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AN INVESTIGATION OF THE RELATIVE EFFECTIVENESS OF FUNCTION-BASED AND NON-FUNCTION-BASED BEHAVIORAL INTERVENTIONS

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ABSTRACT

Managing difficult and challenging behaviors in the classroom has become a critical responsibility for teachers and school-based teams. They must ensure that a child's disruptive behavior does not interfere with his/her learning, or the learning of other students in the classroom. Due to these increasing demands, researchers have closely examined the functional behavioral assessment (FBA) and positive behavior support (PBS) provisions in IDEA 2004 (Wright & Wright, 2006). Specifically, numerous researchers continue to question the appropriateness of the provisions and have sought to determine whether behavior intervention plans (BIPs) developed based on data obtained from an FBA (function-based) are more effective than BIPs that are developed based on descriptions of the problem behaviors (non-function-based) for increasing on-task behaviors.

Four elementary students participated in the study, 2 from third grade and 2 from first grade. Classroom teachers nominated the students because they demonstrated off-task behaviors that interfered with their academic progress. A multitreatment, single-subject design was utilized to examine the relationship between student behavior and function-based and non-function-based behavior intervention plans. Results indicated that function-based behavior intervention plans were associated with greater increases in on-task behavior for each of the 4 students. Implications, limitations, and recommendations for future research are discussed.

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CHAPTER I

Introduction

Responsibilities placed upon educators within the public school setting continue to increase at an overwhelming rate. Whether preparing students for state mandated tests, learning and implementing new literacy initiatives, or meeting the needs of an extremely heterogeneous student population where English is often a second language, today's educators face numerous challenges. One specific challenge receiving attention from researchers is the significant increase in emotional and/or behavioral problems presenting in the classroom (Kaufman, 1999; Smith & Katsiyannis, 2004;; Sprague, Sugai, & Walker, 1998; Sugai & Horner, 1994; Walker, Colvin, & Ramsey, 1995). The dramatic increase in student behavior problems and the significant impact of those problems on both the individual child and their respective classrooms led congress to include behavioral intervention considerations as part of the 1997 Amendments to the Individuals with Disabilities Education Act (IDEA).

Specifically, the 1997 Amendments to IDEA included requirements for schools to conduct a functional behavior assessment (FBA) "when a student with a disability becomes the subject of school discipline proceedings" (Tilly, Knoster, & Ikeda, 2000). In addition, requirements were included for school-based teams to "*consider*" [italics added] the use of positive behavior support (PBS) plans for students who demonstrate problem behaviors in the school setting that interfere with their academic and social emotional functioning (Turnbull, Wilcox, Stowe, Raper, & Hedges, 2000). The 2004 reauthorization of IDEA reasserted the requirements for FBA and PBS, which emphasized the importance of using FBA to gain a better understanding of student problem behaviors. In

addition, the current regulations indicate that PBS plans should be utilized to decrease student problem behaviors while simultaneously improving the student's ability to navigate the social demands of the school setting.

FBA is "a systematic process of identifying problem behaviors and the events that (a) reliably predict occurrence and nonoccurrence of those behaviors, and (b) maintain the behaviors across time" (Sugai et al., 2000, p. 137). The goal of FBA is to gain a comprehensive understanding of a student's problem behaviors and to provide information that will enable the school-based team to design an effective, individualized behavior support plan. Through the FBA process, school-based teams gain insight regarding (a) why a student engages in behavior that impedes learning, (b) when the student is most likely to engage in behavior of concern, and (c) under what conditions the student is most likely to be successful (Tilly et al., 2000). A comprehensive FBA provides the foundation for an effective PBS plan, also referred to as a behavior intervention plan (BIP).

Although a definition for positive behavior support is not included in the present regulations, numerous researchers have offered working definitions. Sugai and Horner (2002) reported that PBS is "a broad range of systemic and individualized strategies for achieving important social and learning outcomes while preventing problem behaviors in all students" (p. 130). PBS has also been defined as "an applied science that uses educational methods to expand an individual's behavior repertoire and systems change methods to redesign an individual's living environment to first enhance the individual's quality of life and, second, to minimize his or her problem behavior" (Carr, Dunlap, Horner, Koegel, Turnbull, Sailor et al., 2002, p. 4). Anderson & Freeman (2000)

suggested that the numerous definitions of PBS share three important characteristics. First, PBS strategies operate from a person-centered perspective. Second, PBS strategies are designed to meet the specific needs of the target student. Finally, the goal of PBS is to achieve meaningful outcomes for the target student.

FBA and PBS challenge the traditional discipline models that focus on reacting to problem behaviors. Instead, FBA and PBS strategies are designed to obtain a comprehensive understanding of student problem behaviors and to establish school environments that are conducive to learning for all students. In addition, when teachers incorporate PBS in the classroom, they are required to teach and reinforce socially appropriate alternative behaviors to students who are exhibiting problem behaviors in the school setting rather than simply repressing undesirable behaviors. If successful, school-based teams can help students develop functional behavioral strategies to increase learning outcomes through the FBA and PBS processes.

IDEA requirements pertaining to FBA and PBS have received significant attention from researchers, many of whom have questioned both the appropriateness and usefulness of such requirements (Acker, Boreson, Gable, & Potterton, 2005; Reid & Nelson, 2002; Scott, Bucalos, Liaupsin, Nelson, Jolivette, & DeShea, 2004). Newcomer and Lewis (2004) stated that the value of functional assessment assumes that treatment effectiveness increases if that treatment matches the function of the target behaviors. That assumption, however, has rarely been tested with the vast majority of students participating in today's regular or special education classrooms. Lack of substantial research prompted numerous investigators and practitioners to express concern regarding increased demand for the use of FBA in the school setting.

Gresham (2003), in particular, questioned whether there is sufficient evidence to suggest the presence of sufficient treatment validity in terms of FBA leading to more effective outcomes versus non-FBA-based interventions. Gresham also noted that the majority of researchers ignored whether or not school personnel are capable of using information pertaining to behavioral function to design appropriate interventions for students with behavior problems.

In contrast, Ingram, Lewis-Palmer, and Sugai (2005) concluded, "interventions that are based on FBA information can be more successful in reducing student problem behavior than interventions that are not based on functional assessment information" (p. 234). In addition to reducing student problem behavior, the authors reported that the FBA and BIP processes improved the social behavior of high-functioning students in the general education curriculum.

In the current study a multitreatment design was utilized to extend the findings of Ingram et al. (2005), and to determine if behavioral interventions are more successful when they are function-based (developed based on data provided by an FBA) as opposed to non-function based (not based on behavioral function) for students who demonstrate off-task behaviors in an elementary, regular education classroom setting. Given the current IDEA requirements and increasing emphasis on the impact of behavior problems on student learning, the results should provide a valuable contribution to the growing field of FBA research.

The following literature review is an examination of the IDEA requirements for FBA and PBS. In addition, a detailed review of the literature pertaining to both FBA and PBS follows, including (a) theoretical foundations of FBA and PBS, (b) core components

of FBA and PBS, and (c) recent findings regarding the effectiveness of the FBA process for designing BIPs for students who demonstrate problem behaviors in the school setting.

If the findings of the present study indicate that function-based BIPs are more effective than non-function-based BIPs, then educators would likely benefit from an inventory of behavioral interventions that are matched to specific functions of behavior. If function-based BIPs and non-function-based BIPs lead to similar rates of behavior change, then researchers should continue to question the sections of the IDEA that require school-based teams to conduct FBAs and to consider the use of PBS.

The Impact of Behavior Problems in the Classroom

Students who demonstrate problem behaviors at school have become an increasingly high profile population. Landrum and Tankersly (1999) contend that students who present behavioral problems do so at enormous expense to both the educational and human service systems. Disruptive students are less available for instruction, interfere with the learning of others, and force classroom teachers to sacrifice instructional time to address discipline and behavior management issues. The dropout rates for this growing population, which is certainly not limited to students with emotional disabilities, are consistently among the highest of any particular group of students (Carson, Sitlington, & Frank, 1995). Academic difficulties, identified as early as first grade, are often associated with disruptive behaviors (Tremblay, Masse, LeBlanc, Schwartzman, & Ledingham, 1992). These students typically suffer behaviorally, emotionally, and academically making intervention a clear priority for this population.

Despite significant and justified concern, formal procedures for addressing student behavior were not included in IDEA until the 1997 Amendments (IDEA, 1997). The 1997 Amendments to IDEA led to substantial changes in the education of students with disabilities. One of the primary themes of the 1997 Amendments to IDEA was the remediation of behavior and the management of discipline problems (McConnell, Cox, Thomas, & Hilvitz, 2001). The 1997 IDEA Amendments marked a dramatic shift in the thinking regarding student behavior problems within the school setting. Instead of relying on negative consequences for problem behaviors (e.g., taking away recess time or being sent to the office), educators were challenged to examine problem behaviors more closely in an effort to implement more positive behavioral supports. This dramatic shift “blurs

the distinction between learning and behavior problems, [and] now schools are being obligated to acknowledge the reciprocal nature of academic and nonacademic problems and to address that relationship when it adversely affects student outcomes" (Gable, Butler, Walker-Bolton, Tonelson, Quinn, & Fox, 2003, p. 75). Given the emphasis on FBA and PBS in both the 1997 Amendments and the subsequent reauthorization of IDEA in 2004, the ensuing discussion addresses: (a) definitions, (b) background, (c) requirements, (d) components, and (e) models of FBA and PBS.

Functional Behavioral Assessment (FBA)

FBA is thought to be the cornerstone for effective behavior management plans by many researchers. It enables school-based teams to take an individualized approach to problem solving for children who demonstrate difficult behaviors in the school setting. Although IDEA only requires that an FBA be conducted when an identified student is subject to suspension or expulsion, it has been argued that an FBA should be an integral component of the overall special education decision-making process (Tilly et al., 2000). FBA can provide valuable information for all children demonstrating behavior difficulties, regardless of whether they are identified as having a disability.

Definition

Although IDEA 2004 does not include a standard definition for FBA, a review of the definitions offered by researchers suggests that there are some core characteristics that constitute a comprehensive FBA. For example, Sugai et al. (2000) defined FBA "as a systematic process of identifying problem behaviors and the events that (a) reliably predict occurrence and nonoccurrence of those behaviors and (b) maintain the behaviors across time" (p. 137). McConnell et al. (2001) offered the following definition: FBA is

"an information-gathering and fact-finding process by which information about a student's behavior can be collected from multiple sources. It is a process for determining and understanding the cause of a student's behavior and its relationship to the environment in which it occurs" (p. 3). Lastly, Tilly et al. (2000) defined FBA as, "the process of coming to an understanding about why a student engages in challenging behavior and how student behavior relates to the environment" (p. 157).

These definitions, as well as others (Gresham, 2003; March & Horner, 2002; Shriver, Anderson, & Proctor, 2001; Sugai et al., 1998), all suggest that FBA involves the examination of information from multiple sources (teachers, parents, self-report, direct observations, educational records) in conjunction with a detailed review of environmental factors in order to identify the events that reliably predict, maintain, or reinforce a student's problem behaviors. Most importantly, data obtained from an FBA are intended to be used as the driving force behind designing and implementing an effective and function-based BIP.

Background Information

The roots of FBA include behavioral assessment, applied behavioral analysis (ABA), and functional analysis. The foundation upon which FBA has been built can be traced back to the work of B. F. Skinner. In his book, *Science of Human Behavior* (1953), Skinner stated:

> The external variables of which behavior is a function provide for what may be called a causal or functional analysis. We undertake to predict and control the behavior of the individual organism. This is our 'dependent variable'—the effect for which we are to find the cause. Our 'independent

> variables'—the causes of behavior – are the external conditions of which behavior is a function. Relations between the two—the 'cause-and-effect relationships' in behavior—are the laws of a science. A synthesis of these laws expressed in quantitative terms yields a comprehensive picture of the organism as a behaving system (p. 35, as cited in Ervin, Ehrhardt, & Poling, 2001, p. 174).

This "comprehensive picture" is what an FBA attempts to provide for the school-based team for students with behavior problems.

The early stages of an FBA often include target problem descriptions and the collection of baseline data on problem behaviors in their natural settings. These descriptions and observations are based on typical behavioral assessment techniques, such as frequency counting and duration recordings. Behavioral data typically serves as the primary product for behavioral assessment. FBA extends the process by attempting to identify an underlying function for the target behavior (i.e., what does the behavior accomplish?), (Shriver et al., 2001). This is the basic distinction between FBA and other forms of behavioral assessment.

Through FBA, researchers and practitioners are able to gain a better understanding of problem behaviors and the environmental factors that may be sustaining them. In addition, FBA provides guidelines for researchers' attempts to design effective PBS plans that match behavioral support to the perceived function(s) of the problem behavior. Lastly, FBA places a great deal of emphasis on the antecedents and consequences of behavior, a trademark of ABA dating back to Skinner's initial

descriptions of the laws of cause and effect, including the manipulation of stimuli to impact consequences (Hartwig, Heathfield, & Jenson, 2004).

FBA is also closely related to functional analysis. In fact, Tilly et al. (2000) suggest that both FBA and functional analysis are processes to assess "the function that a behavior serves for an individual so that an acceptable replacement behavior that accesses that function can be taught" (p. 159). The distinction between FBA and functional analysis, however, is that FBA is a problem-solving process for clearly defining the problem behavior and the relationship between that behavior and relevant environmental variables through direct observations. Functional analysis, on the other hand, is an experimental procedure in which variables related to behavior function are manipulated, the effects assessed, and a subsequent intervention is implemented and monitored as a result (Tilly et al.).

Tilly et al. (2000) discussed five fundamental assumptions for practitioners to consider prior to conducting an FBA:

1. The FBA process is person-centered with special attention paid to personal values, preferences, and dignity.
2. The behavior being examined is lawful and related to the individual's context.
3. The behavior of concern is playing a functional role for the individual. Although the function may be difficult to identify or understand initially, the challenge is to find the purpose behind the behavior.

4. The goal of the FBA process is to design and implement a positive behavior support (PBS) plan that will help the individual meet the expectations of the environment.
5. The goal of the FBA process is to produce meaningful results for the individual.

IDEA Requirements

IDEA requires school personnel to conduct an FBA when a student with a disability demonstrates behaviors and/or conduct that lead them to become the subject of school discipline proceedings (Wright & Wright, 2006). In addition, if it is determined that the conduct was a manifestation of the child's disability, the student's IEP team must conduct an FBA and implement a behavior intervention plan (Wright & Wright). Specifically, Section 300.530(d) of the 2004 IDEA Regulations states:

> A child with a disability who is removed from the child's current placement must receive, as appropriate, a functional behavioral assessment, and behavioral intervention services and modifications, that are designed to address the behavior violation so that it does not recur.

