctive assessments to develop effective interventions (Ervin et al., 1998) is significant because it may not always be feasible or acceptable to manipulate environmental variables that may occasion the occurrence of problem behaviors. For instance, for low-rate, high-intensity behaviors, such as aggression, it may be unethical to set up contingencies to trigger aggressive behavior to determine behavior function(s). Additionally, the low-rate occurrence of these behaviors makes it problematic to gather descriptive data through observations. That is, when an aggressive incident occurs approximately once a month, it would probably not be feasible for school practitioners to monitor the occurrence of this behavior on a frequent basis. Cameron, Maguire, and Maguire (1998) conducted a functional assessment on the low-rate aggressive behavior exhibited by a 24-year old male with a primary diagnosis of autism. This study illustrated the use of antecedent manipulations to decrease the rate of aggression. However, throughout the study, observations were conducted for 16 hours per day in order to observe the frequency of aggressive incidents. Hence, descriptive methods, such as record reviews and/or interviews, utilized to gather information on potential predictor and/or maintaining variables may be more practical for school practitioners.

To date, the application of functional assessment methodologies has primarily focused on high-rate behaviors (e.g., self-injury, non-compliance) (Blakeslee, Sugai, &
Gruba, 1994; Mace, Lalli, & Lalli, 1991). For those behaviors that may occur a few times per day, month, or year, "a methodology for analyzing low-rate behaviors is needed" (Mace, Lalli & Lalli, 1991, p. 176). In particular, Luiselli (1996) noted that more research is needed to evaluate strategies for documenting function through descriptive assessments. For example, Kennedy and Meyer (1996) examined the role of distal setting events or establishing operations (e.g., sleep deprivation) on the occurrence of aggressive behavior through brief analog manipulations. However, this may only be possible in school settings with the support of external consultants which may be too costly to access given existing resources in schools.

Due to the occurrence of low-rate, high-intensity problem behaviors often observed in schools, it is essential to determine the reliability and validity of the use of indirect methods of assessment (e.g., record reviews, interviews) (Blakeslee, Sugai, & Gruba, 1994). Research thus far, has demonstrated the utility of teacher (O'Neill et al., 1990) and student interviews (Kern et al., 1994) in the development of hypotheses. However, the utility of record reviews in the functional assessment process still needs to be addressed. If this descriptive method proves to provide utility to the process, it may have practical implications for streamlining functional assessment to general education settings.

As stated by Horner and Carr (1997), "functional analysis is often impractical because of the level of expertise it requires, the time commitment involved, and the disruption it causes when variables that set off problem behavior are purposely introduced to test hypotheses" (p. 92). Therefore, several lines of inquiry on the
practicality and feasibility of functional assessment procedures in general education settings needs to be addressed in order to facilitate streamlining practice to schools.

Summary

Despite evidence of the utility of functional assessment in schools, further research is needed to fully incorporate the use of these procedures into existing school practices. We need to focus our research efforts toward developing effective models that are practical and feasible within the constraints of school environments. Currently, the research to date on the application of functional assessment in school settings has demonstrated treatment utility (e.g., Umbreit, 1995; Brossard & Northup, 1996; 1997; Ervin, et al. 1998) for children and adolescents with ADHD. However, these studies were conducted with support from consultants who primarily gathered the descriptive information and manipulated variables, and designed intervention strategies collaboratively with school staff (e.g., teachers). This raises the question of "how effective would school personnel trained in functional assessment be in implementing the functional assessment process within the constraints (e.g., time, resources, support) of the public schools?"

Thus, this study sought to extend the research with ADHD students in the general education setting, utilizing typical resources available to school personnel and to examine the utility of descriptive assessment methods (e.g., record reviews) in determining the function of problem behaviors. More specifically, within this investigation the following research questions were addressed:
1. Will functional assessment lead to effective, feasible and acceptable interventions for students with ADHD in general education settings utilizing existing school resources?

2. Do students with ADHD provide additional information not obtained through direct observations and teacher interviews?

3. Is the information gathered via student interviews used in hypothesis development and intervention design?

4. Do teachers and students in the general education classroom rate the functional assessment process as acceptable and feasible?

5. What functional assessment procedures (e.g., descriptive methods) led to effective outcomes and are feasible and practical to conduct within the constraints (i.e., limited time and resources) of the general education setting?
CHAPTER II

METHODOLOGY

Participants and Settings

The students who participated in this investigation were two adolescent boys who were referred by their general education classroom teachers for behavior problems that interfered with their academic and social performance. Both participants were diagnosed with Attention Deficit/Hyperactivity Disorder (American Psychological Association, 1994) by their primary physicians. All functional assessment procedures took place within the student’s general education setting.

Andy

Andy was a 12-year-old Caucasian boy who attended fifth grade. During this investigation Andy was taking 18.75 mg of Cylert once per day. Prior to the study, Andy had taken methylphenidate (i.e., Ritalin) at various dosages and was reported to be ineffective in reducing problem behaviors. Andy had average intellectual functioning and communication skills, as indicated by previous screening of school staff. His academic performance was below grade level (i.e., at least 1-2 grade levels according to teacher report) in all subject areas.
Andy attended an intermediate school (fourth-sixth grade) located in a suburban public school district in the Mid-West. All functional assessment procedures took place in Andy’s general education classroom and during academic instruction. The classroom contained a general education teacher and 24 students, including several students that received special education services. Within the classroom, four other students, in addition to Andy were also diagnosed with ADHD. However, Andy’s teacher reported that she had the most difficulty managing Andy’s inappropriate behaviors. All intervention procedures were conducted by Andy’s general education teacher.

Matt

Matt was a 13-year-old Caucasian boy in the fifth grade. He was diagnosed with ADHD by his primary physician and was taking 15 mg of Ritalin twice daily during this investigation. Matt had a history of medical conditions (e.g., otitis media, pneumonia) and underwent several minor operations. Also, he was diagnosed with Milroy’s Syndrome—a rare hereditary disorder in which swelling of the feet may occur resulting in extreme discomfort and/or possible heart complications. According to school records, Matt was intellectually functioning in the low average range (i.e., Full Scale IQ score of 74) according to the Wechsler Intelligence Scale for Children-Third Edition (Wechsler, 1991). His communication skills and abilities were reportedly poor and he previously (i.e., grades first through third) received special education services under the category of Speech and Language Impaired.
Matt's school records indicated he had been retained in the first and fourth grades in a previous school district. When Matt arrived at the school where this investigation took place, he was placed in the fifth grade rather than the fourth grade where he had been retained in the former school district. Prior to changing schools, Matt was evaluated to determine if he qualified for special education services under a Specific Learning Disability, however, test results indicated that Matt was academically functioning within his cognitive ability level (i.e., slightly below average). At the school in which this investigation took place, Matt received part-time special education services (resource room) under the category of Physically and Otherwise Health Impaired in the areas of math, reading, writing, and spelling.