Therefore, it could be argued that school-based teams are only required to conduct an FBA for a small population of students and not until after the behavior has led to disciplinary action. An argument could also be made for conducting an FBA throughout the special education decision-making process due to interrelated sections of the regulations (Tilly et al., 2000).

Support for an FBA is most evident in Section 300.304 of IDEA 2004 (Wright & Wright, 2006), the evaluation procedures section, which states that

"the public agency must use a variety of assessment tools and strategies to gather relevant *functional*, developmental, and academic information about the child" (emphasis added). The importance of using, "technically sound instruments to assess the relative contributions of cognitive and behavioral factors" is also emphasized in the current regulations. Finally, the regulations stipulate that "the public agency must ensure that the child is assessed in all areas related to the suspected disability, including, if appropriate, health, vision, hearing, and social-emotional status" (Wright & Wright, 2006 p. 87). Therefore, if a child demonstrates behavior problems in the classroom and the school-based team has concerns regarding how the behavior impacts the student's learning, the team would be required to evaluate that specific area of need; thus, requiring an FBA. This widens the scope for FBA and increases the number of students for which an FBA should be considered and may, in fact, prove useful.

Core Components

Knoster and McCurdy (2002) identified four critical components of FBA: problem identification, problem analysis, plan development, and intervention and evaluation. Although there are numerous models of FBA, and handbooks designed to assist school-based teams who are attempting to conduct FBAs, a majority of these approaches include these four critical components.

Problem identification. The goal of the first component of FBA is to define the problem. Therefore, it is important to formulate a specific definition of the target problem behavior during the problem identification stage of FBA. All relevant members of the school-based team should participate in this process and share their observations of the

student being assessed to collectively define the target problem behavior. The definition should include a concrete description of the behavior, as well as how the behavior presents in the classroom environment or other setting(s) of interest.

Problem analysis. The goal of problem analysis is to determine why the problem exists. Therefore, following Skinner's proposition that behavior is a function of conditions in the environment, a thorough examination of the environment within which the behavior exists is critical. The school-based team conducts structured observations in the setting of interest to identify antecedents and consequences of the problem behavior. In addition, team members examine relevant educational and medical records for potential alternative explanations for the problem behavior. Finally, the school-based team formulates a hypothesis to define the problem behavior and explain the function of the behavior in the setting of interest.

Plan development. The goal of plan development is to identify what should be done to address the problem behavior. The plan to address the problem behavior is based upon the hypothesis developed in the problem analysis phase and clearly delineates roles and responsibilities for each school-based staff member involved. It is equally important that the plan include (a) procedures for monitoring progress and (b) resources necessary to support the implementation of the plan. Finally, when designing the plan, educators must consider additional environmental influences to ensure a good contextual fit for the setting in which it is being implemented.

Intervention and evaluation. The final core component of FBA, as identified by Knoster and McCurdy (2002), is the intervention and evaluation phase. During this phase, the plan is implemented and progress is closely monitored in terms of both fidelity

of intervention and impact on student behavior. Through data collection, educators obtain data regarding the efficacy of the plan, which enables them to make appropriate modifications to meet the needs of the target student. In addition, impact measures are often incorporated during this phase to measure behavioral change, meaningfulness of behavioral change, and consumer satisfaction.

Models

Although researchers have investigated numerous models of FBA (Hartwig et al., 2004; Maag & Larson, 2004; March & Horner, 2002; Marston, 2001; Packenham, Shute, & Reid, 2004), and an increasing number of handbooks/manuals are presently available for school-based teams (Cipani, 1999; Nelson, Roberts, & Smith, 1998; O'Neil, Horner, Albin, Storey, Sprague, & Newton, 1997; Stoiber, 2004), the preceding components are at the core of most of these models. Following is a brief review of three models of FBA, each of which is clearly guided by the core components identified by Knoster and McCurdy (2002). Finally, a detailed description of the model utilized in the present study, accompanied by a simulated FBA to demonstrate the data obtained from each step in the process, is also provided.

Functional Assessment and Intervention Program (FAIP). The FAIP is a five-step, computer-based program designed to simulate the FBA process by asking a single respondent to answer a series of questions about the target student and the primary problem behavior (Hartwig et al., 2004). FAIP is an indirect model of FBA and relies upon a single respondent's perception of the target student's problem behavior. In the first step of the FAIP model, the respondent enters identifying information about the student and the setting in which the problem behavior exists. The respondent then

examines the antecedents and consequences of the problem behavior; this constitutes steps two and three. The respondent then confirms or rejects each antecedent and consequence generated by the computer program.

The fourth step of the FAIP model provides proposed functions for the student's problem behavior, and the respondent either confirms or rejects each hypothesized function (Hartwig et al., 2004). In the final step of the program, the respondent generates a list of evidence-based interventions based on the input regarding the perceived function of the student's problem behavior. The respondent then chooses from the list of evidence-based interventions.

Hartwig et al. (2004) examined the FAIP model and reported evidence of interrater agreement, test-retest reliability, and concurrent validity when the identified behavior functions were compared to those identified by two other commonly used models of FBA. Consistent consumer ratings identifying the FAIP as the preferred FBA model helped to establish social validity for the FAIP model (Hartwig et al.). Finally, the FAIP model reportedly reduces the requirements commonly associated with conducting an FBA. Specifically, respondents need not be an expert in behavioral assessment; in fact, very little knowledge in this area is required to complete an FBA using the FAIP model (Hartwig et al., 2004).

Although the FAIP appears to be an appealing model of FBA due to its technical properties and limited demands, two critical areas of concern exist. First, the model depends on perceptions and descriptions of a single respondent. Secondly, although the model includes a list of evidence-based interventions, interventions provided are not based on target student characteristics and context.

Truncated FBA. Packenham et al., (2004) designed a four-step, truncated model of FBA to address concerns about conducting FBAs in the schools. Following is a brief description of the four steps included in the model.

1. The educator conducting the FBA completes a teacher interview utilizing a protocol to examine the primary problem behavior, environmental and instructional factors that may influence the problem behavior, and antecedents and consequences of the problem behavior.
2. The educator identifies the function of the problem behavior as either attention-seeking or escape/avoidance; there are only two options. The researchers provide a table with defined guidelines to facilitate this step.
3. The educator utilizes a prompt sheet with specific guidelines to develop a summary statement or hypothesis in regard to the student's problem behavior. The summary statement includes setting events and antecedents, a description of the problem behavior, and consequences of the problem behavior.
4. The educator designs the intervention based on the summary statement or hypothesis developed in step three. The researchers provide a table of specific interventions matched to behavioral functions to assist in the intervention design step.

Packenham et al. (2004) reported three primary findings of interest from their examination of the truncated FBA model. First, participating teachers found the model to be practical for classroom use. Secondly, implementation of the interventions based on the truncated FBA model led to decreases in problem behaviors for the two students

involved in the study. Finally, results of the study indicate that the truncated FBA model was socially valid.

Despite the positive findings reported by Packenham et al. (2004), it is important to review several limitations of the model and the study. First, the truncated FBA model only allows for two possible functions of problem behaviors; escape/avoidance and attention seeking. This clearly limits the number of problem behaviors for which this model is appropriate. Secondly, the guidelines for the intervention design step of the model are also limited and provide the teacher with relatively few intervention options. Third, the model is dependent upon a single respondent. Finally, although data indicate that the interventions were effective for reducing problem behaviors, the research design employed makes it impossible to determine whether the FBA process played a role in decreasing the problem behaviors, or if the decrease was simply a result of implementing an evidence-based intervention regardless of the behavioral function.

Functional Assessment and Intervention System. The Functional Assessment and Intervention System (Stoiber, 2004) is a comprehensive five-step model of FBA. The first step involves identifying the primary concern for the target student for which the FBA is being conducted. In addition, step one includes environmental analysis, close examination of antecedents and consequences, and the formulation of a summary statement. The summary statement includes a clear statement of the prioritized concern, a description of the setting, an explanation of the function that the behavior serves, a list of the student's competencies, and the identification of a positive alternative that will serve the same function of the target behavior.

The second step involves setting meaningful goals and benchmarks for the target student. Specifically, Stoiber (2004) suggests stating the desired outcome for the student's problem behavior and identifying a target date by which the goal will be reached. The behavioral benchmarks should delineate what the student will do, at what level, and with what type of support. Lastly, the benchmarks are used to monitor the student's progress toward the goal on a 7-point Likert scale ranging from -3 (behavior has decreased significantly) to +3 (behavior has increased significantly).

The third step in the Stoiber model (2004) is designing the positive support plan. The first part of designing the positive support plan involves brainstorming strategies that are (a) directly connected to the goal for the student, and (b) based on the functional assessment information obtained in step one. The second part of designing the plan includes selecting the strategies that have demonstrated efficacy for the priority concern, determining who will support plan implementation, and identifying the resources that are needed to implement the strategies effectively.

Step four consists of implementing the plan and monitoring progress. Once the plan has been successfully implemented, a team member should utilize the progress-monitoring procedures to evaluate the efficacy of the plan. Stoiber (2004) suggests that the primary purposes of progress monitoring include (a) examining the student's progress over time, (b) guiding decisions regarding how the plan is working, and (c) improving outcomes.

The final step is evaluating outcomes and planning next steps. Based on the data obtained from step four, the team analyzes the student's progress and evaluates the

efficacy of the plan. The results of these analyses dictate how the team should proceed and if the plan should be continued, adjusted, terminated or replaced.

It should be noted that the Stoiber (2004) model includes numerous tools to facilitate the FBA process. Specifically, Stoiber provides a standard referral form for background information about the child and primary problem behavior. The FAIS Interview Guide can help facilitate the parent and teacher interview process. In addition, team members can complete the Social Competency Performance (SCP) to help determine the priority concern as well as positive alternatives to the behavior difficulty. Finally, Stoiber provides a Classroom Competence Observation (CCO) form to structure the observation process and help identify contributing environmental conditions.

FBA comes in many forms, ranging from comprehensive, multi-informant models, to indirect, single respondent models. Since the 1997 Amendments to IDEA and the subsequent re-authorization in 2004 failed to define a preferred model of FBA, the decision of which model to adopt, or even to create a new model, is often made by school-based teams or school districts. The present study utilized the McConnell et al. (2001) model, which is best described as a comprehensive, multi-informant method for conducting an FBA.

Selected FBA model. The FBA model designed by McConnell et al. (2001) comprises five phases: identifying the target behavior, gathering background information, conducting educational and environmental analysis, behavior intervention planning, and behavior intervention implementation. Each phase consists of multiple steps and standard forms are provided to assist in data collection. Following is a detailed description of the

McConnell model, and completed samples of the forms used are provided in the Appendix as indicated.

The goal of the first phase is to identify the primary problem behavior being exhibited by the student in the setting of concern. At the elementary level, educators conducting FBAs should obtain this information from the classroom teacher or from the adult with whom the target student spends a majority of his time. It is recommended that the team responsible for conducting the FBA, which should include the classroom teacher, use the Target Behavior Assessment Form as a guide for identifying the target behavior. As shown in Appendix B, the team is able to obtain valuable data to help identify the primary problem behavior from the Target Behavior Assessment Form.

In phase two, the team gathers background information on the target student from multiple sources, including the student, parents or guardians, medical and educational records, and any existing evaluation data. Gathering information from the student enables the team to gain important insight into the student's perceptions of the problem behavior. It is recommended that the team nominate the most appropriate member to conduct the student interview, and the Student Interview Form be used to guide the interview process. As shown in Appendix C, valuable information can be obtained from the student interview.

Interviewing the parents or guardians also provides valuable information about the student's problem behaviors. Specifically, the parents or guardians can provide information about how the student behaves in other settings, changes at home that may be influencing the student's behavior, and activities that the student enjoys. In addition, parents or guardians can discuss how the student feels about school, what they report

when they come home from school, and any additional concerns they may have regarding the student.

McConnell et al. (2001) recommended reviewing the student's medical records as part of the second phase to determine if medical factors are playing a role in the student's behavior. Specifically, it is recommended that the team complete the Medical Form (see Appendix D), and obtain information from the school nurse or the student's family during the interview with the parents or guardians.

The final component of phase two involves reviewing the student's academic and educational records. This provides the team with valuable information regarding the student's academic achievement, as well as information pertaining to cognitive and social-emotional functioning when an evaluation has been conducted. Gathering academic information from the student's records provides the team with information that can help determine if the curriculum demands are related to the student's problem behaviors (McConnell et al., 2001).

The third phase of the McConnell et al. (2001) model involves conducting educational and environmental analysis in preparation for behavior intervention planning. Three forms are included in this phase to facilitate data collection. The first, the Educational and Environmental Analysis form (see Appendix E), is used to obtain information directly from the classroom teacher in an interview format. Through completion of the Educational and Environmental Analysis form, the team is able to identify relevant classroom environment and management strategies, instructional delivery and materials, classroom assignments, and teacher behaviors.

The classroom teacher completes the second form, the Behavioral Intervention Plan Sheet, and distributes it to team members at the subsequent team meeting. The teacher, by completing the Behavioral Intervention Plan Sheet (see Appendix F), provides the team with valuable information pertaining to the his/her perception of the student's problem behaviors. In addition, the teacher summarizes discipline techniques used in the classroom, student's interaction style with adults, and effective and ineffective interventions or strategies that have been implemented in the classroom.

The Functional Assessment Interview Form (see Appendix G) is the third form in the educational and environmental analysis phase of the McConnell et al. (2001) model. It is recommended that the form be completed at a team meeting. Members of the team review relevant data while completing the Functional Assessment Interview Form as a group (such as the Target Behavior Assessment Form) to gain a better understanding about the function of the student's behavior and its relationship to the classroom environment.

Behavior intervention planning is the fourth phase of the McConnell et al. (2001) model. In this phase, the team collectively develops and writes a behavior intervention plan for the target student based on the information gathered in the first three phases of the model. A Behavior Intervention Plan (BIP) form is included in the model (see Appendix H). The first step of the fourth phase involves generating a hypothesis to explain why the behavior is occurring. The team then provides a detailed description of the primary problem behavior, as well as a specific intervention goal.

Following the specification of the intervention goal, the team selects appropriate interventions that (a) take into consideration teacher reports regarding previous

intervention efforts, (b) address the hypothesized function of the problem behavior, (c) are clinically proven to be effective, and (d) teach positive alternatives for the problem behaviors. The team is also responsible for identifying when and where the plan will be implemented, as well as what resources will be needed to support the implementation of the plan. Finally, all team members agree upon a data collection schedule and a follow-up meeting date.

The final phase of the McConnell et al. (2001) model is the BIP implementation phase. This requires the classroom teacher, with predetermined support from the team, to carry out the interventions selected and defined in the BIP. Implementing the BIP with a high degree of integrity is critical, and researchers often recommend incorporating measures of treatment integrity into the implementation plan (Lane, Bocian, MacMillan, & Gresham, 2004). Finally, data collection following the implementation of the BIP is crucial for determining the efficacy of the interventions.

When successful, school-based teams utilize the data obtained from the FBA process to design behavior intervention plans (BIPs) matched to the behavioral function of the student's problem behaviors. The literature pertaining to FBA continues to grow and its inclusion in IDEA ensures that efficacy research will also continue.

Positive Behavior Support (PBS)

PBS, like FBA, has also received significant attention from researchers since the 1997 Amendments to IDEA when Congress identified it as the preferred, empirically supported intervention system for students who demonstrate behavior problems. PBS, however, emerged during the mid-1980s due to human rights activism and the advancement of new perspectives on educational interventions (Carr et al., 2002). At the

time, children seemed to be demonstrating problem behaviors in the classroom and school settings that were increasingly disruptive to the learning climate for other students and teachers. In addition, the perceived effectiveness of typical consequences was being questioned.

The primary concern and impetus for PBS was that discipline and management techniques were too reactive and overly dependent upon aversive consequences and restrictions. Therefore, researchers began to question the effectiveness of aversive behavior management styles (Horner et al., 1990) and began to explore more proactive interventions that were linked to comprehensive assessments of behavior. Given the increased rate of behaviors requiring intervention for students with disabilities versus students without disabilities, the replacement of an aversive management style with proactive, positive behavioral supports reflects “a commitment to providing children with disabilities the same respect and dignity as all other members of the community” (Horner et al., p. 125).

Positive behavior support (PBS) is “based on the beliefs that problem behaviors are context related, problem behaviors are purposeful, interventions should be designed with an understanding of the needs of the student and the function(s) that the behavior serves, and interventions should enhance the dignity of the student” (Gartin & Murdick, 1999, pp. 345-6). There are numerous definitions for PBS in the current literature.

Definition

Carr et al. (2002) defined PBS as “an applied science that uses educational methods to expand an individual’s behavior repertoire and systems changes methods to redesign an individual’s living environment to first enhance the individual’s quality of

life and, second, to minimize his or her problem behavior" (p. 4). The Rehabilitation Research and Training Center on PBS (2006) stated that, "PBS involves the assessment and reengineering of environments so people with problem behaviors experience reductions in their problem behaviors and increase social, personal, and professional quality in their lives" (¶ 1).

A third definition offered by Sugai et al. (2000) described PBS "as a broad range of systematic and individualized strategies for achieving important social and learning outcomes while preventing problem behaviors in all students" (p. 134). Lastly, Gartin and Murdick (2001) stated that, "PBS is a problem-solving approach to managing problem behaviors by matching supportive strategies to the needs of the student to reduce or eliminate the behavior being targeted" (p. 345). The numerous definitions of PBS have consistently stressed the importance of understanding both individual and environmental factors and developing supportive strategies to enhance the individual's quality of life and render their respective problem behaviors inefficient.

Background Information

The roots of PBS can be traced to four primary sources: (a) behavioral science (applied behavior analysis, in particular), (b) the inclusion movement, (c) social values, and (d) systems perspective (Carr et al., 2002; Sugai et al., 2000; Sugai & Horner, 2002). Each of these four areas has made significant contributions to the growing literature on PBS.

Applied behavior analysis (ABA). Carr et al. (2002) highlighted the importance of the past 35 years of research in ABA in the development of PBS. ABA researchers have identified concepts that are now offered as the cornerstones of PBS. For example, ABA

has helped researchers understand that behavior is merely one part of a pattern of events that also includes antecedents and consequences. ABA helped demonstrate the importance of examining both the antecedents and consequences of behaviors in order to truly understand the function of the behavior, thus forming the basis for FBA.

Sugai et al. (2000) asserted that research on ABA indicated that much of human behavior is learned, influenced by environmental factors, and amenable to change. Through ABA, the degree to which we can now understand problem behaviors has increased significantly. This knowledge leads to more effective, comprehensive, and research based intervention plans, another integral component of PBS.

Inclusion movement. "During the past 150 years, the United States has been characterized by an ever-increasing emphasis on the extension of individual rights to formerly disenfranchised groups, thereby facilitating the inclusion of those groups into mainstream society" (Carr et al., 2002, p. 5). Presently, the inclusion movement has focused on ensuring that all children with disabilities receive an appropriate education in the least restrictive environment (LRE). Therefore, it has become the school's responsibility to do everything in its power to accommodate all children. This has become especially important and equally difficult for educators when it pertains to the increasing number of children who are demonstrating significant behavior problems.

Sugai et al. (2000) reported that schools across the country have seen a significant increase in discipline referrals, suspensions, and expulsions. The dramatic increase in behavior problems has left educators in a difficult position. Without the specialized skills needed to accommodate difficult students, schools often seek support from outside behavioral experts (Sugai et al, 2000); however, such resources may not be consistently

available given scheduling conflicts and limited financial resources. Therefore, it appears that empowering in-house staff to manage difficult behaviors and successfully include all students, despite the presenting behavior problems, should be the goal of school systems. Regardless of the approach, the inclusion movement has made it clear that children who demonstrate significant behavior problems are the most recent disenfranchised group that must be successfully included into the mainstream.

Social values. Sugai et al. (2000) reported that it is critical to consider the contextual fit between PBS intervention strategies and the social and cultural values of the student, teacher, school, and community. In addition, PBS should lead to behavior change that (a) impacts all parts of the student's day, (b) is durable, and (c) not only reduces problem behaviors, but fosters prosocial behaviors that enable the child to successfully navigate the social demands of their respective school and home environments (Sugai et al, 2000). PBS also adheres to the National Association of School Psychologists principles for professional of ethics (Thomas & Grimes, 2002). In particular, when designing and implementing behavioral interventions it is important to respect individual differences and "modify or terminate the treatment plan when the data indicate the plan is not achieving the desired goals" (p. 1621).

Systems perspective. Sugai and Horner (2002) asserted that "if behavior analytic practices are to become institutionalized and sustained, the systems that support these practices must be in place" (p. 132). In order for PBS to be effective, a systems perspective must be utilized. A student's problem behavior needs to be understood within its respective environment. The goal of PBS is not to simply reduce the problem behavior, but rather to change the social system within which the problem behavior

exists. A systems perspective approach challenges educators to thoroughly examine the role of the school environment, explore possible alternatives to present school resource allocations, and investigate all possible factors that may be sustaining a student's problem behaviors.

IDEA Requirements

Congress and the US Department of Education clearly recognized the critical relationship between behavior and learning in IDEA 2004. In fact, the current regulations require IEP teams to actively consider the impact that a student's behavior has on his or her learning and the overall learning environment. Specifically, Section 300.324 of the regulations states that, "the IEP must consider, in the case of a child whose behavior impedes the child's learning or that of others, the use of positive behavioral interventions and supports, and other strategies, to address that behavior" (Wright & Wright, 2006).

Although the inclusion of behavioral interventions within IDEA is an important step forward for students with behavior problems, some researchers have questioned why Congress and the US Department of Education refrained from defining the terminology, and why they did not simply require IEP teams to include behavioral interventions for all students with behavior problems (Turnbull et al., 2000). In fact, Turnbull et al. indicated that the decision to simply require IEP teams to *consider* PBS and not require that they use, arguably, the most beneficial intervention is the "Achilles heel for PBS" (p. 220). Despite these apparent shortcomings, it is important to note that Section 300.320 of IDEA 2004 requires that a child's IEP "must include functional goals designed to meet each

of the child's other educational needs that result from the child's disability" (Wright & Wright, 2006). This suggests that behavior intervention plans should be included in a student's IEP when the team has concerns regarding behavior.

Core Components

The concept of PBS has evolved from the ABA field and challenges educators to examine the traditional aversive consequence-based management philosophies. The emphasis of PBS is now on selecting procedures that include changing the child's environment, teaching prosocial behaviors, and reinforcing incompatible positive behaviors. This shift in management style may appear to be overwhelming to many educators in the position of supporting a full classroom of students on a daily basis. A brief review of the core components of PBS helps to illustrate the importance of adopting this approach.

The core components of PBS include "(a) a prevention-focused continuum of support, (b) proactive instructional approaches to teaching and improving social behaviors, (c) conceptually sound and empirically validated practices, (d) systems change to support effective practices, and (e) data-based decision making" (Sugai & Horner, 2002, p. 131).

Prevention. PBS can be provided to students at three different levels of prevention: primary, secondary, and tertiary. The goal of primary prevention is to support all students within the population being served and decrease the number of new cases of a problem behavior or situation (Sugai & Horner, 2002). The goal of secondary prevention is to provide specialized support for a smaller group of students who are presently at-risk of school failure. Lastly, the goal of tertiary prevention is to provide comprehensive

behavioral support for students who demonstrate significant emotional, behavioral, and social problems.

Proactive instructional approach. A proactive instructional approach "is characterized by careful consideration of instructional practices, structures, and processes for (a) maximizing student outcomes, (b) selecting and teaching school-wide and classroom-wide expectations, rules, and routines; and (c) practicing and encouraging the use of academic skills and behavioral expectations across multiple relevant settings and contexts" (Sugai & Horner, 2002, p. 131). When school personnel implement proactive instructional approaches, they convey the strategies to the students early in the school year before problem behaviors occur. In addition, students are rewarded for following such rules and routines.

Conceptually and empirically sound practices. PBS is based upon empirically supported interventions that have been identified as being effective for addressing the specific behavior problems that are being demonstrated by the target student(s). To identify the appropriate interventions, educators conduct functional behavioral assessments (FBAs). Proponents for incorporating empirically supported and conceptually sound behavioral interventions for students who are demonstrating challenging behaviors often believe that function-based interventions are more effective than non-function-based interventions.

Systems perspective. Sugai and Horner (2002) suggested that there are four system-level considerations critical for schools attempting to implement PBS strategies. First, PBS plans must include a detailed description of the problem behavior being targeted, including concrete and measurable descriptors. Secondly, the system that is

supporting the PBS intervention must ensure that the PBS team has the capacity to effectively design, implement, and monitor the behavioral intervention. Third, PBS teams must choose empirically supported interventions shown to be effective with problem behaviors consistent with the behaviors being demonstrated by the targeted student. Finally, system supports must be in place to ensure that effective behavioral interventions continue for the targeted students. Overall, the systems perspective enables educators to gain a comprehensive understanding of student behavior and provides educators with valuable resources that will not only help children at-risk of behavioral disorders, but also will likely provide support to all students.

Data-based decision making. Data-based decision making is evident in each of the core components of the PBS approach. Specifically, "data are used to (a) define and prioritize areas of concern, (b) select practices to address these areas of concern, (c) evaluate the impact of these practices in achieving desired outcomes, and (d) guide long-term action planning and sustainability goals" (Sugai & Horner, 2002, p. 133). The PBS approach emphasizes the importance of making informed decisions; developing empirically supported behavioral interventions; and following proven methodologies while designing, implementing, and evaluating behavioral interventions.

Models

Lastly, PBS can be implemented within the school setting at three different levels; school-wide, classroom-wide, and individual. Educators typically implement school-wide PBS to target problems such as poor attendance, student suspensions, or out-of-school placements. In contrast, school personnel often implement classroom PBS to address issues such as group transitions, behavior during specific class times (such as recess,

physical education, art), and following classroom rules. Lastly, educators implement individual PBS to target specific problem behaviors of an individual student. Typical problem behaviors may include calling out, physical or verbal aggression, and non-compliance with teacher directions. For school-based teams to implement PBS strategies at each of the three levels, they require a school-wide commitment to support their efforts.

Numerous researchers have investigated the effectiveness of PBS intervention strategies because of the PBS provision first introduced in the 1997 Amendments to IDEA, and subsequently reasserted in the reauthorization of IDEA in 2004 (Christensen, Young, & Marchant; Luiselli, Putnam, & Sunderland, 2002; Taylor-Greene & Kartub, 2000). The failure to define a preferred model of PBS has also likely contributed to the numerous intervention strategies investigated in the current literature. Following is a brief review of PBS models at each of the three levels of intervention, as well as a detailed description of the intervention model used in the present study as a contrast to McConnell's (2001) function-based approach to behavioral intervention.

School-wide PBS. Luiselli et al. (2002) examined the effectiveness of a school-wide PBS intervention in a public middle school during a four-year longitudinal study. The goals of the intervention included decreasing the number of student detention slips, increasing student attendance, and increasing the proportion of students earning positive reinforcement. Teachers gave detention slips to students for disruptive-antisocial behavior, vandalism, and substance abuse behaviors. The principal stored copies of the detention slips in the main office and in a central file. Researchers measured student attendance simply by calculating the percentage of students that attended school each

day. Finally, the researchers operationalized the proportion of students earning positive reinforcement as the percentage of students who qualified for lottery drawings.

The school-wide PBS model in the Luiselli et al., (2002) study utilized a standard token economy system that rewarded academic achievement, positive school behavior, and consistent attendance. These core behaviors earned students recognition cards, as well as "caught being good" cards that were entered into regularly scheduled lotteries. Eligible students could win prizes such as discount coupons for local vendors, free passes to school events, and gift certificates. These students were also acknowledged in a weekly school newsletter.

Results of the school-wide PBS indicated a consistent decrease in the number of student detentions for each of the three behavior categories, with a single exception for vandalism behaviors in year two of the study. In addition, percentage of student attendance and percentage of student's earning positive reinforcement increased slightly each year. Although both of the major findings were limited by the lack of baseline data, results indicated that the school-wide PBS model was associated with a decrease in student detentions and an increase in positive student behaviors. These results are consistent with those reported by other researchers who have investigated the effectiveness of PBS interventions at the school-wide level (Langland, Palmer, & Sugai, 1998; Lewis, Sugai, & Colvin, 1998; Luiselli et al., 2001; Scott & Barrett, 2004; Taylor-Greene & Kartub, 2000).

Classroom-wide PBS. Kern, Bambara, and Fogt (2002) reported that there are far fewer studies of the efficacy of classroom-wide PBS interventions than school-wide and individualized PBS interventions. Kern et al. examined the efficacy of a class-wide PBS

intervention targeting levels of student engagement and problem behaviors in a self-contained, middle school classroom for students with labels of severe emotional disturbance. Specifically, Kern et al. examined the impact of providing students with opportunities for choice making and high interest activities on levels of engagement.

The dependent variables in the study included engagement and destructive behavior. Five trained observers, three of whom were naïve to the goals of the study, collected observation data. Observers classified behavior as engaged when a "student's eyes were on the teacher or task materials, and the student was completing work in accordance with the teacher directions or instructional requirements" (Kern et al., 2002, p. 319). Researchers indicated that destructive behavior included aggression, disruption, and destroying property, among other things.