Matt's recent school transfer placed him in a rural Mid-Western elementary school in which this investigation took place. Primarily, the study took place on the playground, during recess activities. Matt's school day included a total of three recess opportunities throughout the day (i.e., before school, after lunch, and at the end of the day). The playground was supervised by two hired aides and at least one general education teacher (who varied due to rotations). Approximately 85 students were on the playground at any given time. The playground covered a large area of land, consisting of a small track, two small basketball courts, a soccer/football field, and a jungle gym with swings and monkey bars. Students had access to game equipment (e.g., basketballs, soccer balls) during recess. The size and layout of the playground made it difficult for the school staff to effectively supervise students during recess activities.
Dependent Measures, Interobserver Agreement and Treatment Integrity

Andy

Andy was referred by his teacher for his off-task/disruptive behaviors, as well as his poor social interactions with peers. Off-task/disruptive behaviors included staring out the window, inappropriate verbalizations, failure to follow directions, and inability to stay seated. The target behavior selected for Andy was active engaged time which was defined as writing, reading aloud, raising his hand, answering questions and other “active” responding appropriate to the context or task at hand. This behavior was chosen based on information obtained through informal classroom observations which revealed that Andy was primarily on-task passively (e.g., staring at the teacher or his book) during classroom activities, as opposed to being actively engaged (e.g., raising his hand, asking questions appropriate to the instructional task). Instructional activities in which observations were conducted provided ample opportunities for actively engage behavior to occur. That is, Andy’s teacher frequently asked questions and planned small group work and independent seatwork that required talking to peers and/or completing worksheets.

Matt

Matt’s referral concerns included aggression towards peers, inappropriate vocalizations (i.e., swearing), poor communication skills, and low academic functioning. Aggression towards peers was selected for a primary target due to the
severity and intensity of this behavior. Aggression toward peers was defined as any physical altercation with a peer, such as pushing, kicking, hitting or scratching towards a peer. Informal observations indicated that Matt routinely aggressed towards peers when he was approached with negative peer initiations, such as name calling (e.g., “You idiot!”) or physical approaches made by peers (e.g., pushing, pretending to throw objects). Based on this information, additional behaviors (i.e., negative peer approaches, positive and negative responses) were targeted to evaluate the occurrence of Matt’s aggressive acts towards peers. Negative peer approach was defined as any physical (e.g., pushing, kicking, making faces, pretending to throw an object) or verbal (e.g., calling names, swearing, giggling at Matt) act directed toward Matt that was provoking or taunting in nature. Positive responses were defined as any appropriate response to a negative peer approach, such as walking away, ignoring negative comments, or making verbal comments that were neutral (e.g., “The ball is over there”, “The score is 0-0”) in nature. Negative responses were defined as any inappropriate response to a negative peer approach, such as pushing, kicking, hitting, scratching, or swearing at or towards a peer.

**Teacher Report Form**

This semi-structured interview (adapted from Dunlap et al., 1991 and Spectrum Center, 1996) was conducted with each participant’s teacher to gather descriptive information on target behavior(s). The interview form assessed the context in which problem behavior(s) occurred by asking the teachers to evaluate when,
where, and with whom the problem behavior was most likely and least likely to be observed (see Appendix A). In addition, teachers were asked to rate, on 5-point Likert scale, behavior function (e.g., gain access to teacher attention, escape a teacher-directed task or activity). The interview form also gathered general background information on the student (e.g., medical history, strengths and weaknesses).

**Student Report Form**

This semi-structured interview (adapted from Kern, Dunlap et al., 1994 and Spectrum Center, 1996) was utilized to gather descriptive data on the target behavior(s) directly from the student. The interview form assessed potential predictor variables (e.g., settings, subjects areas, with certain peers or adults, task difficulty) that may have occasioned the occurrence or nonoccurrence of problem behaviors (see Appendix B). To determine potential behavior function, students were asked to rate, on a 5-point Likert scale, why they believed they engaged in their problem behavior. Additionally, the form evaluated student preferences for potential reinforcers.

**Functional Analysis of Behavior Observation Data Sheet (FABODS)**

The FABODS (adapted from Shapiro, 1996 and O'Neill et al., 1990), was used by trained observers (trained to 80% criterion) in the general education setting (e.g., classroom, playground), and served to provide information regarding the context in which the target behavior(s) occurred. This partial interval recording observation code (see Appendix C) was divided into 15 second intervals, with 10 seconds to
observe and 5 seconds to record. Generally, each observation lasted approximately 25 minutes in duration. Target behaviors chosen for direct observation were based on the information gathered from descriptive assessment procedures (e.g., record reviews, interviews). The information obtained from this code was used to reinforce data collected from teacher and student interviews, as well as in the development of hypotheses.

**Teacher Satisfaction Ratings**

A questionnaire was administered to each general education teacher involved in this study to determine their overall satisfaction of the functional assessment process and outcomes (i.e., intervention effectiveness). This 12-item questionnaire (see Appendix D) was based on a 7-point Likert scale and included a section for teachers to provide additional comments or suggestions. Specific questions assessed intervention effectiveness (e.g., “On-task performance improved”, “Work productivity improved”), acceptability and feasibility of the intervention (e.g., “The intervention was time-consuming to implement”, “This intervention fit nicely into my classroom routine”), and satisfaction with the functional assessment process (“I would like to be involved in this process again”).

**Student Satisfaction Ratings**

An 8-item questionnaire, based on a 7-point Likert scale, was administered to all student participants. This questionnaire (see Appendix E) was designed to assess
student opinions on the effectiveness of the intervention strategy (e.g., “My behavior improved during the intervention”, “I got in more trouble in class during the intervention”), in addition to their involvement in the functional assessment process (e.g., “I liked being involved in designing the intervention”).

**Daily Student Performance Rating Scale: Teacher Report Form**

This rating scale was administered to Andy’s teacher on a daily basis during both baseline and intervention conditions to further assess any observed change in his behavior throughout this investigation. Andy’s teacher rated 6 statements on 6-point Likert scale from “1” (not at all) to “6” (very much). Specific behaviors assessed through this scale include following classroom rules, work quality, work completion and student effort (see Appendix F).

**Interobserver Agreement**

Prior to this investigation, independent observers were trained to 80% agreement on the data collection procedures (i.e., FABODS) to ensure the reliability of the data collected via direct observation. Interobserver agreement was calculated by the number of agreements divided by the total number of agreements plus disagreements and multiplied by 100. For Andy, interobserver agreement for active-engaged behavior was collected during 31% of the observations across conditions (i.e., baseline and frequent teacher attention). During baseline conditions, average total, occurrence, and nonoccurrence agreements were 100%, 100%, and 100%,
respectively. During intervention evaluation, average total, occurrence, and nonoccurrence agreements were 92%, 83%, and 86%, respectively. For Matt, interobserver agreement for negative peer approaches, positive responses to negative peer approaches, and negative responses to negative peer approaches were collected on 28% of the observations across conditions (i.e., baseline and peer buddy intervention). During baseline conditions, total, occurrence, and nonoccurrence agreements for negative peer approaches were 98%, 67%, and 98%; positive responses to negative peer approaches were 86%, 50%, and 84%; and negative responses to negative peer approaches were 98%, 100%, and 100%, respectively. During intervention evaluation, total, occurrence, and nonoccurrence agreements for negative peer approaches were 100%, 100%, and 100%; positive responses to negative peer approaches were 97%, 60%, and 97%; and negative responses to negative peer approaches were 100%, 100%, and 100%, respectively.

Treatment Integrity

Through direct observations procedural integrity data were collected on the manipulation of contextual variables to determine the extent to which the general education staff implemented the procedures as planned. For Andy, procedural integrity was calculated by dividing the number of intervals in which the variable was manipulated by the number of intervals in which the opportunity to manipulate the variable was present. For Matt, the occurrence and description (e.g., peer buddy proximity, verbal comments) of manipulated variables were recorded on the FABODS.
Functional Assessment Procedures

Functional assessment procedures employed involved descriptive assessments, hypothesis testing and intervention development based on methods described in the literature (e.g., Dunlap et al., 1991; Kern et al., 1994). Due to the nature of this study to focus on incorporating the functional assessment process into existing school practice, functional assessment procedures were conducted utilizing existing school-based resources with minimal support from the consultant. More specifically, the consultant assisted school personnel in the collection of descriptive data, conduction of observations across general education settings, and in the analysis of data collected. Both general education teachers participated in all phases of the functional assessment process through the use of a collaborative consultation model.