Independent variables in the study included providing opportunities for choice-making and integrating high-interest activities into the curriculum. The researchers incorporated opportunities for choice-making by simply providing the students with choices of (a) activities within the curriculum (air pollution experiment or land pollution experiment), sequence of instruction (which lesson to work on first), and (c) manner in which the work would be completed (work at the computer or with a friend). Reflecting on previous experiences with the students, asking the students about their preferences, and connecting lessons to the students' personal experiences ensured that activities were of high-interest.

Results of the study indicated that classroom-wide PBS interventions involving basic curricular modifications can lead to increases in student engagement and decreases in disruptive behavior. These results are consistent with the positive findings reported by

other researchers investigating the effectiveness of PBS interventions at the classroom-wide level (DePaepe, Shores, Jack, & Denny, 1996; Hiralall & Martens, 1998; Rosenberg, 1986).

Individual PBS. Christensen, Young, and Marchant (2004) examined the efficacy of individualized PBS interventions for two male third grade students identified as being at-risk for emotional behavioral disorders. One of the students demonstrated high rates of disruptive behavior, inappropriately seeking teacher and peer attention, whining, and off-task behaviors. Primary concerns for the second student included aggressive behavior on the playground, lying and stealing, disrupting instruction, inappropriately seeking behavior, and limited academic production.

The researchers conducted FBAs for each student and developed hypotheses regarding the function of the problem behaviors. Based on these hypotheses, the researchers developed individualized PBS plans, which included intervention strategies directly aligned with the FBA data. The goal of each PBS plan was to increase socially appropriate classroom behavior during centers time. The researchers provided training on how to implement the PBS plans for each student to classroom teachers, and trained observers collected behavioral data in the classroom during baseline and intervention conditions.

Results indicated that the PBS plans for both students had a positive effect on their classroom behavior. In addition, PBS plans led to positive changes in behavior equal to or greater than that of a comparison group of students who were not identified as at-risk for social and academic failure. These results are consistent with those reported by researchers who investigated the effectiveness of PBS interventions at the individual

level (Duckworth et al., 2001; Kennedy et al., 2001; Todd, Horner, Vanater, & Schneider, 1997).

A second approach to individual PBS plans involves implementing evidence-based interventions based on the topography of the student's problem behaviors. For example, if a student is consistently calling out during instruction and interrupting the teacher, the teacher could simply implement an empirically supported intervention to address the calling out behaviors, such as differential reinforcement of an incompatible behavior (DRI; Lo & Cartledge, 2006). These interventions are considered non-function-based. They are proven interventions selected and implemented without regard to the function of the student's problem behaviors. One example of a non-function-based approach to individual PBS plans is the Teacher's Guide to Behavioral Interventions (Wunderlich, 1988).

The goal of the Teacher's Guide to Behavioral Interventions is to provide educators with a selection of proven interventions for some of the most common behavior problems encountered in the educational environment (Wunderlich, 1998). The selection of interventions is appropriate for general education and special education environments. In addition, the selection of interventions varies in terms of intensity. For example, general approaches to problem reduction are provided for less serious problem behaviors, and more specific interventions are included to address more severe problem behaviors. Wunderlich (1998) provides the following example of this non-function-based approach to PBS.

Once the classroom teacher or school-based team has identified the primary problem for the target student, they simply match that description to one of the behavior

categories provided in the Teacher's Guide to Behavioral Interventions. The teacher, or team, is then provided with numerous intervention options to address the primary problem behavior. Once the preferred intervention, or interventions, is chosen it can be implemented in the relevant educational environment. This non-function-based approach for developing individualized PBS plans is far less time consuming than the function-based approach.

Implications for School-Based Teams

The FBA and PBS provisions that were introduced in the 1997 Amendments to IDEA and then reasserted in the reauthorization of IDEA in 2004 have led to numerous challenges and increases in responsibility for educators, in particular, school-based teams. The FBA requirement and the recommendation to consider PBS strategies for students demonstrating disruptive behaviors in the classroom present a number of challenges for school-based teams. Most importantly, educators may lack the ability, experience, training, time, and/or willingness to effectively meet the increased demands of IDEA with regard to the management of student behavior. These obstacles become increasingly overwhelming when they are compounded by limited resources, diverse student populations, increased school violence, and expanded social responsibilities (Sugai et al., 2000).

In order for school-based teams to consider PBS for a student demonstrating problem behaviors, they must be familiar with both the FBA and PBS literature. It is imperative that they be aware of the steps for conducting an FBA and how to use the data obtained from the FBA to design and effectively implement a PBS plan. Lastly, in order for school-based teams to keep up with the present focus on educational outcomes, they

must be knowledgeable in the area of evaluating PBS plans. Overall, the inclusion of FBA and PBS in IDEA 2004 stresses the important role that FBA and PBS play in providing effective services to students who demonstrate difficult behaviors in the classroom.

Given the increased demands upon general educators, special educators, and school administrators related to PBS, the implications for training are significant. Heckaman, Conroy, Fox, and Chait (2000) noted that, along with the expectation that teachers and other school professionals will conduct functional assessments and subsequently develop PBS plans, comes the necessity of a close examination of professional development and training. In addition, since a majority of the research pertaining to PBS includes outside agencies and/or university support, it has not been determined whether schools can effectively implement PBS independently (Safran & Oswald, 2003).

Sugai et al. (2000) made four recommendations for schools attempting to meet the provisions of IDEA 2004 pertaining to FBA and PBS strategies. First, schools need guidelines for the adoption and consistent use of FBA and PBS. Secondly, schools need to network with community resources to maintain efficient school-wide and individual student support plans. Third, user-friendly approaches to both FBA and PBS will enable schools to meet these obligations more efficiently and consistently. Finally, schools must ensure that behavioral interventions are achieving meaningful outcomes for students, their families, and the school (Sugai et al., 2000).

Function-Based Intervention Research

The implications of the FBA and PBS provisions in IDEA 2004 are considerable for school-based teams. These additional demands have led numerous researchers to question the appropriateness and usefulness of such provisions (Acker et al., 2005; Reid & Nelson, 2002; Scott et al., 2004). Despite these concerns, researchers have only just begun to examine the relative effectiveness of function-based interventions. To date, findings are inconclusive. Following is a brief review of four critical studies contrasting function-based and non-function-based interventions.

Schill, Kratochwill, and Elliot (1998) investigated the treatment utility of functional assessment within a behavioral consultation framework. Specifically, the researchers compared one model of behavioral consultation utilizing functional assessment to develop individualized interventions with a second model of standard treatment packages. School psychology graduate students served as consultants in the study and they worked with eleven Head Start teachers. Teachers identified students from their classrooms who were demonstrating problem behaviors in school and worked with the consultants to identify interventions to address problem behaviors.

The researchers assigned consultation teams, which consisted of the school psychology graduate student and the classroom teacher, to one of two behavioral consultation approaches: functional assessment and technological. Although both approaches adhered to a similar consultation model, the functional assessment group conducted antecedent, sequential, consequential, and environmental analysis in an attempt to identify the hypothesized function of the student's behavior problem. The

functional assessment group also conducted structured classroom observations to identify the functions and maintaining variables of the student's problem behaviors.

Members of the functional assessment group then used the hypothesized functions of the student's behavior, as well as the environmental variables that appeared to sustain the behavior, to develop an individualized treatment plan for the target student. Consultation teams in the technological approach focused on the topography of the student's problem behavior. Once the behavior was classified as either externalizing or internalizing, the consultant provided the teacher with a self-help manual with information on selecting target behaviors, setting goals, and behavior management strategies in the classroom.

The researchers measured the effectiveness of each individual case-treatment by visually inspecting the data obtained during structured classroom observations, and by analyzing the effect sizes for each treatment. Overall, the results suggested that there was no statistical difference in intervention effectiveness between the functional assessment and technological approaches. Although the mean difference favored the functional assessment approach, the discrepancy did not reach significance. Schill et al. (1998) concluded that there were numerous explanations for the results of their study. First, the two consultation approaches often resulted in similar intervention strategies, such as differential reinforcement, to address student problem behaviors. Secondly, the functional assessment protocol used for the study did not meet the criteria for a complete functional analysis. Specifically, the researchers selected a form that did not consider medical conditions, skill deficits, or emotional and cognitive characteristics in the design of the individualized treatment plans. A final explanation of the results was that there was no

real difference between the interventions produced from the functional assessment and technological approaches.

Beavers, Kratochwill, and Braden (2004) also examined the treatment utility of functional assessment within consultation for reading problems. Three graduate students provided consultative support to eighteen elementary school teachers regarding thirty-two targeted students who were experiencing reading difficulties. The researchers randomly assigned the consultation groups to one of two conditions: functional assessment and empiric. Consultation groups in the functional assessment condition conducted antecedent, sequential, and consequential analysis and used a summary form to formulate hypotheses regarding the function of the students' reading difficulties. The consultation groups then used the results from the analysis to design and implement a function-based, academic intervention to address the identified reading difficulties for each student in this condition.

In the empiric condition, consultants did not consider potential causes of or conditions surrounding the reading problems. Instead, they simply provided the consultee with a list of five interventions that were chosen from the Pre-Referral Intervention Manual (PRIM; McCarney & Cummins, 1988) and were matched to the identified reading problem. The teachers then selected an intervention from the menu provided by the consultant. Direct assessments of the identified target reading problems served as the dependent variable for each student and effect sizes were utilized to compare intervention effectiveness across the two conditions. Once again, results of the study indicated that there was no significant difference between the two conditions.

Beavers et al. (2004) concluded that there were numerous potential explanations for the results of their study:

1. They cited concerns regarding the sensitivity of the selected outcome measure and the ability to document significant progress in such a short period of time.
2. They reported concerns regarding treatment contamination for teachers who were working with multiple students.
3. They noted that the outcome measures used for the study lacked sufficient reliability.
4. They indicated that the non-function-based academic interventions may have been similar to the function-based academic interventions.
5. They reported that the results may indicate that the functional assessment approach does not lead to superior interventions when contrasted to the empiric approach.

In a recent study by Newcomer and Lewis (2004), the researchers examined the treatment utility of FBA by comparing the effectiveness of function-based interventions to non-function-based interventions for three elementary students who were identified as at-risk for failure due to behavior problems. In phase one of the study, the school's student support team (SST) conducted descriptive functional assessments for each student and hypotheses were developed regarding the students' problem behaviors. In addition, they conducted functional analyses to confirm the hypotheses for each student. In the second phase of the study, the SSTs developed two treatment conditions for each of the three students: function-based and non-function-based. In the function-based condition,

SSTs developed behavior support plans based on the hypotheses developed in the first phase of the study. The manipulation of antecedent, instructional, and consequence variables were used to render the problem behavior irrelevant, inefficient, and ineffective. In the non-function-based condition, SSTs utilized behavior support plans offered by the classroom teacher that were focused on the topography of the student's behavior problems. Researchers conducted classroom observations to evaluate the effectiveness of behavioral interventions under both conditions.

Newcomer and Lewis (2004) concluded that the function-based behavior interventions were more effective than the non-function-based behavior interventions for each of the three students. These findings provided preliminary evidence to support the use of individualized behavior support plans that incorporate teaching functionally equivalent alternative behaviors and environmental engineering. The authors cited, however, two limitations of the study. First, the methodology contained a consistent order effect in which the function-based interventions always followed the non-function-based interventions. Second, the researchers failed to measure procedural integrity.

Most recently, Ingram et al. (2005) examined whether function-based interventions were more effective than non-function-based interventions in ameliorating the problem behaviors of two middle school students. The study included one teacher who nominated two male students, both of whom were (a) not receiving special education support, (b) demonstrating difficult behaviors that were interfering with their learning, and (c) had not been assessed using an FBA. The principal investigator, the school district's positive behavior support specialist, conducted FBAs for each student using the *Teacher-Directed Functional Assessment Interview* and the *Student-Directed Functional*

Assessment Interview (adapted from O'Neill et al., 1997). The researchers used the information obtained from the interviews to formulate hypotheses regarding problem behaviors. The principal investigator conducted classroom observations to verify hypothesis statements and three other observers completed interobserver agreement observations for 20% of all observation sessions.

Following the FBA process, the principal investigator developed two BIPs for each student: a function-based plan and a non-function-based plan. "Function-based intervention strategies emphasized ways to neutralize setting events, make antecedents irrelevant, reduce effectiveness of problem behavior by teaching new behaviors, and provide access to maintaining consequences for appropriate behavior while not allowing access to maintaining consequences for inappropriate behaviors" (O'Neill et al., 1997, p. 227). Non-function-based interventions consisted of empirically supported strategies that did not involve neutralizing setting events or manipulating antecedents that were identified in the FBA process. For example, one non-function-based intervention for a student who stared into space during instruction required the classroom teacher to simply ignore the behavior. Although this was identified as an evidence-based intervention, it was not necessarily matched to the perceived function of the student's problem behavior. The classroom teacher implemented the two behavioral interventions in a counter-balanced manner for each of the two students.

Results indicated that function-based intervention plans were more effective than non-function-based intervention plans for reducing the number of problem behaviors demonstrated by each student. Specifically, immediate decreases in the level of problem behaviors occurred when the function-based BIP was introduced for both students and

only one data point from the function-based condition overlapped with the data collected from the non-function-based condition. In addition, the one overlapping data point occurred when the student had not been medicated as usual. Lastly, the data was more stable during function-based conditions across both students.

Ingram et al. (2005) provided support for the FBA and PBS provisions of IDEA 2004. In addition, the results indicated that function-based BIPs were more effective than non-function-based BIPs for reducing problem behaviors across the two middle school participants. Finally, Ingram et al. stressed the importance of extending the generalizability of these results across grade levels and student populations.

Purpose of the Present Study

The responsibility of school-based teams to educate students who demonstrate problem behaviors that interfere with their learning and the learning of others continues to increase. Specifically, school-based teams are now required to conduct an FBA and consider the use of PBS strategies for a small population of students under a specific set of circumstances.

Tilly et al. (2000), however, argued that conducting an FBA could be considered a requirement for all students demonstrating problem behaviors in the classroom due to inter-related sections of IDEA 2004. This clearly widens the scope for FBA, and increases the number of students for whom an FBA would be conducted. In addition, it has led several researchers to examine the relative efficacy of interventions based upon FBA data (function-based), compared to interventions that are based upon the topography of the student's problem

behavior with no to little regard to the function the behavior may be serving (non-function-based) (Beavers et al., 2004; Ingram et al., 2005; Newcomer & Lewis, 2004; Schill et al., 1998).

Presently, research on function-based and non-function-based interventions has been inconclusive. Although some researchers have found function-based interventions to be more effective than non-function-based interventions (Newcomer & Lewis, 2004; Ingram et al., 2005), others have reported no significant differences between the two types of interventions (Schill et al., 1998; Beavers, et al., 2004).

The goal of the present study was to extend the recent findings of Ingram et al. (2005), as well as Newcomer and Lewis (2004), while addressing some of the methodological limitations that were reported by the researchers. The principal researcher examined the relative effectiveness of function-based and non-function-based BIPs for increasing the on-task behaviors of four elementary school students. Behavior support teams (BSTs) worked collaboratively with a first and third grade teacher to implement two distinct BIPs according to a pre-determined schedule for five consecutive weeks. BST members conducted daily structured classroom observations to monitor student progress in the classroom and to evaluate the relative effectiveness of the function-based and non-function-based behavioral interventions.

Based on the recent findings of Ingram et al. (2005) and Newcomer and Lewis (2004), it was hypothesized that function-based BIPs would be more effective than non-function-based BIPs at increasing on-task behavior across each

of the four students. If confirmed, these findings would provide additional support for the FBA provision in IDEA 2004. In addition, if function-based interventions prove to be more effective than non-function-based interventions, school-based teams may be encouraged to implement function-based positive behavior support strategies for students who are demonstrating problem behaviors in the classroom that interfere with their own learning as well as the learning of others.

Research Question

Do function-based BIPs outperform traditional intervention approaches that focus on topography of behavior (non-function-based) in regard to increasing on-task student behaviors within the regular education environment?

CHAPTER II

Methods

In this study, I compared BIPs based on FBA information (function-based) to BIPs that were not based on FBA information (non-function-based) to determine if one approach was significantly more effective for increasing the on-task behaviors displayed by four elementary school students. On-task behavior was targeted because the primary problem behaviors demonstrated by the four student participants all fell under the umbrella of off-task behaviors. These behaviors included talking-out, out-of-chair, inattentive, making noises, and noncompliance. Off-task behaviors were also targeted because they often interfere with academic instruction and are frustrating and confusing for teachers (Ellingson et al., 2000).

Utilizing a single-subject, multitreatment design across the four subjects, I examined the relationship between student behavior and function-based and non-function-based BIPs. I worked collaboratively with two classroom teachers and additional staff members who were trained in FBA; these participants constituted the school's Behavior Support Team (BST). Members of the BST obtained data through systematic classroom observations to determine the relative effectiveness of each intervention. Baseline phases were also included. Following is a detailed description of the setting, participants, instrumentation, and experimental design; specific procedures that were used in the study; and data analyses conducted to interpret the data obtained.

Setting

The present study took place in an urban, public elementary school in Massachusetts. The school serves 344 children from kindergarten through fifth grade and

class sizes range from 18-25 students. The student population is 70% White, 15% Asian, 4% African American, 8% Hispanic, and 3% multi-race, Non-Hispanic. In addition, English is a second language for 17% of the student population, and 10% were described as having limited English proficiency. Slightly above 10% of the students are from low-income families. Lastly, the special education population comprised slightly over 15% of the total student population; this is consistent with the state percentage (16.3%), while somewhat lower than the district-wide percentage (19.1%; Massachusetts Department of Education).

Participants

Individuals from three groups were involved in this project; teachers, behavior support teams, and students. Each participant was either a staff member or student at the school.

Teacher Participants

The principal nominated two teachers to participate, one from first grade and one from third grade. Teachers were nominated based on four criteria. First, they had approached the principal to discuss concerns regarding student behavior in their classroom. Second, they had expressed a desire to work collaboratively with the BST. Third, they were willing to accommodate daily observers in their classrooms. Finally, they were willing to commit to a consistent schedule throughout the duration of the study.

The first grade teacher was in her third year of teaching and holds a masters degree in education. She was 26 years old at the time of the study, and had spent three years at the first grade level. The third grade teacher was in her fourteenth year of

teaching and also holds a master's degree in education. She was 48 years old at the time of the study and has spent all 14 years at the third grade level.

BST

I invited staff members to join the BST based on willingness, availability, and principal approval. Then I presented an overview of the study to the school-based special education team and detailed the commitment necessary to join a BST. Specifically, interested candidates committed to (a) attending an FBA training seminar, (b) participating in two comprehensive FBAs, (c) providing regular teacher consultation, and (d) conducting daily classroom observations throughout the study. In addition, the school principal approved interested candidates to ensure administrative support throughout the study. Based upon these criteria, three qualifying candidates agreed to join a BST. No qualifying candidates were denied participation.

The school's inclusion facilitator was the first BST member. She holds a masters degree in special education and was in her fourth year in the position. The lead teacher from the school's behavior support classroom was the second BST member. She also holds a masters degree in special education and was in her third year of teaching. A school psychology graduate student who was completing a full-time internship at the school district to complete her master's program at a local university was the final BST member. Lastly, each classroom teacher was considered part of the BST for her respective students.

Students

The two classroom teachers participating in the present study nominated two students from their classrooms. Nominated students were demonstrating off-task

behaviors that interfered with their own learning and/or the learning of other students in the classroom. In addition, they were not receiving special education services, nor had the school conducted an FBA on the child previously. Two students from each classroom were identified, three boys and one girl.

The first student, Kenny, was a male from third grade. He was nine-years old and had attended his present school since first grade. Kenny's teacher nominated him because he demonstrated off-task behaviors that interfered with his work production throughout the school day, especially during math. Specifically, Kenny's teacher reported that he consistently leaned back in his chair, slumped over his desk, dangled his arms by his side, or rested his head on his desk. In addition, it was noted that Kenny rarely demonstrated active listening behaviors. Instead, he stared out the window or talked with other students during instruction. Lastly, Kenny's teacher reported that he had difficulty waiting his turn, raising his hand to ask a question, and completing work without adult support. Although Kenny's problem behaviors had been an area of concern since first grade, he had never received special education support services, nor had an FBA been conducted. His parents had refused formal evaluations and/or assessments due to their concerns regarding what they perceived as unfair treatment from classroom teachers.

The second student, Sharon, was in third grade and was also nine-years old. Sharon was nominated because she had difficulty listening to classroom instruction, completing work independently, and sustaining attention. Her teacher also reported that she often leaned over her desk with her eyes half-closed and appeared to be disinterested in classroom lessons. Unlike the other three students, Sharon had been evaluated due to an ADHD diagnosis. An FBA was not included in her previous evaluation, however, and

she did not receive special education support. She had a Section 504 accommodation plan (Wright & Wright, 2006), which provided her with specific accommodations for attention difficulties. The accommodations included preferential seating close to the point of instruction, extended time on tests and quizzes, and frequent movement breaks as needed. Sharon did not take medication for her ADHD at any point throughout the study.

The third student, Dennis, was a six-year old first grade student who had attended the school since kindergarten. The first grade teacher nominated Dennis because he was actively off-task for much of the school day. Specifically, it was reported that he consistently hid in the closet, refused to join the group area for instruction, and sat at his desk with his head down. It was also reported that Dennis told jokes, made faces during instruction, often distracted other students, and had a difficult time sitting still (he hung upside down on his chair and rolled around in the meeting area during phonics). Dennis had never received special education support, nor had he been evaluated because of the numerous regular education supports available to first grade students in the school.

The fourth student, Stephen, also from first grade, was six-years old and had attended the present school since kindergarten. Stephen was nominated because he was off-task for much of the school day. Specifically, his teacher reported that he had frequent somatic complaints, told jokes to classmates during instruction, used inappropriate language, argued with peers, and refused to complete assignments. Stephen had never received special education support, nor had he been evaluated because of the numerous regular education supports available to first grade students in the school.

In addition to the four students who served as the primary participants in the study, a fifth student was also identified to assist with the observation training that is

discussed in the procedures section. Specifically, I contacted the parents of a first grade student who demonstrated consistent behavior difficulties in the classroom and asked permission to videotape him during instructional periods to help provide training to participants on conducting structured behavioral observations as part of the study. I explained the study thoroughly to the parents and gave them an informed consent form. Although the student was not eligible for the present study because the school had already conducted an FBA and behavioral support had been put in place, I assured his parents that additional behavior consultation would be provided based on the information collected during the videotaping. The student's parents agreed to have him participate in the study and signed the informed consent form.

Measures

There were three types of measures used in the present study: (a) those used to document the FBA process, (b) those used to document the BIP process, and (c) those used to conduct classroom observations.

Measures of FBA Process

The BSTs used a functional assessment checklist (FAC; see Appendix A) from McConnell et al. (2001) to structure the FBA process. The BST chose this manual because it is the FBA model used throughout the school district. In addition, the school district's FBA training is based on this manual and each elementary school is provided with a copy for the school psychologist and inclusion facilitator. The FAC is a 20-step process for conducting an FBA and designing a BIP. The first 15 steps of the FAC are geared toward structuring the FBA process for the BSTs, while the final five steps are

geared toward behavior intervention planning, implementation, and evaluation. The authors do not provide evidence of reliability or validity for the FAC.

Measures of BIP Process

The BST also used the FAC to structure the BIP design and implementation stages of the present study. The final five steps of the FAC are geared toward BIP development, implementation, and evaluation. For the first two steps, the BST completed the BIP Plan Sheet (see Appendix F) and implemented the BIP in the classroom. For the final three steps, the BST collected three weeks of data, held a team meeting, and scheduled a follow-up team meeting. I altered the final three steps of the FAC to accommodate the experimental design used. This is explained in the subsequent experimental design section.

Measures of Classroom Observations

Members of the BST used a structured, classroom observation form to conduct daily observations of the four students in the classroom environment (see Appendix I). Observation forms were adapted from the Classroom Observation and Rating Schedule – Ten (CORS-10; Waxman, Wang, Lindvall, & Anderson, 1983). Observers utilized a momentary time sampling approach for classroom observations and target students were rated as being either on-task or off-task at the end of each 15-second interval. In addition, if a student was rated as being off-task, the observer delineated the specific off-task behavior by selecting from a list of eight categories. The categories included talking-out, out-of-chair, inattentive, making noises, noncompliance, physical aggression, verbal aggression, and other. The observation forms included operational definitions for each off-task category and are included in the appendix (Appendix I). The eight categories

included on the forms encompassed the problem behaviors demonstrated by the four target students, as described by their classroom teachers.

Momentary time sampling was utilized because it is considered to be a practical and direct approach for observing student behavior in the classroom (Tawney & Gast, 1984). I selected 15-second intervals to maximize the sensitivity of the approach while allowing sufficient time for reliable classification of problem behaviors at the molecular level. In addition, Alberto and Troutman (1995) stated that momentary time sampling is suitable primarily for recording behaviors that are frequent or of long duration; for example, attention to task, out-of seat behavior, or thumb sucking" (p. 126). Therefore, the momentary time sampling approach was also selected due to the primary target behaviors of the student participants.

Observation sessions lasted 20 minutes and the researchers conducted one session for each student per day. Observations occurred at the same time each day for each student. The classroom teacher identified the time of day during which the problem behaviors were the most disruptive and most difficult to manage for each of their students. That time period was designated as the observation time for each student. Although a single observer from the BST conducted the majority of the classroom observations (not always the same member of the BST), a second observer conducted simultaneous observations for 40% of the sessions to determine the reliability of the data. I calculated a kappa coefficient for each observation that included multiple observers to estimate reliability while simultaneously controlling for chance agreement.

Experimental Design

The goal of the present study was to determine if one behavioral intervention (function-based) was more effective than a second behavioral intervention (non-function-based) for four targeted students. Student behavior served as the dependent variable for each of the four students while the two distinct, behavioral interventions served as the independent variables. Most importantly, because each student was compared to himself or herself, an approach that contrasts with group-design research (Alberto & Troutman, 1995), a single-subject design was utilized. Specifically, a multitreatment design was used to compare function-based and non-function-based BIPs.

The multitreatment design is an extension of the reversal and withdrawal single-subject designs. It allows the researcher to compare two interventions by introducing them in a defined sequence and then comparing adjacent conditions. Barlow and Hersen (1984) referred to this design as the A-B-C-B-C design, with A representing the baseline condition, B representing the first treatment condition, and C representing the second treatment condition. The primary objective of the multitreatment design is to determine if any interventions are effective, and if so, if there is one intervention considered to be the most effective (Tawney & Gast, 1984). Following are descriptions of reviews basic characteristics, key considerations, and advantages of the selected design.

Basic Characteristics

Baseline. The first condition of the multitreatment design, like many single-case designs, is referred to as the baseline condition. This initial period of observation involves the repeated measurement of a student's target problem behaviors under normal

classroom conditions before specified treatments are implemented. The current study included a five-day baseline phase for each student. Although a three-day baseline phase would have been sufficient given stable data, the extended baseline phase provided stronger evidence for the stability of the data prior to implementing the treatments. In addition, McConnell (2001) recommended five consecutive days of baseline data. Additional baseline observations could have been conducted had they been needed to establish a stable trend.

Repeated measurement. Student behavior was the dependent variable in the present study. Members of the BST obtained data by conducting daily, structured observations in the classroom setting. These repeated measurements were used to determine which intervention was more effective at improving classroom behavior for each of the four students in the study. Therefore, ensuring that these measurements were both valid and reliable was critical. Barlow and Herson (1984) emphasized the importance of consistent, standardized, and replicable repeated measurements. They also emphasized the importance of incorporating interobserver reliability measures for human observers.

BST members conducted classroom observations during specific academic periods, at the same time of day, and in the same classroom setting throughout the study for each student. Prior to collecting observation data, BST members were responsible for completing the observation training, which is explained in the procedures section. The training provided BST members with strict guidelines for collecting observation data and opportunities to practice using the observation form prior to entering the classroom.

Number and sequence of interventions. The multitreatment design allows one to evaluate the comparative effectiveness of two or more interventions. In addition, one intervention can be combined with others to determine the effectiveness of a treatment package. Once the number of interventions has been identified, they are introduced in a defined sequence and compared to an adjacent condition (Tawney & Gast, 1984).

The present study consisted of two treatment conditions, function-based and non-function-based BIPs. A baseline condition preceded the first intervention, which was immediately followed by the second intervention. This initial sequence allowed for a direct comparison of the two interventions because they were adjacent conditions. In addition, the baseline phase provided a standard by which the subsequent efficacy of experimental conditions could be evaluated (Barlow & Hersen, 1984).

A return to baseline followed the second intervention. Lastly, the most effective intervention was re-introduced as part of a final treatment phase that allowed additional data to be collected. The additional treatment phase introduced after a second baseline, along with the replication across four subjects, provided strong evidence that the impact of a particular treatment was not due to a multiple-treatment effect. It also allowed the researcher to demonstrate that the intervention can continue to be effective beyond the scope of the experimental period (Neuman & McCormack, 1995). Lastly, concluding the study with the participants receiving the most effective intervention was important to me and the teachers for ethical and practical reasons. In fact, Barlow and Hersen (1984) stated that in order for a participant to receive the full benefits of an experimental treatment, some form of treatment should continue to its ultimate conclusion subsequent to completion of the research.

Key Considerations

The multitreatment design with a final treatment phase can be used to successfully answer the research question regarding the relative effectiveness of function-based and non-function-based behavioral interventions. The proposed design, however, had numerous important considerations to address to avoid spoiling the data and limiting the conclusions. Most importantly, the proposed design needed to address concerns regarding multiple-treatment interference.