Descriptive Assessment and Hypothesis Development

Descriptive assessments involved interviewing the teacher (adapted from Dunlap et al., 1991; Spectrum Center, 1996) and student (adapted from Kern, Dunlap et al., 1994; Spectrum Center, 1996), reviewing student records, and conducting direct observations in the general education setting via the FABODS. The information gathered through these assessment devices were compiled to develop plausible hypotheses for the occurrence and nonoccurrence of problem behaviors. Each hypothesis was developed based on at least two convergent sources (e.g., direct observation and interviews) of information and included variables that the teacher or
general education staff member could manipulate within the natural context in which
the problem behavior occurred. Hypotheses were developed collaboratively with the
teacher, student and consultant.

Hypothesis Testing and Intervention Development

Each hypothesis generated in the descriptive assessment phase was empirically
tested through brief manipulations of environmental variables. All manipulations were
executed by the classroom teacher or general education support staff and occurred in
the natural context in which the behavior was observed. Prior to any manipulation of
variables, baseline data (i.e., typical conditions within the school setting) were
collected on the occurrence/nonoccurrence of the problem behavior. Once a stable
baseline was observed, variables (i.e., hypothesized intervention strategies) were
briefly alternated (Northup & Broussard, 1995) to determine their affects on the
problem behavior. Data collected through systematic observations (i.e., FABODS)
were graphed and evaluated by visual analyses. After empirical validation of the
techniques, intervention recommendations were made to the teacher and general
education support staff.

Experimental Design

For each participant, a within subjects or single case experimental design
(ABAB design) was utilized to determine the effects of the variables manipulated
during the study, in which both participants served as their own controls. By utilizing
a reversal design (Kazdin, 1982), it allowed the investigators to assess if the behavior of interest functioned as hypothesized. Furthermore, it served to demonstrate experimental control between the manipulation of the independent variables and the dependent variable (i.e., the target behavior).
CHAPTER III

RESULTS

Descriptive Assessment and Hypothesis Development

Based on descriptive information, it was hypothesized that Andy’s inappropriate behaviors were maintained by gaining attention from adults (i.e., teacher) and peers. During the teacher interview, Andy’s teacher reported that his off-task behaviors seemed to occur more frequently during independent seatwork and groupwork, and were less likely to occur during “hands-on” activities (e.g., science experiments, math, gym). She also indicated that his off-task behaviors appeared to function to obtain attention, primarily adult attention. At the end of the school day, Andy would often request one-on-one assistance from his teacher to aid in completion of his work, however, she was unable to stay after school with him on a daily basis. His teacher reported that Andy’s incomplete work was a result of inappropriate behaviors he emitted throughout the school day. Further, Andy’s teacher reported that she often had to reprimand Andy (e.g., tell him to get back to work, move his seat closer to her desk) for his disruptive behaviors due to complaints from peers (e.g., "I can't concentrate because Andy won't stop talking", "Andy keeps bothering me").
The subject areas (i.e., reading, writing, social studies) identified by Andy to be the most difficult were consistent with information gathered from the teacher interview. During the student interview, Andy stated only sometimes people noticed when he was on-task. He also reported that when he engaged in inappropriate behaviors (e.g., talking to peers, playing with objects, etc.), his teacher frequently said something to him (i.e., verbal reprimands) or moved his seat towards the back of the room or in the hallway. When asked what the teacher could do to help him stay on-task, Andy reported that she could "say something to him" when he was doing a good job.

Informal observations indicated that teacher attention occurred at very low rates for appropriate behavior and frequently for inappropriate behaviors. In fact, teacher attention occurred at zero rates for appropriate behaviors during baseline observations, despite the fact Andy occasionally raised his hand in an appropriate manner. When the teacher was asked about this matter, she reported she often did not call on him for fear that he would give an incorrect or inappropriate answer (e.g., talk about something not related to the question or draw a blank on what he was going to say). She reported, when she did call on him, other students in the class became restless and irritated due to his irrelevant responses.

Descriptive information indicated that peer attention might also play a role in the maintenance of Andy’s off-task behaviors. During the student interview, Andy reported that one behavior that usually got him into trouble was talking to peers (e.g., asking questions, making comments). Direct observations indicated that Andy often
initiated interactions with his peers during independent seatwork and groupwork. Andy’s peers responded to his initiations by providing attention in the form of comments such as “shut-up”, “don’t ask me”, “stop bothering me” or with dirty looks (e.g., scowls, glares).

Based on descriptive information, it was hypothesized that (a) Andy will behave better when provided with brief teacher attention contingent on active engaged behavior, and, (b) Andy will behave better when he receives positive reinforcement, in the form of positive comments about his appropriate behavior, from his peers through a structured format (focused on limiting the occurrence of negative interactions). The classroom teacher and consultant developed these hypotheses together and the teacher conducted direct manipulation of hypothesized controlling variables (i.e., teacher attention) in the student’s general education classroom. Descriptive observations indicated that Andy was primarily passively engaged (e.g., stared at the teacher or his book) during classroom activities, as opposed to being actively engaged (e.g., raising his hand, asking questions appropriate to the instructional task). More specifically, baseline data revealed that Andy spent the majority of his time during classroom instruction passively engaged (M=70.5%, range 70% to 71%) and spent relatively little time engaged in off-task behaviors (M=28%, range 27% to 29%). Consequently, his failure to remain actively engaged may have resulted in poor work completion, hence, active engaged time was targeted to evaluate the effects of contingent teacher attention.
Matt’s primary referral concern (i.e., aggression towards peers) occurred at relatively low rates (i.e., approximately 1 incident per month). Thus, it was not feasible or cost-effective for school personnel to attempt to observe his aggression on a daily basis unless the school hired a person to follow and observe Matt across the entire school day for at least a month. In lieu of these concerns, archival data sources (i.e., office referrals and previous school records) were reviewed in an attempt to gather information regarding potential predictor and maintaining variables surrounding aggression. The comprehensive record review documented aggressive behaviors from the previous and current school years. Although specific data concerning antecedents and consequences surrounding the fights that resulted in office referrals were not available (these were not routinely collected), settings and time of day in which the incidents occurred were documented. In addition, previous intervention strategies (e.g., detention, suspension, parent conferences or parent phone calls) were documented through the record review process. Consistently, office referral data indicated that Matt’s aggressive behaviors occurred exclusively during unstructured activities, such as recess, lunch, gym, and in the hallway (see Figure 1). Matt’s aggressive behaviors were never documented to occur within the classroom.

During the teacher interview, Matt’s teacher confirmed Matt behaved appropriately in the classroom, yet had few positive relationships with his peers. His teacher noted that peers directed an abundance of negative comments toward Matt.
throughout the day. She reported they would taunt him during classroom activities. However, Matt's teacher commented that, in the classroom setting, Matt responded to negative peer initiations by ignoring peers' comments, walking away, or recruiting assistance from his teacher. Further, she noted Matt frequently behaved appropriately during classroom settings by raising his hand, participating in classroom activities, and asking questions.

![Figure 1. Descriptive Summary of the Settings in Which Aggressive Behaviors Occurred Through Review of Documented Office Referral Incidents During the 1996-1997 School Year.](image)

During the student interview, Matt stated he usually aggressed towards his peers during unstructured activities (e.g., gym, recess) to get them to leave him alone and/or to stop calling him names (e.g., “You’re stupid!”). He reported that other
students tended to initiate negative interactions by calling him names, tripping him, or laughing at him. On a 5-point Likert scale of "0" strongly disagree to "5" strongly agree, both Matt and his teacher rated escape from negative peer interactions as the primary function of his aggressive behaviors. In addition, both reported that he tended to appropriately seek adult attention during classroom situations and in other settings when possible. To confirm this information, descriptive observations were conducted during a few class periods (i.e., math and science) and during a few unstructured activities (i.e., lunch, recess, and gym). Classroom observations indicated that Matt frequently interacted with adults and rarely interacted with peers during academic classes. Further, the occurrence of negative peer approaches towards Matt during math and science were infrequent (M = 1.1%, range 0% to 2%). Matt responded to this low rate by ignoring peer comments, seeking teacher assistance, or by moving or leaving his seat. Additionally, Matt’s classroom teachers would often reprimand peers for their inappropriate approaches toward Matt.

Descriptive observations during lunch indicated that Matt sat with one preferred peer away from the other children. Matt and this peer frequently engaged the cafeteria worker in conversation. In addition, Matt was observed to "break" a lunchroom rule and the consequence for doing so was to clean up the lunch room. This allowed Matt the opportunity to converse with the cafeteria worker and avoid going outside for recess. Observations conducted during recess revealed that Matt was the last student picked for sport activities (e.g., soccer, basketball) and had difficulty with his gross motor skills. Other children frequently taunted Matt by
pretending to throw a ball in his face, laughing and pointing at him when he fell, yelling at him when he made a mistake (e.g., "Dummy, you hit it the wrong way"), and sometimes attempting to trip him. In response to these negative peer approaches, Matt was observed to push back at peers, make negative comments (e.g., swear), or mumble under his breath. Peers responded by further commenting to Matt (e.g., "what did you say?" or "come on let's go... do you want a piece of me?").

Documentation of incidents via office referrals revealed that Matt's aggressive acts, although relatively infrequent, were quite serious. For example, on one occasion Matt provided a child a black eye and, on another occasion, a bloody lip. Yet, in both incidents, Matt emerged essentially unharmed physically. Due to the low occurrence of Matt's aggressive behaviors, only one fight was directly observed during descriptive observations. During this observation, Matt had kicked another student, apparently by accident, while playing soccer. Matt's peers proceeded to gang up on him and, at one point, five peers were chasing him around the soccer field taunting him verbally (e.g., calling him names like "stupid", "dummy") and physically (e.g., throwing sand and a soccer ball at him). Interestingly, the peer who happened to be the one who was "accidentally" kicked did not participate in the peer initiated altercation. Although only one fighting incident was actually observed, the information collected confirmed with descriptive data obtained through record review and interviews.

Based on descriptive information, it was hypothesized that Matt's aggressive behaviors were maintained by escape from social interaction with his peers, primarily following the occurrence of negative peer approaches (e.g., teasing, name calling,
and/or physical aggression) during unstructured activities (e.g., recess). During recess, these problems were more likely to occur during large group, gross motor activities (e.g., soccer, basketball), and least likely during individual or small group activities (e.g., playing on the swing set, jump roping).

Due to the severity of Matt’s referral concern, we did not attempt to manipulate situations thought to “set-off” Matt’s problem behaviors to confirm our hypotheses. Instead, several intervention strategies were developed based on the descriptive assessment results. Descriptive observations indicated that Matt rarely engaged in aggressive behaviors in situations wherein teacher monitoring was high and proximity close. More specifically, negative peer approaches occurred on average 19% (range 5% to 30%) of the intervals when adult proximity was low and far, as compared to an average of 3% (range 1% to 5%) when adult proximity was high and close. Thus, it was decided that during recess, an adult should be placed in close proximity to where Matt was playing to decrease the chances that negative interactions would occur or escalate. This strategy was briefly evaluated during recess on two occasions. During these observations, negative peer approaches decelerated to low rates (M=2.3%, range 1.7% to 3%). However, the playground supervisor was unable to efficiently supervise the entire playground while staying in close proximity to Matt. Consequently, adult proximity was not a feasible intervention strategy to implement on a daily basis. Thus, a second intervention strategy was to pre-teach appropriate social skills with modeling and to reinforce appropriate responses to negative peer initiations through the use of peer buddy system and/or through adult feedback. Prior to recess,
Matt’s teacher discussed and modeled with Matt appropriate responses (e.g., ignore comments, seek adult assistance) to negative peer approaches. Additionally, a peer was identified by Matt’s general education teacher to serve as a peer buddy during recess. The identified peer was asked to stay in close proximity to Matt during recess games (e.g., soccer) and to provide phrases of encouragement (e.g., “Don’t listen to them Matt”, “Nice kick Matt!”) when other peers approached Matt with negative comments (e.g., “You dummy, don’t you know how to kick?”) or taunted him with inappropriate physical approaches (e.g., pretended to throw a ball at him, make faces or scowls in his face).

Hypothesis Testing and Treatment Integrity

Andy

The results of the teacher attention hypothesis are presented in Figure 2. The percentage of intervals in which Andy was actively engaged during social studies class was higher when he was provided with frequent teacher attention contingent upon on-task behaviors (M=51.5%, range 31% to 71%) than when teacher attention was contingent upon his off-task behaviors (M=25%, range 1% to 48%). Results supported the teacher attention hypothesis. In addition, teacher academic ratings of Andy’s work completion were evaluated each day at the end of the class period. On a 5-point scale (5 being the highest), teacher ratings of Andy’s daily academic
performance moderately increased during intervention conditions ($M=3.94$, range 3.17 to 4.67) when compared to baseline conditions ($M=3.06$, range 2.67 to 3.80).

**Social Studies**

![Diagram showing Active On-Task Behavior and Teacher Attention](image)

**Figure 2.** The Percentage of Intervals of Active On-Task Behavior During Hypothesis Testing for Andy.

Procedural integrity data indicated the mean percentage of intervals in which the teacher provided attention contingent upon active engaged time was 25% (range 12% to 43%) during the first intervention phase and 16% (range 4% to 28%) for the second intervention phase. While teacher attention contingent upon active engaged time occurred a mean of 0% (range 0% to 0%) during the first baseline condition and
8.4% (range 2% to 20%) during the second baseline condition. Overall, the degree to which the intervention was manipulated as planned was relatively low, however, changes in Andy’s active engaged behavior were observed. Furthermore, the slow decrease in Andy’s active engaged behavior during the reversal phase may be attributed to the degree to which the teacher failed to completely withdraw the frequent teacher attention. That is, she still provided some attention contingent upon active engaged time (M=8.4%, range 2% to 20%), when asked to withdraw the intervention.

In an attempt to reduce the negative peer interactions between Andy and his peers, a peer seated next to Andy was asked to provide positive peer comments contingent on Andy’s appropriate behaviors. Unfortunately, the intervention strategy was never fully implemented and Andy’s teacher was reluctant to continue to modify the intervention to fully evaluate its effects. Thus, efforts made to test the peer attention hypothesis were unsuccessful. Based on the results, interventions were recommended and centered on the need to continue to provide teacher attention for Andy’s active engaged behavior and to limit teacher attention for general off-task behaviors.

**Matt**

The results of the peer buddy intervention can be seen in Figures 3 and 4. Figure 3 indicates the percentage of inappropriate responses (e.g., pushing, swearing) Matt emitted following negative peer approaches during recess. During baseline
Figure 3. The Percentage of Intervals of Negative Responses to Negative Peer Approaches During Intervention for Matt.