Multiple-treatment interference. The term multiple-treatment interference "refers to the confounding of effects due to the presence of other treatments and the possibility that the effects of one treatment may be influenced by or carry over to another treatment" (Neuman & McCormack, 1995, p. 81). Neuman & McCormack suggest that this is a serious issue "because multiple-treatment interference can make it impossible to attribute the effects of a target behavior to a particular treatment" (p. 81). There are two primary areas of concern regarding multiple-treatment interference in a multitreatment design: sequential confounding and carryover effects.

Sequential confounding refers to the impact of having one intervention follow another intervention. This is also known as the order effect. For example, in Newcomer and Lewis (2004), the researchers examined the relative effectiveness of function-based and non-function-based behavioral interventions. Although they found function-based interventions to be more effective, they reported that a primary limitation to their study was that function-based interventions followed non-function-based interventions for all three of the students in the study. Therefore, they were unable to disprove the "rival

hypothesis that function-based interventions are only effective if they follow non-function-based interventions" (p. 179).

In order to detect the presence of an order effect, I counterbalanced the order of treatments across the four participants. Specifically, function-based BIPs preceded non-function-based BIPs for one student at each grade level, while non-function-based BIPs preceded function-based BIPs for the other student at each grade level. I determined the sequence of interventions for each student. Barlow and Hersen (1984) reported that counterbalancing the order of treatments across subjects should control for order effects if they are present.

Carryover effects "refer to the influence of one treatment on an adjacent treatment, irrespective of overall sequencing" (Barlow & Hersen, 1984). For example, positive carryover effect may be present if Treatment A is more effective when it is alternated with Treatment B than when it is administered independently. Barlow and Hersen (1984) reported that carryover effects have been found to be "almost always transient and due mostly to the inability of the subject to discriminate (between) two treatments" (p. 258). I took the following precautions to control for carryover effects.

First, the two classroom teachers checked-in with both of the target students from their classrooms and reminded them of which intervention would be administered that day. This ensured that students were able to discriminate between the two treatments. Secondly, since each condition was in place for five consecutive days, discrimination was not as much of a concern as it would have been in an alternating-treatments design. Third, counterbalancing the treatments not only helped detect potential order effects, but it reduced the impact of carryover effects as well. Finally, a baseline condition was

inserted between the second treatment phase and the preferred treatment phased to reduce carryover effects.

Advantages

I selected the multitreatment design with a final treatment phase because of numerous advantages that were critical for conducting research in the elementary school setting and comparing the relative effectiveness of two comprehensive behavioral interventions. First, the proposed design allowed for a quick comparison of the two behavioral interventions, function-based and non-function-based. Although some researchers recommend a return to baseline in between treatment conditions (Alberto & Troutman, 1995), this is not always necessary and extends the amount of time required to identify the preferred condition. Secondly, by utilizing a final treatment phase, I provided the classroom teacher with an intervention to support the targeted student for the remainder of the school year (or as long as the problem behaviors persisted).

Third, employing a multitreatment design allowed the researcher to compare two comprehensive behavioral interventions with few restrictions. Unlike the alternating treatments design that requires robust, single step interventions that lead to immediate changes in student behavior, the multitreatment design allows for a comparison of more complicated behavioral interventions. Implementing each intervention for five consecutive school days allowed the student to gain an understanding of the behavioral intervention and afforded the BST the opportunity to select multi-step interventions. Most importantly, the design allowed the researcher and teachers to determine treatment efficacy for individual students immediately.

Limitations.

Although the multitreatment design was the most appropriate experimental design to answer the research questions in the present study, it was important to consider limitations associated with multiple treatment interference and threats to internal validity. As discussed in the preceding key considerations section, I identified multiple treatment interference as a concern due to potential carryover and sequence effects. Specific strategies, as described above, were incorporated into the experimental design to minimize these concerns.

Threats to internal validity, specifically maturation and historical factors, are other limitations of the multitreatment design. Tawney and Gast (1984) stated that the amount of time that is needed to implement the multitreatment design fosters threats to internal validity because maturational and historical factors may occur during one condition but not another. The return to baseline between treatment conditions was incorporated into the research design to control for these specific threats to internal validity. Specifically, improvements in student behavior attributed to maturation or history would be reflected in the second baseline phase prior to implementing the second intervention. Therefore, it was important to compare each student's level of problem behavior across the two baseline conditions to determine the impact of maturational and historical factors. Counterbalancing treatments across students also helped control for maturation and historical factors.

Procedures

I presented the current study to the school district's assistant superintendent of curriculum and instruction and the principal of the elementary school where the research

was to be conducted. Subsequently, a proposal for the use of human participants was submitted to the Social Science Institutional Review Board (IRB) from The Pennsylvania State University. The school district and the IRB both approved the research project (see Appendix J). Following are the specific procedures used to conduct the present study.

Formation of Behavior Support Teams (BST)

Due to the numerous responsibilities placed upon the BST during the study, it was essential that each member of the team worked regularly at the school and was willing to commit the amount of time necessary to complete the study. Specifically, I informed the team members that the project would take approximately eight weeks, and that they would be expected to (a) collaborate with classroom teachers during the FBA process, (b) design and help classroom teachers implement function-based and non-function-based behavioral interventions, (c) conduct daily behavioral observations, and (d) attend training sessions for both FBA and structured classroom observations. Based on these criteria, three staff members were identified, each of whom agreed to participate. Full descriptions of each member of the BST are provided in the Participants section.

Teacher Selection

The principal of the elementary school identified two classroom teachers as qualified candidates. Specifically, the principal reported that each of the teachers had requested support for two or more of their students because of difficult behaviors. I then gave a brief presentation of the study to the two teachers and asked them if they would be willing to participate.

As part of the presentation, I specified that each teacher would be required to (a) attend an FBA training session, (b) participate in the FBA process for two of their

students, (c) help design and be primarily responsible for implementing function-based and non-function-based behavioral interventions, (d) implement the interventions in accordance with the multitreatment design schedule, and (e) allow members of the BST to conduct daily behavioral observations. Both teachers agreed to participate. In exchange for their participation each would be eligible for up to ten professional development points, which could be applied towards their re-certification.

Student Selection

Each classroom teacher nominated two students from her classroom in accordance with the previously mentioned selection criteria. I met with the legal guardians of each student, as well as the guardians for the fifth student who was included for observation training purposes, to describe the research project and to request permission for their child to participate in the study. A signed informed consent was required for each student prior to the beginning of data collection.

FBA/BIP Training

Members of the BST, which included the classroom teachers, attended a training seminar for conducting comprehensive FBAs and designing and implementing BIPs. A local authority on FBA and BIPs, who typically provides trainings to a citywide audience, agreed to offer a small-group training session to members of the BST. The training took place at the elementary school where the study was conducted and lasted approximately four hours.

The seminar leader provided copies of the FBA manual (McConnell et al., 2001) used in the present study to each attendee and structured the training accordingly. The seminar began with an introduction to the IDEA provisions related to FBA and PBS. The

seminar leader outlined when an FBA should be conducted and when PBS should be included in a student's IEP. Specifically, she stated that an FBA was required for students with disabilities who have behavioral issues resulting in a suspension or removal from school for more than ten days in a school year. She also noted, however, that an FBA should be conducted during pre-referral, comprehensive evaluations, re-evaluations, and for measuring the impact of behavior interventions. Lastly, she discussed the implications for training school-based teams.

The goals of FBA constituted the second component of the training. The seminar leader reported that the goals of conducting an FBA included (a) developing a better understanding of a student's problem behavior, (b) identifying environmental factors that impact the student's behavior, (c) developing an individualized support plan to decrease problem behaviors while simultaneously increasing positive behaviors, and (d) increasing the overall likelihood that the student will be successful in the school setting. A discussion of common FBA terminology followed the review of FBA goals. Terms discussed included antecedents, consequences, positive and negative reinforcement, setting demands, and functional analysis.

The seminar leader reviewed the steps of the McConnell et al. (2001) model of FBA for the third component of the training, which are provided in Appendix A. She explained the goal of each step, as well as the corresponding responsibilities of the school-based team. Following the review of the model, the seminar leader presented operational definitions for essential elements of FBA. These included problem behaviors, data collection techniques, environmental analysis, hypothesis statements, and common functions of problem behaviors.

Finally, the seminar leader discussed the connection between conducting an FBA and using the data to develop an individualized BIP. She provided examples of hypothesis statements and demonstrated how the statements led to specific components of individualized BIPs. For example, she reported that when a hypothesis statement indicates that a student demonstrates disruptive and violent behavior when unexpected changes in routine occur, the school-based team should be sure to include previewing changes in the schedule with the target student individually, outside of the classroom setting. Following the discussion, the seminar leader asked the participants to select a student from their classroom (either presently or in the past) and, as a group, they conducted a simulated FBA and developed an individualized BIP.

Observation Training

Members of the BST, excluding the classroom teachers, conducted the daily observations in the classrooms for each target student. Prior to conducting actual classroom observations, members of the BST attended a brief training session and conducted practice observations.

Training session. The training session focused on reviewing the five rules for conducting classroom observations (see Appendix K). The five rules were (a) always enter the classroom prior to the start time of the class being observed, (b) sit in an unobtrusive location, (c) do not engage in conversations with students, (d) communication between observers should be kept to a minimum, and (e) return observation materials to the rear conference room.

Practice observations. Following the training session, BST members conducted practice observations while watching a videotape of a first grade student in his classroom.

The videotape contained three, 20-minute observations of the student. I coded each observation segment of the videotape prior to the training sessions and utilized technological controls to ensure accurate classifications. For example, I paused the videotape at the end of each 15-second interval for coding purposes. In addition, I rewound the tapes when necessary to ensure accurate classifications.

My observation sheets served as the criterion by which the BST observation forms were judged. Prior to conducting live observations in the classroom as part of the current study, BST members had to reach 100% agreement with the principal researcher on each of the three observation segments. I provided feedback to the BST members for each 15-second interval for the first two behavior segments. BST members discussed disagreements and viewed the videotape to gain a better understanding of the classifications. For the third segment, however, I required BST members to code the observation session independently until they reached 100% agreement without feedback. Each of the three BST members successfully completed the training.

Identification of Target Behaviors

The non-function-based BIPs and the function-based BIPs both required a detailed description of the target behavior of concern. Therefore, the BST listed the problem behaviors exhibited in the classroom, and then identified one behavior considered to be the most detrimental to the student's learning. The BST then recorded a detailed description of that single behavior on the Target Behavior Assessment Form (see Appendix B) for each student. Identifying the primary target behavior accomplished two separate goals. First, it served as a guide for the non-function-based BIP. Secondly, it was

the first step in the FBA process, which provided valuable data to help the BST design and implement the function-based BIP.

Non-Function-Based Behavior Intervention Plans (BIP)

Based on the detailed description of the problem behavior, the BST designed the non-function-based BIP. It was critical for the BST to develop the non-function-based BIP at this stage prior to moving forward with the FBA process to ensure that (a) the design of the non-function-based BIP did not reflect additional data obtained from the FBA process, (b) components of the non-function-based BIP would be selected based strictly on the topography of the behavior (what it looked like), and (c) the likelihood of overlap between the non-function-based and function-based BIPs was minimized.

The BST matched the primary behavioral concern to a problem behavior included in the Teacher's Guide to Behavioral Interventions (Wunderlich, 1988). Once selected, the BST reviewed the recommended intervention strategies as a group and selected five of the recommended treatments. The teacher then selected three of the five recommended intervention strategies, which constituted the non-function-based BIP. Finally, the BST identified what support was needed during the non-function-based BIP implementation phase.

Functional Behavioral Assessment

In contrast to the development of the non-function-based BIP, which simply relied upon a description of the problem behavior, the development of the function-based BIP took place after the FBA was completed and all relevant data was available for the BST to consider. The FBA process (McConnell et al., 2001) was separated into five phases: identifying the target behavior, gathering background information, educational and

environmental analysis, behavior intervention planning, and behavior intervention implementation. In addition, the BST used the FAC to structure the FBA process. Following is a description of the first four phases of the FBA process and how they were carried out. In addition, fictitious examples of each form completed during the FBA process are provided in the appendix as indicated.

Identifying target behavior. The BST identified the primary behavioral concern for the target student during the first two steps of the FAC. Specifically, the BST completed the Target Behavior Assessment Form, which required a detailed description of the problem behavior and the physical environment where the behavior occurred. The BST also listed the instructional and behavioral expectations of the class in which the behavior occurred.

Background information. Once the BST identified the primary behavioral concern for the target student, they completed the next six steps from the FAC to obtain and review important information regarding the target student and the behavior of concern. During the phase, the BST collected baseline data for the behavior of concern in the student's classroom. It is important to emphasize the distinction between the observation data obtained during the FBA process, which was strictly qualitative by nature, and the baseline data obtained during the experimental phase of the study. The observation data collected during the FBA process was used to confirm the BST's selection of the primary problem behavior exhibited by the target student.

In addition to the observation data, a member of the BST completed the Student Interview Form (see Appendix C) to obtain data from the student regarding their perceptions of the problem behaviors they were demonstrating in the classroom. In

addition, the BST obtained information pertaining to preferred classes and interests during the student interview. This insight was important for intervention planning, and was incorporated into the function-based BIP. For example, preferred classes and interests were used as rewards for appropriate behavior as part of the function-based BIP on occasion.

I also contacted the parent(s) or guardian(s) of the target student to gather background information on the problem behavior in the home setting. I asked parents about the history of the child's behavior difficulties and the strategies used at home to manage the problem behaviors. In addition, the parents completed the Medical Form (see Appendix D). Information from the families of the child was also important for intervention planning purposes, and was incorporated into the function-based BIP when possible. For example, including a home-school communication component in the function-based BIP was more likely when the parents reported a willingness to be involved in the plan.

Finally, a member of the BST reviewed all academic information, assessments, and evaluation data that existed for the target student. This provided the BST with valuable information from report cards, literacy and math assessments, and evaluations. For example, the BST examined comments from report cards to document the progression of the student's problem behaviors. In addition, functions for those behaviors emerged when they were considered in conjunction with the data obtained during the FBA process.

Educational and environmental analysis. The BST then completed the Educational and Environmental Analysis Form (see Appendix E). This allowed the BST

to gain a comprehensive understanding of the environment in which the problem behavior was occurring. In addition, a member of the BST examined each student's disciplinary records. Information obtained from the Educational and Environmental Analysis From was important for intervention planning purposes, and was incorporated into the function-based BIP when possible. For example, discussing the classroom set-up and structures allowed the BST to design a BIP that could be implemented with minimal disruption to the classroom environment.