Figure 4. The Percentage of Intervals of Positive Responses to Negative Peer Approaches During Intervention for Matt.
conditions Matt responded inappropriately towards peers on average 51% (range 32% to 71%) of the time. When the peer buddy intervention was implemented, Matt responded negatively towards his peers an average of 5% (range 0% to 12%) of the intervals on which negative peer approaches occurred. Figure 4 illustrates the percentage of time Matt responded appropriately towards his peers during recess when faced with negative peer approaches. During the peer buddy intervention, Matt responded appropriately towards negative peer initiations on average 95% (range 88% to 100%) of the time, as opposed to an average of 49% (range 29% to 68%) during baseline conditions. The limited number of data points are a result of practical barriers prevalent in the general education setting. Specifically, difficulties in observing Matt during recess were a result of recess being canceled due to weather or planned field trips, Matt missing recess by staying inside to finish incomplete homework or to volunteer to help an adult (e.g., teacher, cafeteria worker) with their work (e.g., pass out papers, clean lunchroom tables), and Matt being absent from school.

A broader impact of the peer buddy intervention on Matt's referral concern (i.e., aggression) is illustrated in Figure 5. School strategies implemented by school personnel (i.e., social skills group for 30 min, one day per week), did not appear to have a significant positive effect on Matt's referral concerns. Based on the results, intervention strategies were recommended for Matt and included (a) a more intensive social skills training package which provided role-playing to assure when Matt is placed in situations where negative peer approaches are likely to occur without the support of a peer buddy or adult in close proximity, he can appropriately respond or
escape the peer interaction by other means than physical aggression or swearing; (b) a peer buddy system in which peers would provide support (e.g., state positive comments to Matt, stand near Matt) to Matt when bombarded by negative peer approaches; and (c) exercises designed by an occupational therapist to further develop his gross motor skills.

Figure 5. Descriptive Summary of the Settings in Which Aggressive Behaviors Occurred During the 1997-1998 School Year on a Monthly Basis.
Teacher and Student Satisfaction Ratings

Andy

Satisfaction questionnaires filled out by Andy and his teacher revealed differing opinions on the acceptability and feasibility of the intervention. Despite the fact that Andy’s teacher participated in the development of hypotheses and possible intervention strategies, she rated the “frequent teacher attention” strategy low. That is, on a 7-point scale (not at all to very much) she rated the intervention as a success only somewhat (i.e., 4 rating). She also reported that the intervention took her attention away from other students (i.e., 1.5 rating) and was difficult to fit in her classroom routine (i.e., 2 rating). In addition, she did not agree that the intervention helped to reduce the time she typically spent intervening on Andy’s off-task behaviors, despite the fact that observational data contradicted this statement. During the implementation of the intervention strategy, Andy’s teacher reported that Andy appeared “to be catching on to all this attention” and that his off-task behaviors were increasing throughout the day (which may have been true since the intervention was only implemented during social studies). Ironically, this comment was made on the day in which Andy spent the majority of the intervals actively engaged (i.e., 71%). Moreover, Andy’s teacher stated that "fifth grade students should not need to receive constant teacher attention or feedback to remain on-task during classroom activities." Despite the low ratings of the intervention strategy, Andy’s teacher rated the functional assessment process with higher marks. Specifically, on a 7-point Likert
scale, she rated both statements ("I liked being involved in the process in which the intervention was designed" and "I would like to be involved in this process again") with a 5 rating.

Contrary to teacher ratings, Andy rated, on a 7-point Likert scale, that his behavior (i.e., 7 rating) and school work (i.e., 6 rating) improved during the implementation of the intervention. He also reported that he got into less trouble in class during the intervention (i.e., 5 rating). Andy rated (i.e., 0 rating) that the intervention was not embarrassing. Overall, Andy stated that he believed that he completed more work when he received frequent teacher attention contingent upon appropriate behaviors. Additionally, Andy rated his involvement in the functional assessment process (i.e., "I liked being involved in designing the intervention" and "I would like to be involved in this process again") with a mean rating of 6.5 (range 6 to 7).

Matt

Matt’s teacher rated the intervention (i.e., 6 rating on a 7-point Likert scale) to be effective in reducing the number of office referrals for aggressive acts exhibited by Matt during recess. Additionally, she commented that his peers appeared to initiate fewer negative comments during her class, however, she noted that this was not consistent across other classrooms and teachers (e.g., during specials, science). Despite the success of the intervention, Matt’s teacher received several complaints from his classmates concerning Matt’s behavior on the playground (e.g., “He always
messes up the game!”, “Do we have to ask him to play with us?”). Overall, his teacher rated the intervention positively, yet reported that other school personnel (e.g., other general education teachers, principal) did not support the need for such an intervention strategy. That is, other school personnel advocated for placement in a more restrictive environment (i.e., special education classroom) to better meet Matt’s needs, despite the fact that his aggressive behaviors occurred primarily during unstructured activities (e.g., recess, lunch). Additionally, Matt’s teacher indicated that she liked being involved in the functional assessment process (i.e., M=6.5 rating, range 6 to 7).

Prior to the intervention, Matt often would fail to complete homework assignments so he could stay in during recess to finish them. However, when the intervention was in place, he was observed to participate in recess more frequently. When Matt was asked what he thought about the peer buddy intervention, he reported some of his peers were “nicer to him” (e.g., let him play goalie, passed the ball to him, called him fewer names, made fewer negative comments) and that he enjoyed recess because it was “more fun”. In particular, prior to this investigation Matt was usually the last student picked for soccer teams and was never selected to play goalie (his favorite position). However, during the peer buddy intervention, a peer not identified as the peer buddy selected Matt for his team and asked him to play goalie even though several other peers were still available to pick. Furthermore, Matt reported that he got into trouble less (e.g., number of office referrals) during the peer buddy intervention. That is, on a 7-point Likert scale, he circled a 1 (i.e., not at all) for the statement “I
got into more trouble during the intervention.” Further, Matt rated his involvement in the functional assessment process with a mean rating of 6 (range 5 to 7).
CHAPTER IV

DISCUSSION

This study provides additional support for the utility of school-based functional assessment for adolescents with ADHD in general education settings. Descriptive information gathered from various sources (e.g., interviews, record reviews) led to the development of hypotheses that were tested through brief manipulations of environmental variables by school personnel. Furthermore, intervention strategies were effective in reducing problem behaviors for both participants. However, ratings by general education teachers on the acceptability and feasibility of the intervention strategies were mixed.

This study is consistent with previous research documenting the utility of indirect methods, such as student interviews, in the development of hypotheses (e.g., Reed et al., 1997; Kern, et al., 1994). During the student interview, each participant provided descriptive information that corresponded with teacher report and informal observations. To illustrate, both Matt and his teacher rated the function of his behavior (i.e., aggression) as escape from social interactions with peers to the same degree (i.e., very likely) on a 5-point Likert scale. Furthermore, Andy identified that he would probably do better during classroom activities if his teacher would provide more attention when he engaged in appropriate behaviors (e.g., on-task behaviors).
In addition, Andy's teacher reported that his behavior would likely improve if she attended (i.e., provided adult attention) to him more frequently. Information collected through student interviews was used in the development of potential hypotheses and the selection of intervention strategies.

The findings of this study extend previous research on functional assessment for students with ADHD in general education settings (e.g., Ervin et al., 1998; Broussard & Northup, 1995; Lewis & Sugai, 1996) in several ways. First, functional assessment procedures (i.e., manipulation of potential intervention strategies) were conducted in the natural setting (i.e., general education setting) with existing school resources. That is, general education teachers manipulated potential intervention strategies in the general education setting (i.e., social studies, recess). Other functional assessment procedures (e.g., collection of descriptive data, direct observations, data analysis) were conducted with minimal support from the consultant.

Second, this investigation documented the utility of descriptive assessments (i.e., observations, record review, interviews) in the development of potential intervention strategies that are not beyond the capability and existing resources of practitioners in school settings. This is important given recent legislation (IDEA '97) that requires functional assessment information for problems not unlike those exhibited by Matt (i.e., aggression). For Matt, descriptive information found in existing school records was found to be helpful in guiding further assessment and in determining settings in which his low frequency behaviors were more and less likely to occur. Further, documentation and graphing of office referrals indicated that the current
school intervention (i.e., social skills training) was ineffective and that further intervention was warranted. This study demonstrated a potential descriptive method (i.e., record reviews) that may be useful in identifying potential predictor and/or maintaining variables for low-rate, high-intensity behaviors. This is particularly noteworthy for applied settings, such as schools, where limited time and resources may dictate services to children.

As the functional assessment process is incorporated into existing school practices, it is essential to determine what functional assessment procedures can be conducted utilizing existing school resources, and, are rated as acceptable and feasible to school personnel. However, in a recent review of school-based functional assessment literature, few articles have addressed the acceptability and feasibility of functional assessment procedures in general education settings (Ervin, Radford, Bertsch, & Ehrhardt, 1999). This study addressed this issue by assessing teacher and student perceptions of the acceptability and feasibility of the functional assessment process and outcomes. Although results indicated mixed ratings, overall, the acceptability and feasibility of functional assessment process was rated favorably.

Several aspects of the present study can be considered limitations and, therefore, warrant further discussion. The acceptability and feasibility of the intervention strategies and functional assessment procedures were rated highly, with one exception—Andy's teacher. Despite the evidence that Andy’s active engaged time increased during the testing of the teacher attention hypothesis, Andy's teacher rated the intervention with low acceptability and feasibility. In contrast, Andy rated the
intervention with high acceptability. Reason(s) for this mixed rating is beyond the scope of this study, however, some potential factors that may have attributed to low teacher ratings are discussed. A potential reason for the low rating may be due to the teacher's perceived efficacy of the intervention. That is, the intervention was tested in the first class each morning (i.e., social studies). During the implementation of frequent teacher attention, Andy's teacher reported that his behavior was worsening throughout the day and that he was “catching on to all this attention”. Potentially, she observed a higher frequency of off-task behaviors throughout the day because Andy received little or no teacher attention contingent upon appropriate behavior during other class periods (i.e., her behavior was consistent with baseline observations). This observed increase in behavior may also have been a "side-effect" of testing the teacher attention intervention in only one class (i.e., social studies). For example, Andy's disruptive behaviors may been more noticeable in other classes due to the fact that his behavior improved when the intervention strategy was implemented during social studies. The contrast of the different conditions (i.e., intervention vs. no intervention) may have exacerbated the teacher’s perception of the frequency of Andy's inappropriate behaviors. Consequently, her perception of the efficacy of the frequent teacher attention intervention was low despite noted improvements in Andy's active engaged behavior during social studies. As a result, Andy's teacher was reluctant to implement the intervention following the study.

Another potential limitation in Andy's case was the relatively low rates of integrity the teacher attention intervention was implemented. Poor treatment integrity
may be due to several potential reasons. First, reluctance to implement the intervention may have been a result of Andy’s teacher’s perceived efficacy of the intervention. Due to the fact that she observed an increase in Andy’s off-task behaviors across the day with only small modifications in the distribution of her attention (i.e., low treatment integrity), Andy’s teacher may have been reluctant to implement the intervention with greater integrity for fear that Andy’s inappropriate behaviors would increase in frequency in other classes. Second, it may have been more difficult for her to provide contingent teacher attention for appropriate behaviors, since she had to try to “catch” Andy being good. As noted in the descriptive observations, Andy’s teacher spent more time attending to Andy’s off-task behaviors than she did to his on-task behaviors. Providing teacher attention contingent on inappropriate behavior may have been easier for her, since Andy’s off-task behaviors served as an antecedant (discriminative stimulus) to her reprimands. Third, Andy’s teacher indicated that she should not have to provide frequent teacher attention contingent upon appropriate behaviors in order to increase work productivity. She also commented that “fifth grade students should be able to follow classroom rules without constant adult feedback”. Given these comments, the fundamental nature of the intervention strategy (i.e., frequent teacher attention) went against her philosophies of teaching.

Additionally, Andy’s teacher was reluctant (i.e., poor treatment integrity of manipulated variables) to test the peer attention hypothesis. Poor treatment integrity may be due to the order in which hypotheses were tested (i.e., the teacher attention
hypothesis was tested first). As noted in her satisfaction rating and debriefing interview with the consultant, Andy's teacher reported that the intervention was moderately effective and was time-consuming to implement. Her previous dissatisfaction with the testing of the first hypothesis (that primarily relied on the modification of her behavior contingent upon Andy's appropriate behaviors) may have set the occasion for her not to follow through on the implementation of the second hypothesis (i.e., peer attention). Consequently, her reluctance to ensure the implementation of both hypothesized intervention strategies was quite alarming since she was an integral part (i.e., the consultant and the teacher collaboratively selected intervention strategies) in selecting potential strategies to test in the classroom.

With Matt's case, functional assessment was limited to the analysis of descriptive assessment data. In part, this was due to the low rates in which the behavior occurred (i.e., 1 incident per month) and, in part, because of ethical issues surrounding the possibility of systematically manipulating hypothesized controlling variables to observe the occurrence of aggression. Given these concerns, direct manipulation of environmental variables thought to set the occasion for aggression (i.e., escape from peers) were not carried out in the school setting. In other words, we did not systematically alter situations likely to result in aggression toward peers with those unlikely to occasion aggression. Instead, the collection of descriptive data (via record reviews, interviews, observations) were utilized to assist in the selection and implementation of potential intervention strategies. From an empirical standpoint, this is problematic due to the lack of confirmation of the hypothesized function (i.e.,
escape from social interaction with peers) of behavior (i.e., aggression). Conversely, from a practical standpoint, descriptive methods provided utility in the designing intervention strategies that were effective in reducing the number of aggressive incidents.

In support of this study, Kennedy and Meyer (1996) demonstrated use of descriptive information (i.e., the documentation of distal setting events or establishing operations) in determining behavior function of aggression. However, the role of distal setting events on the occurrence of aggressive behavior through brief analog manipulations may only be possible in school settings with the support of external consultants. When analog manipulations are not feasible to implement given existing school resources, it will be important to consider descriptive assessment methods for reviewing records and evaluating school intervention strategies, such as those described for Matt and those described in previous studies (e.g., Kennedy & Meyer, 1996).

Implications for Practice and Future Research

This study evaluated preliminary methods to facilitate incorporating functional assessment within existing school practices, however, further research is needed to evaluate methods that are feasible and acceptable in general education settings. The results of this investigation led to several future lines of inquiry in the application of functional assessment to general education settings and with students with ADHD. An area for future research may focus on determining what level of treatment integrity is
necessary for a meaningful change in behavior to be observed. Although Andy’s
teacher implemented the intervention strategy with relatively poor integrity, a change
in Andy’s behavior was observed. A question that remains is what impact frequent
teacher attention would have had on Andy’s behavior if it was implemented with
greater treatment integrity (e.g., 80-100%).