Behavior intervention planning. The fourth phase of the FBA process provided structure for the BST to design the function-based BIP. First, the classroom teacher completed the Behavioral Intervention Plan Sheet (see Appendix F), which reviewed the behavior of concern and the relative effectiveness of previous interventions that had been put in place for the target student. The Behavior Intervention Plan Sheet also required the classroom teacher to explain what they were presently doing in the classroom to address the behavior of concern and what they would like to try as part of the function-based BIP. The data from the Behavioral Intervention Plan Sheet provided the BST with valuable information pertaining to the efficacy of interventions that had been implemented in the classroom previously. The teacher's responses also informed the BST about her preferences for interventions. The BST reviewed the Behavioral Intervention Plan Sheet at the subsequent team meeting.

The goal of the team meeting was to complete the Functional Assessment Interview Form (see Appendix G), formulate a hypothesis regarding the behavior of concern, and complete the Behavior Intervention Plan worksheet (see Appendix H). The Functional Assessment Interview Form required the BST to collectively describe the

primary problem behavior and define environmental factors related to the behavior. The hypothesis statement described the relationship between the behavior and the environment. This included a detailed description of the problem behavior, as well as a description of the factors that assisted in determining the occurrence of the problem behavior (McConnell et al., 2001). The BST used the hypothesis statement as a guide for BIP development.

Finally, the Behavior Intervention Plan worksheet provided the BST with structure for recording the function-based BIP. The worksheet included a section for summarizing observation data, restating the hypothesis statement, and clearly describing the problem behavior and intervention goal. In addition, the BST selected components of the function-based BIP to match the perceived function of the problem behavior. For example, if it was reported that a student walked around the classroom during morning meeting time because they were not able to stay seated for long periods of time, a function-based BIP would likely include scheduled movement breaks that would provide the student with an opportunity for movement in a more appropriate manner. The BST then listed implementation guidelines describing when and where the plan would be implemented on the worksheet. Comparisons of function-based and non-function-based BIPs for each student are provided in the results section.

Design Multitreatment Schedule

The treatment schedule lasted five weeks, which allowed the BST to collect 25 days of data for each student. The 25 days were separated into five conditions: baseline (5 days), treatment 1 (5 days), treatment 2 (5 days), a return to baseline (5 days), and a final treatment phase (5 days). I counterbalanced the two treatments, function-based and non-

function-based BIPs, in each classroom. Therefore, while one of the first grade students was subject to the function-based BIP condition, the other was participating in the non-function-based BIP condition. The final treatment phase consisted of re-implementing the preferred treatment for each of the four participants.

Review Intervention and Schedule with Classroom Teachers

Once the BST designed the function-based and non-function-based interventions and established the treatment schedule, it was important to review them with the classroom teacher. I provided the classroom teachers an intervention calendar for each student (see Appendix L) that indicated which intervention condition was to take place each day. I also provided the teachers a detailed description of each intervention condition (see Appendix M), as well as copies of additional materials needed for each condition (e.g., a sticker chart). Lastly, I met with each classroom teacher briefly each morning to review the plan for the day and to make sure they had all of the materials that were needed for the scheduled intervention.

Intervention Implementation and Data Collection

In accordance with the final four steps of the FAC, the BST then implemented the BIP, collected intervention data, held a three-week team meeting, and scheduled a follow-up team meeting. These steps were slightly altered to accommodate the experimental design of the study. Instead of simply implementing the function-based BIP, the classroom teacher implemented the BIPs in accordance with the intervention schedule discussed in the previous section. BST members then collected intervention data through structured daily observations.

The BST then reviewed the data collected from baseline and treatment conditions at the three-week team meeting. Based upon the observation data, the BST identified the more effective intervention and re-implemented it following the return to baseline for each student. The more effective intervention was defined as the condition associated with the highest mean level of on-task behavior.

Treatment Integrity

I conducted task analyses for each function-based and non-function BIP to develop treatment integrity checklists, which were used to ensure that each intervention was implemented consistently and accurately. I provided a checklist to both teachers for each condition. The checklists consisted of integrity ratings for five days for each condition (see Appendix N). The teachers completed the appropriate treatment integrity checklist based on the treatment schedule at the conclusion of each day. At the end of each experimental condition, the teachers placed the checklists in a folder in the my office.

Treatment integrity checklists were included in the present study for two primary reasons. First, if the BIPs were not implemented with integrity it would compromise the internal and external validity of the study (Lane et al., 2004). Secondly, the treatment integrity checklists provided a detailed list of intervention components delineating the responsibilities of the classroom teachers for each condition.

Data Analysis

The effectiveness of function-based and non-function-based BIPs were compared through a multitreatment research design with a final treatment phase across four elementary students. Due to the research design employed it was important to examine

the reliability of the data and conduct visual analysis of the data obtained. An examination of the treatment integrity checklists and classroom observation data was critical in establishing that the data obtained was reliable. Visual analysis of the data across the four conditions helped determine if there was a functional relationship between student behavior and treatment conditions.

Treatment Integrity Checklists

Classroom teachers completed treatment integrity checklists at the end of each experimental condition for each student (weeks two, three, and five). I calculated component integrity and session integrity for each student. Component integrity was calculated by dividing the number of days that a teacher reported implementing a component of the BIP by the total number of days from the condition (the total number of days was always five unless the student was absent). Session integrity was calculated by dividing the number of components that a teacher reported implementing by the total number of components from the checklist.

Behavioral Observations

BST members conducted behavioral observations to determine if there was a functional relationship between function-based and non-function-based BIPs and student behavior in the classroom. Members of the BST conducted the classroom observations, and when possible, two observers were used (this constituted 40% of the observations from the present study). Prior to determining if there was a functional relationship between behavior interventions and student behavior, it was critical to ensure that the data obtained from classroom observations were reliable. Although there are numerous interobserver agreement indexes, researchers have consistently identified kappa as the

interobserver agreement index of choice (Suen & Ary, 1989; Bryington, Palmer, & Watkins, 2004).

SPSS 14.0 was used to calculate kappa coefficients of agreement for each observation period that included two observers. To ensure that reliability was not over/underestimated, it was important to conduct reliability calculations on the unit of behavior subject to substantive analysis (Barlow & Hersen, 1984). The primary unit or level of behavior under analysis in the present study was molar. Therefore, kappa coefficients were calculated for each observation session that included two observers and the unit of analysis was agreement on whether the student being observed was rated as on-task or off-task. In addition, MacKappa (2002) was used to calculate partial kappa coefficients for each observation session that included two observers to examine the reliability with which the independent observers classified the off-task behaviors into specific categories. Guidelines for interpreting kappa were taken from Cicchetti (1994) and are provided below:

Over 0.75 = excellent clinical significance

0.60 – 0.74 = good clinical significance

0.40 – 0.59 = fair clinical significance

Below 0.40 = poor clinical significance

Visual Analysis

Kazdin (1984) reported that visual analysis is the most commonly used method for determining if an intervention has had an effect on behavior. Visual analysis is conducted by examining the data after it has been plotted on a graph. Specific areas of interest in visual analysis include comparisons within and across conditions.

Within conditions. The visual analysis of data within a condition focuses on the stability of the data by examining the level and trend present in the series of data within that condition. The term *level* "refers to the magnitude of the data as indicated by the ordinate scale value" (Tawney & Gast, 1984, p. 161). Level stability was examined for each experimental condition as well as the baseline phases across the four students. Each condition was considered stable if 80% of the data points (4 out of 5) fell within a 15% range of the mean level of all data point values of a condition (Tawney & Gast, 1984).

The trend of a data series refers to the direction or slope of the data paths across time. Trend can be referred to as accelerating (increasing in ordinate value over time), decelerating (decreasing in ordinate value over time), or zero celeration (parallel to the abscissa) (Tawney & Gast, 1984). Similar to the interpretation of level, it is also important to note whether trends in data indicate that behavior is improving or decaying. Trend lines were drawn for each condition across the four students using the split-middle method (Tawney & Gast).

Across conditions. The visual analysis of data across conditions focuses on the change in level and trend from one condition to the next. Level refers to the average percentage of on-task behavior according to the structured observation data recorded during each condition. Mean scores were calculated for stable conditions, and median scores were calculated for unstable conditions. Trend refers to the direction in which the on-task behavior appears to be going. The trend for each condition was calculated using the split-middle technique. A therapeutic change in trend following the introduction of an experimental treatment preceded by a stable baseline provides support for a functional

relationship between treatment and the behavior being recorded. Changes in level and trend were examined for each change in treatment across all four students.

The percentage of non-overlapping data points across conditions is an alternative indicator of intervention effectiveness and helps determine if one intervention is superior to another intervention. The first step in calculating the percentage of non-overlapping data points is to identify the two conditions being compared. Secondly, the range for the first condition must be identified by subtracting the lowest value from the highest value. Finally, calculating the percentage of data points from the second condition that do not fall within the range of data points from the first condition provides the percentage of non-overlapping data points.

Calculating the percentage of non-overlapping data points provides additional information regarding the functional relationship between the experimental condition and student behavior. Due to the multitreatment design being used in the present study, however, it is important to note that only adjacent conditions should be compared (Tawney & Gast, 1984). Therefore, the percentage of non-overlapping data points was calculated for all adjacent conditions across the four students.

The following guidelines taken from Bloom, Fischer, and Orme (1999) were used to determine the relative effectiveness between conditions across all four students. The numbers in parentheses represent the required criteria in the present study.

Over 90% = very effective (no overlapping data points)

70% - 90% = effective (1 overlapping data point)

50% - 70% = questionable (2-3 overlapping data points)

below 50% = ineffective (more than 3 overlapping data points)

CHAPTER III

Results

FBA Data

The BST obtained the following information about each student through the FBA process. The team used the data to formulate hypothesis statements to explain the functionality of each student's problem behaviors. The BST used the hypothesis statements as a guide for designing the function-based BIPs, which are described below. The non-function-based BIPs, which the BST designed based on the topography of the problem behavior, are also described. Finally, it should be noted that it was not possible to include copies of the original FBA protocols for each student due to the researcher's responsibility to protect confidentiality.

Kenny

Problem behavior. Target behavior assessment results indicated that the problem behaviors for Kenny included fidgeting with toys or materials from his desk, slumping over in his chair during instruction, not orienting his body towards the point of instruction, interrupting the teacher, initiating conversations with peers during instruction and independent work time, and walking around or leaving the classroom without permission. These target behaviors were collapsed into three categories: inattentive, talking out, and out-of-chair. I utilized the following definitions for Kenny's target behaviors.

1. Inattentive behavior included (a) not looking at the teacher during instruction, (b) playing with materials or objects from one's desk, (c) looking around the

room, (d) staring out the windows, (e) looking towards the ground, (f) hanging off of a chair, (g) sitting upside down, or (h) laying across a chair.

2. Talking out behavior included (a) speaking without permission to a peer or teacher, or (b) interrupting a conversation within the classroom.
3. Out-of-chair behavior included movement within the classroom when not permitted, including (a) opening a window, (b) shutting the door, (c) walking around the classroom, (d) leaving the classroom, and (e) leaving the group meeting area.

Background information. Information gathered from Kenny's educational records indicated that he struggled with attention, body control, and emotional regulation in first grade. In addition, it was noted that he often needed individual support to complete assignments in a timely manner, but presented as extremely capable when the support was provided (usually by a teacher's assistant). Kenny's second grade teacher found him to be more manageable and standard classroom accommodations were sufficient in helping him control his behavior. Specific accommodations included frequent teacher check-ins, preferential seating, and a class-wide behavior plan. Lastly, Kenny had attended school consistently since first grade and did not have any documented suspensions on file.

During the student interview, Kenny reported that he usually got into trouble for hitting kids, doing dangerous things (such as jumping off of the swings), and distracting his friends while they are working. He also noted that his problem behaviors were more common during art and math. Specifically, Kenny reported that sometimes during math he would lie and tell the teacher he could not do the work. When asked about the

consequences of his behavior difficulties, Kenny indicated that he lost recess, was sent to the Penalty Box, or was sent downstairs to complete work in the office.

The Penalty Box was part of the classroom behavior plan and entailed a student's name being written on the front board inside a picture of a penalty box. Once a student's name was in the Penalty Box, additional problem behaviors were recorded by checks placed next to the student's name. If a student received three checks during a single school day, they were deprived of recess. Lastly, the teacher removed checks from a student's name, or removed a student from the Penalty Box, when he or she demonstrated positive behavior.

Kenny reported that he enjoys physical education (PE), recess, Open Circle (social competency program), and playing games. His favorite part of the school day, however, was the after-school program during which he was permitted to play on the computer. Kenny stated that he did not like math, science, reading, or word study. Finally, Kenny indicated that he benefits from taking walks around the school, playing on the computer, and going to PE.

Kenny's parents indicated that his medical history was unremarkable and that he did not take any medications other than those related to seasonal allergies. They also noted that his behavioral difficulties had been identified by his teachers since pre-school, and that they have struggled to manage his behaviors in the home setting. Their primary concerns for Kenny included his inconsistent ability to follow directions and respect authority. Lastly, they reported that he was sent to his room when he demonstrated difficult behaviors at home.

Setting events and environmental factors. Kenny was one of 24 students in his third grade classroom. A full-time classroom teacher, a half-time teaching assistant, and a full-time student assistant (assigned to a specific student throughout the day) worked in the classroom. The students' desks were chunked into groups of six. At the time of the study, however, Kenny's teacher had separated him from his peers and his desk was placed in the middle of the back wall in the classroom. A list of classroom rules was posted on the front board consisting of over 20 rules that were generated by the students.

Kenny's teacher reported that his problem behaviors were most disruptive during math. She indicated that a typical math period started with a brief review of the lesson from the previous day, during which students were expected to remain in their seats. Following the review, the students worked in small groups or independently on the present concept or remained at their desks for whole class instruction of a new concept. Kenny's teacher reported that whole class instruction lasted between five and ten minutes and incorporated both visual and verbal techniques. She also expected students to work independently at their desks or in small groups once the whole class lesson was completed. During this time, teachers circulated around the classroom and checked in with students.

Kenny's teacher reported that the most difficult portion of the math period was whole class instruction. She indicated that he played with things from his desk, interrupted the lesson by either calling out or walking around the classroom without permission, or simply put his head on his desk. Kenny's teacher also reported that he struggled during small group and independent work time. He often made jokes or teased his peers during small group work. In addition, Kenny's independent work production

was inconsistent and he would often rely on one-to-one support from a teacher to complete the assignments. When one-to-one support was not provided, Kenny would often play with something from his desk or distract his classmates by telling jokes or wandering around the classroom.

The immediate consequences for Kenny's problem behaviors included avoiding work, having his name added to the Penalty Box, and attention from both teachers and peers. On occasion, the teacher asked Kenny to take his work down to the main office and work outside of the principal's office until he was asked to return to the classroom. Kenny's teacher reported that she had not been able to identify a consequence for his problem behaviors that led to a positive change in his behavior.