Further, Andy’s teacher noticed an increase in his inappropriate behaviors in
other classes not directly targeted for intervention. These collateral changes may have
affected her perception of the efficacy of the intervention strategy regardless of
whether or not collateral increases in other class settings were a result of the
intervention. Observations conducted in other class periods may have provided some
information regarding this reported increase. However, we did not observe Andy's
off-task behaviors in other subject areas (e.g., reading, writing). It is important for
future research to examine potential "side-effects" or what impact interventions
(particularly when they are being evaluated in only one setting) may have, if any, on
behaviors across settings (e.g., science, gym, recess). If inappropriate behaviors are
observed to be increasing in frequency across settings, then teacher perceptions of
intervention effectiveness, acceptability, and feasibility may be compromised. As
researchers continue to bridge the gap between the empirical literature and actual
school practice, it will be increasingly important to evaluate the relationship between
intervention effectiveness, teacher preference and acceptance, procedural integrity, and
the actual use of interventions in general education classroom settings.
Furthermore, due to practical constraints inherent in school settings it may be important for future research to address system issues. For example, the resistance from Andy’s teacher to implement the intervention strategies as planned may have been abated if school administration supported teachers to engage in such practices. Administrative support may include training school staff in functional assessment procedures, allocating more time and resources to teachers to conduct functional assessment procedures in classrooms, and acknowledging teachers for their efforts when engaging in such practices. As functional assessment is incorporated into existing school practices, such as school-based intervention assistance teams, system level changes may be necessary to facilitate the process.

Despite recent empirical support (e.g., Kennedy & Meyer, 1996), more research is needed to evaluate strategies for documenting function through descriptive assessments (Luiselli, 1996). Although, in Matt's case, record reviews provided valuable information regarding potential predictor variables for Matt's low-rate aggression, further research needs to evaluate the reliability and validity of record reviews (Blakeslee, Sugai, & Gruba, 1994), as other descriptive methods, in the functional assessment process (e.g., hypothesis development). In addition, Matt’s aggressive behavior decreased as a result of antecedent manipulations. That is, the intervention strategy attempted to break the chain of behaviors which usually resulted in aggressive acts toward peers. The utility of descriptive methods are important for practitioners who work in settings where it may not be feasible or ethical to manipulate behavior function in an attempt to reduce inappropriate, particularly for low-rate, high-
intensity behaviors such as aggression. In schools, where limited time and resources dictate services to students, it is important to identify functional assessment procedures that are feasible, acceptable, and effective within the constraints of the school setting.
Appendix A

Teacher Report Form
DESIGNING PROACTIVE INTERVENTIONS:
TEACHER REPORT FORM

Teacher: ___________________________ Date: __________

GENERAL INFORMATION:
Name of Student Referred: ___________________________

Grade: _____ Age: _____

Referral Concern: __academic __behavioral __social
__other (describe)________________________

BACKGROUND INFORMATION: Please answer the following questions to the best of your knowledge to provide information relevant to the referral concern.

Is there anything medically remarkable in the student's history? (e.g., seizure disorders, allergies, visual, auditory, motor, or language concerns) ______________

Please list any medications the student is taking: ____________________

Is the student currently receiving any special services (e.g., special education, counseling) or has the student received these services in the past? If yes, please describe. __________________________

STUDENT STRENGTHS: List skills, abilities, and positive attributes the student exhibits (e.g., social, academic, creative, emotional)

REINFORCER ASSESSMENT: What does the student like to work for or enjoy?

Ervin & Radford, 1997 (adapted from Dunlap et al 1991 & Spectrum Center, 1996)
BEHAVIOR(S) OF CONCERN: Describe the student's problem behavior(s) in observable and measurable terms.

Please use verbs (e.g., hums, burps, cracks jokes, etc. instead of "goofs-off") to describe what the behavior(s) looks like (topography).

---

*Prioritize behaviors: If you listed more than one problem behavior, place a number "1", "2", or "3" (etc.) next to the behaviors of most (1) to least (3) concern in order to indicate your priorities. Please answer the following questions for the problem behavior of TOP PRIORITY.

Provide information on how frequently the behavior(s) occurs (e.g., number of times per hour, day, week, etc.) ________________

How long does the behavior(s) last when it occurs (e.g., seconds, minutes, hour)?

Describe the strength or intensity of the problem behavior(s) ____________

---

SKILL ASSESSMENT:

<table>
<thead>
<tr>
<th>Could the behavior be related to a skill deficit?</th>
<th>No</th>
<th>Not Sure</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>(e.g., cannot do single digit multiplication problems)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Is the work too hard for the student?</th>
<th>No</th>
<th>Not Sure</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Could the behavior be a performance deficit?</th>
<th>No</th>
<th>Not Sure</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i.e., the student has the skills but fails to perform them)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

INTERVENTION ASSESSMENT: What interventions or strategies have you tried to remedy the identified problem behavior(s)? Please be specific in describing your strategy.
SITUATIONAL VARIABLES:
Identify the settings and situations in which the behavior is **most** and **least** likely to occur.

<table>
<thead>
<tr>
<th>MOST LIKELY:</th>
<th>LEAST LIKELY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults?</td>
<td></td>
</tr>
<tr>
<td>(e.g., certain teachers, other school staff)</td>
<td></td>
</tr>
<tr>
<td>Peers?</td>
<td></td>
</tr>
<tr>
<td>(e.g., friends, certain peers)</td>
<td></td>
</tr>
<tr>
<td>Activities?</td>
<td></td>
</tr>
<tr>
<td>(e.g., independent work, lecture, writing tasks, small groups)</td>
<td></td>
</tr>
<tr>
<td>Settings?</td>
<td></td>
</tr>
<tr>
<td>(e.g., playground, math, science, lunch, gym class, school bus)</td>
<td></td>
</tr>
<tr>
<td>Time of Day?</td>
<td></td>
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<tr>
<td>(e.g., morning, afternoon)</td>
<td></td>
</tr>
</tbody>
</table>

Mark any other situations that may increase the likelihood that the behavior will occur:

- [ ] conflict with peers
- [ ] conflict with an adult
- [ ] conflict at home
- [ ] low social interaction
- [ ] lack of sleep
- [ ] conflict on the bus
- [ ] hunger
- [ ] illness
- [ ] allergies
- [ ] medication (i.e., misdose or side-effects)
- [ ] other (describe)
FUNCTION OF THE PROBLEM BEHAVIOR:
That is, what causes (or motivates) the student to engage in the behavior.

Identify what you think causes or motivates (i.e., function) the student to engage in the behavior of concern:

<table>
<thead>
<tr>
<th></th>
<th>Very Likely</th>
<th>Not Sure</th>
<th>Highly Unlikely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>attention from peers</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>attention from adults (e.g., teacher)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>access to a preferred object or activity</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>access to sensory stimulation (e.g., a physiological sensation)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Escape or Avoid:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>social interaction with peers or adults</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>teacher directed activity or task</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>sensory stimulation (e.g., take an aspirin to escape a headache)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

What procedures have you followed when the behavior occurs?

How do peers respond when the behavior occurs?
Please add any comments or additional concerns that you feel are important.


Also, please indicate any types of interventions that you would like assistance with or about which you would like more information?
Appendix B

Student Report Form
DESIGNING PROACTIVE INTERVENTIONS: STUDENT INTERVIEW FORM

Student Name: ___________________  School: ___________________

Interviewer: ___________________  Date: ___________________

GENERAL INFORMATION: Establish a rapport with the student by asking questions that might get at his/her interests. What do you like to do after school?

Do you have any hobbies or sports you like to play?

What do you want to be when you grow up?

STUDENT STRENGTHS: List skills, abilities, and positive attributes of the student (social, academic, creative, emotional). What are the things you do best in school?

STUDENT WEAKNESSES: Could the behavior of concern be related to a skill deficit? Is the academic work too hard for the student? Could the behavior of concern be related to a performance deficit (i.e., student has the skills but fail to perform them)? What things do you have trouble with in school?

BEHAVIOR(s) OF CONCERN: What behavior(s) do you do that get you in trouble?

Ervin & Radford, 1997 (adapted from Kern, Dunlap, Clarke, & Childs, 1994 & Spectrum Center, 1990)
Think about your classes and circle the ones in which you do the best work and almost never get into trouble. Place an X over the classes you have the most difficulty in. Next to each class write what you like or dislike about the class.

<table>
<thead>
<tr>
<th>Class</th>
<th>LIKE?</th>
<th>DISLIKE?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td></td>
<td></td>
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<td>Reading</td>
<td></td>
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<tr>
<td>Writing</td>
<td></td>
<td></td>
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<tr>
<td>Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td></td>
<td></td>
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<tr>
<td>Art</td>
<td></td>
<td></td>
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<tr>
<td>Gym</td>
<td></td>
<td></td>
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<tr>
<td>Spelling</td>
<td></td>
<td></td>
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<tr>
<td>c-a-t</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Studies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Other times I have more difficulty are:

- problems at home
- when I’m sick
- problems on the school bus
- problems with peers
- when I’m tired
- medication
- when I’m hungry
- other (describe)

I DO BETTER WHEN:

1. I’m given work that is:
   - Hard
   - Medium
   - Easy

2. We do:
   - Seatwork
   - Small Group
   - Lecture

3. I’m given choices or options (I can pick the topic, choose what assignment to work on first, choose the type of task):
   - Lots of Choices
   - Some Choices
   - No Choices

4. I’m asked to work with:
   - An Adult
   - A few peers
   - One peer
   - Alone

5. My work assignment is...
   - Short
   - Medium
   - Long
Do you think people notice when you do a good job?  yes sometimes no

When you ask for help appropriately, do you get it?  yes sometimes no

Do you think you would do better in school if you received more rewards?

What would you like to work for?

What happens when you (describe problem behavior)?

What do teachers/other adults do when you do this?

What do your peers/other students do?

What are you trying to say when you do this?

<table>
<thead>
<tr>
<th>Choice</th>
<th>Strongly Disagree</th>
<th>Not Sure</th>
<th>Strongly Agree</th>
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</thead>
<tbody>
<tr>
<td>Get to do something else I like to do</td>
<td>1</td>
<td>2</td>
<td>4</td>
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<tr>
<td>Get out of work, get away from the teacher's instructions</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Get the teacher's attention</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Get attention from other students</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Get other kids to leave me alone</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</table>
What could you do so that you would have fewer problems with (describe the problem behavior)?:


What could your teacher(s) do so that you would have fewer problems with (describe the problem behavior)?:


Add any additional student comments or concerns:


Add any interviewer comments or concerns:
Appendix C

Functional Analysis of Behavior Observation Sheet (FABODS)
## Functional Analysis of Behavior Observation Data Sheet

**F.A.B.O.D.S.**

### Antecedents

<table>
<thead>
<tr>
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<td>TP (g or i)</td>
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| Antecedents | 81  | 82  | 83  | 84  | 85  | 86  | 87  | 88  | 89  | 90  | 91  | 92  | 93  | 94  | 95  | 96  | 97  | 98  | 99  | 100 |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| TP (q or i) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| TI          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| IT (t, s, w)|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Disruption  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Peer Approach|   +| -  | N |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

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**COMMENTS:**

Radford & Piper 1997 (adapted from Shapiro, 1996 & O'Neill et. al., 1990)
Appendix D

Teacher Satisfaction Ratings
Teacher Satisfaction Questionnaire

Teacher: ____________________________  Intervention: ____________________________

Target student: _____________________  Subject: ____________________________

**Instructions:** Please rate each of the following statements concerning the effects of the intervention on the targeted student.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all</th>
<th>Somewhat</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>On-task</em> behavior improved.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The intervention was time consuming to implement.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
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</tr>
<tr>
<td>3. <em>Academic performance</em> improved.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. <em>Work productivity</em> improved.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Overall, the intervention was a <em>success</em>.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. This intervention might be useful with <em>other</em> students.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
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<tr>
<td>7. The intervention took my attention away from the <em>other</em> students.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. The intervention helped to <em>reduce</em> the time I used to have to spend intervening on the problem behavior.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. The student seemed embarrassed by the intervention.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. This intervention fit nicely into my classroom routine.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. <em>I liked being involved</em> in the process in which the intervention was designed.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. I would like to be involved in this process again.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
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</table>
Additional comments and/or suggestions:


Thank You!!!
Appendix E

Student Satisfaction Ratings
### Student Satisfaction Questionnaire

**Teacher:** __________________

**Intervention:** __________________

**Student:** __________________

**Subject:** __________________

**Instructions:** Please rate each of the following statements concerning the effects of the intervention.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all</th>
<th>Somewhat</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My <em>behavior</em> improved during the intervention.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. My <em>school work</em> improved during the intervention.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I got <em>more</em> done during the intervention.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I think this intervention would help <em>other</em> students.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
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<tr>
<td>5. The intervention was embarrassing.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
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</tr>
<tr>
<td>6. I got in more trouble in class during the intervention.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I <em>liked</em> being involved in designing the intervention.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I would like to be involved in this process again.</td>
<td>0 1 2 3 4 5 6 7</td>
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**Additional comments and/or suggestions:**

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________
Appendix F

Daily Student Performance Rating Scale: Teacher Report Form
**Daily Student Performance Rating Scale: Teacher Report Form**

<table>
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<th>Not at all</th>
<th>Somewhat</th>
<th>Very Much</th>
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<td></td>
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<tr>
<td>I thought the student could do the work.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>The student <strong>followed</strong> class rules today.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>The student <strong>tried his/her best.</strong></td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>I <strong>thought the student liked class</strong> today.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>The student <strong>completed an appropriate amount of work.</strong></td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>The student's work was of <strong>good quality.</strong></td>
<td>1 2 3 4 5 6</td>
<td></td>
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</table>

*Please rate the quality of work done by the student:*

<table>
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<tr>
<th>Poor</th>
<th>Average</th>
<th>Good</th>
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<td>1</td>
<td>2 3 4 5</td>
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**Comments/Concerns:**

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________


Appendix G

Human Subjects Institutional Review Board Approval Letter
Date: 13 February 1997

To: Ruth Ervin, Principal Investigator
   Pamela Radford, Student Investigator

From: Richard Wright, Chair

Re: HSIRB Project Number 96-12-06

This letter will serve as confirmation that your research project entitled "Student Involvement in School-Based Functional Assessment" has been approved under the full category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: 6 February 1998
Date: 17 December 1997

To: Ruth Ervin, Principal Investigator  
Pamela Radford, Student Investigator

From: Richard Wright, Chair

Re: Extension and Changes to HSIRB Project Number 96-12-06

This letter will serve as confirmation that the extension and changes to your research project “Student Involvement in School-Based Functional Assessment” requested in your memo dated 20 November 1997 have been approved by the Human Subjects Institutional Review Board.

The conditions and the duration of this approval are specified in the Policies of Western Michigan University.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: 17 December 1998
BIBLIOGRAPHY