Hypothesis. Members of Kenny's BST hypothesized that his problem behaviors were associated with attention difficulties that were compounded by his lack of positive relationships with peers and teachers. In addition, the BST reported that Kenny lacked some basic academic strategies. Specifically, they noted that he struggled to ask for help in an appropriate manner. The BST also indicated that Kenny appeared to enjoy coming to school each day and was eager to interact with both staff and classmates. Therefore, increasing the number of positive social interactions that Kenny experienced each day was a priority. Lastly, the BST reported that Kenny's problem behaviors, although disruptive, were efficient and enabled him to avoid work, led to attention from both teachers and peers, and often resulted in one-to-one attention from staff in the building with whom he enjoyed working (school psychologist and principal).

Hypothesis statement. Kenny played with materials from his desk, walked around the classroom, and talked to classmates in order to avoid work and gain attention from

both teachers and peers. Since it was difficult for Kenny to gain the same attention through positive means, he resorted to these problem behaviors that proved to be efficient strategies. Finally, Kenny's problem behaviors were less likely to occur when he was provided with individual attention from valued staff members, understood how to ask for help, and was provided with tangible reinforcement, such as stickers.

Function-based BIP. The function based plan for Kenny consisted of (a) providing him with a laminated "Asking for Help" script that was reviewed with him each morning, (b) providing frequent teacher check-ins when he was demonstrating positive behaviors in the classroom, and (c) implementing a behavior management chart targeting effort and behavior that was shared with his after-school teacher to determine the amount of time he was allowed to use the computer.

The "Asking for Help" script provided Kenny with a four-step reminder of a social skills lesson that was taught to his classroom earlier in the school year. The classroom teacher attached one copy of the script to the top of Kenny's desk and gave a second laminated card to Kenny to keep in his pocket. The BST included the script in the function-based BIP to teach Kenny alternative methods for asking for help and gaining attention from his teacher. The BST told his teacher to remind Kenny throughout the day to refer to the script when he called out or appeared to have trouble starting an assignment.

The BST incorporated frequent teacher check-ins into the function-based BIP to increase positive social interactions between Kenny and his teacher and to help ameliorate his attention difficulties. The teacher checked in during whole-class instruction, small group work periods, and independent work periods. The BST told

Kenny's teacher to keep the check-ins brief by identifying what it was that Kenny was doing correctly, why his behavior was important, and how his behavior could lead to rewards through the behavior management plan.

Finally, the BST incorporated a behavior management chart into the function-based BIP. The plan targeted effort and behavior throughout the school day and utilized a simple sticker-chart format. Effort was defined as preparing for each academic period by taking out the appropriate materials, attempting assignments independently following teacher instructions, and requesting assistance as needed. Behavior was defined as demonstrating active listening and being respectful of peers. Specifically, Kenny was expected to sit appropriately in his assigned seat, orient himself toward the point of instruction, and engage in positive interactions with classmates.

The behavior management chart utilized laminated pictures of a computer that were attached to the chart using Velcro. At the end of each core academic period throughout the school day, Kenny met briefly with the classroom teacher to decide if he had earned a laminated picture of a computer for effort and/or behavior. In the case of a disagreement, Kenny was told that the teacher always made the final decision. Finally, at the end of the school day, Kenny shared his daily chart with his after-school teacher and received three minutes of computer time for each computer token that he had earned.

The BST included the behavior management chart in Kenny's function-based BIP to (a) increase positive teacher attention, (b) increase independent work production by connecting it to a reward that Kenny reported enjoying, and (c) establish a connection between the classroom and after-school settings. The outcomes of the FBA, the

relationships between FBA results and the selected components of the function-based BIP, and the rationale for the chosen interventions are delineated in Figure 1.

Non-function-based BIP. The non-function-based BIP for Kenny consisted of (a) providing him with a quiet place to work, (b) breaking down assignments into smaller steps with quick breaks in between, and (c) establishing a visual signal for Kenny and his teacher to use when he started to demonstrate a problem behavior. The BST selected these strategies from the Teacher's Guide to Behavioral Interventions (Wunderlich, 1988) based on the topography of the problem behaviors prior to conducting the FBA.

The teacher set up a small space behind her desk that included a table and a single chair. Kenny was told that he could use the space at any time during the school day during the non-function-based condition. In addition, his teacher recommended that Kenny use the space during work time when he was fidgeting at his desk, looking or walking around the room, or talking with peers.

To break up assignments into smaller steps, the teacher numbered the steps required to complete independent work assignments for Kenny. For example, if the students were told to complete a specific math page in their math journals, the teacher sat with Kenny and separated the page into smaller steps. He was expected to complete the first two problems and then go get a drink of water. Upon his return, Kenny would answer two more problems before erasing a portion of the whiteboard for the teacher. Small work periods were alternated with quick breaks to accommodate Kenny's attention difficulties.

Finally, Kenny and his teacher agreed that she would tap her fingers on a portion of his desk when he was demonstrating problem behaviors in the classroom. His teacher

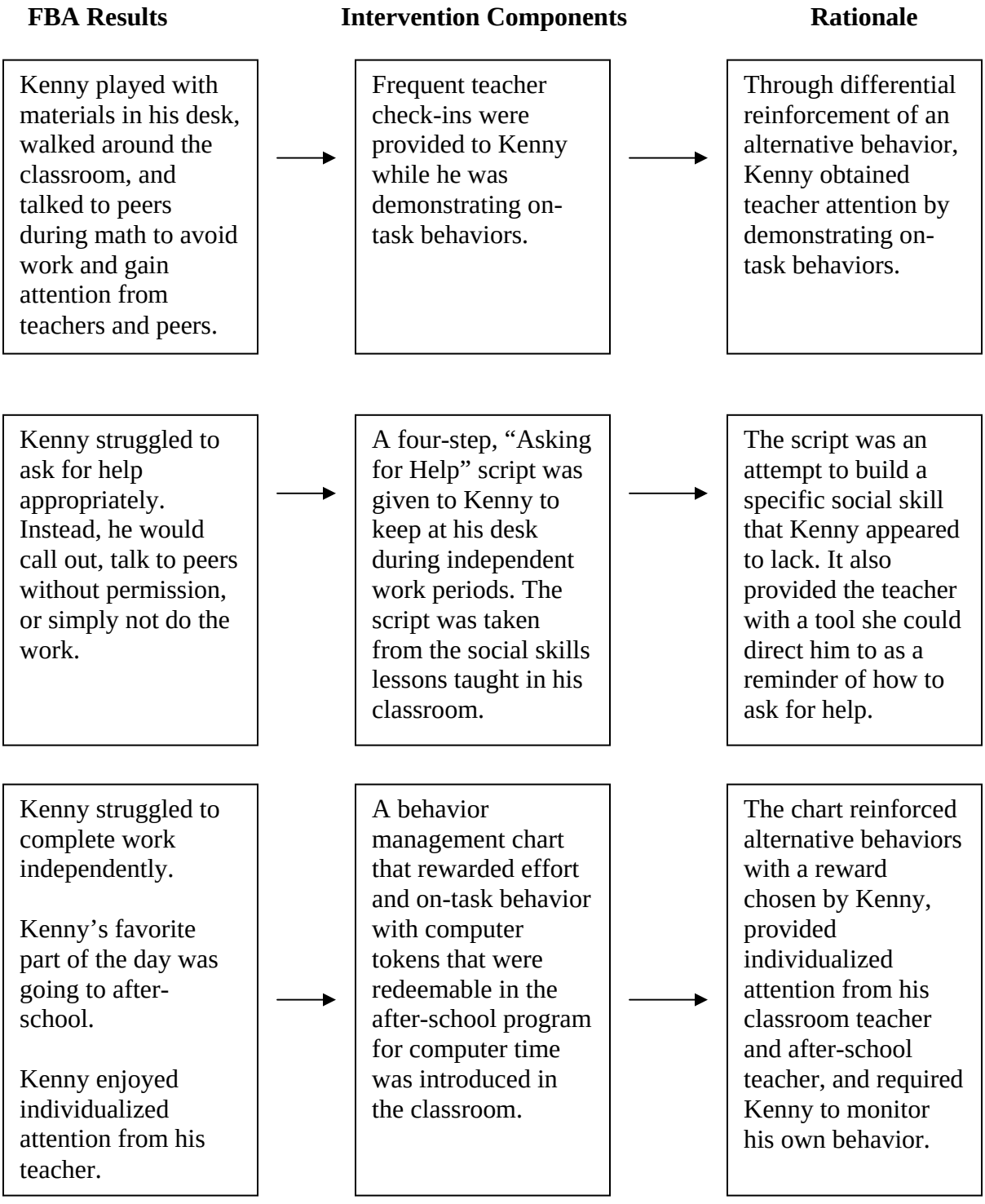


***Figure 1*. FBA Results, Intervention Components, and Intervention Rationales for Kenny.**

reminded him each morning during the non-function-based condition that when she tapped his desk he should get back to work. A brief comparison of the components that constitute the function-based and non-function-based BIPs for Kenny is provided in Table 1.

Sharon

Problem behavior. FBA results indicated that the most problematic behavior for Sharon was difficulty sustaining attention. Sharon also made faces and put her head down on her desk following teacher directions to begin an assignment. These target behaviors were collapsed into two categories: inattentive and noncompliance.

The same definition for inattentive behavior used for Kenny was also used for Sharon. The definition included (a) not looking at the teacher during instruction, (b) playing with materials or objects from one's desk, (c) looking around the room, (d) staring out the windows, (e) looking towards the ground, (f) hanging off of a chair, (g) sitting upside down, or (h) laying across a chair. Noncompliance was defined as failure to initiate the appropriate response as requested by the teacher.

Background information. Information gathered from Sharon's educational records indicated that she was diagnosed with attention-deficit, hyperactivity disorder (ADHD) – combined type during her kindergarten school year. Teacher reports indicated that Sharon's difficulties with hyperactivity, attention, impulsivity, and organization had often interfered with her progress, both socially and academically. Specifically, Sharon's teachers consistently reported that she required repetition of directions following whole class instruction, had trouble sitting still in her seat, struggled to wait her turn when asking questions, and often lost assignments. Although both of her teachers reported

Table 1

Intervention Components of FBA and Non-FBA BIPs for Kenny

FBA BIP	Non-FBA BIP
An "Asking for Help" script	Quiet, private place to work
Frequent Teacher Check-Ins	Breaking assignments into smaller steps
Behavior Management Chart	Visual Signal

Note. FBA BIP = function-based behavior intervention plan; Non-FBA BIP = non-function-based behavior intervention plan.

these concerns since kindergarten, Sharon's restlessness and hyperactivity, according to teacher reports, had decreased each year. Specific accommodations that had been provided for Sharon to this point included movement breaks, asking her to repeat directions, and explicit structure (i.e., posting and previewing the daily schedule). Lastly, Sharon attended school consistently since kindergarten and did not have any documented suspensions on file.

During the student interview, Sharon reported that she usually got into trouble for not paying attention, talking too much with her friends, or for losing things. She also noted that her problem behaviors were more common during morning meeting, literacy, school assemblies, and library (which are low organization environments). Specifically, Sharon reported that she talked to her friends during whole class lessons, had trouble keeping track of her materials, and struggled to get started with independent work

following whole class instruction. Despite her difficulties, Sharon reported that she loved spending time with friends, loved her teacher, and wanted to do well in school. When asked about the consequences of her behavior difficulties, Sharon indicated that the teacher was frustrated with her a lot, she was not allowed to work in groups at times, and that sometimes her name was placed in the Penalty Box.

When Sharon was asked about her favorite parts of the school day, she reported that she enjoyed math because she always knew if the answer was correct or not. In addition, she indicated that she really enjoyed working with friends, going to recess and PE, and getting good grades on projects. Lastly, Sharon reported that she was most successful when she worked really hard, worked directly with a teacher or one classmate, and when she kept her desk clean so she would not lose things. Sharon's least favorite part of the day was literacy block because she did not like reading chapter books and it was too long (the school's literacy block was ninety minutes). In addition, she reported that it was boring and she could not work with her friends.

Sharon's parents indicated that her medical history was unremarkable with the exception of the ADHD diagnosis. Although they had discussed medication with her pediatrician, they were not comfortable with the potential side effects and believed that her behavior was improving each year. Sharon's parents also reported that her difficult behaviors look different in the home setting. Specifically, they indicated that she worried about work and disappointing her teacher. At home, disorganization led to significant frustration and Sharon would cry at times and simply refuse to do work. Her parents believed that negotiating with her when she was upset was counterproductive, so they would usually allow her to stop working for the night and send an email to the teacher

describing the incident. This allowed Sharon to escape the situation. The primary concerns for Sharon's parents included her emotional outbursts, organization, and that she continue to be happy with school. Lastly, they reported that taking away her allowance money was their most effective punishment at home.

Setting events and environmental factors. Sharon was one of 24 students in her third grade classroom. A full-time classroom teacher, a half-time teaching assistant, and a full-time student assistant (assigned to a specific student throughout the day) worked in the classroom. The students' desks were chunked into groups of six. Sharon sat in the front of a group of desks closest to the point of whole class instruction. The teacher posted a list of classroom rules on the front board consisting of over 20 rules generated by the students.

Sharon's teacher agreed that the literacy block was the most difficult part of the school day for Sharon. She indicated that Sharon struggled to sustain attention during whole class instruction, lost materials critical for completing assignments, and was often frustrated that she was not able to work with her friends. Regarding Sharon's attention difficulties, her teacher reported that she placed her head on the desk during instruction and struggled to get started on independent work because of increased peer interaction. Sharon's teacher also reported that her desk was extremely disorganized which contributed to her difficulties keeping track of assignments and paperwork. Finally, Sharon's teacher explained that when students were broken into smaller groups based on their respective reading level, Sharon was often disappointed that she could not work with her best friends; both of whom were in different reading groups (one higher and one lower). Her disappointment manifested in walking around the room and talking with

friends from other groups. Most of the time, Sharon begrudgingly joined her assigned group.

Despite Sharon's behavioral difficulties, her teacher reported that she was an engaging student who got along well with her classmates and worked hard to please adults during small group instruction and in one-to-one settings. In addition, she noted that Sharon beamed with pride when she completed an assignment correctly or earned a good grade on a project. Finally, she indicated that Sharon was responsible when she was given a classroom job and enjoyed taking messages to the office or to other classrooms.

The immediate consequence for Sharon's inattentive behavior was attention from both teachers and peers. Her teacher reported that when Sharon did not appear to be paying attention during instruction, she either tapped her on the head or called on her to answer a question. In addition, when her inattention persisted, the teacher added Sharon's name to the Penalty Box. Sharon's disorganization resulted in avoiding work and gaining attention from teachers and/or classmates, both of whom would help her find the necessary materials to complete assignments. Finally, the immediate consequences for Sharon's procrastination behaviors prior to joining her assigned reading group included spending time with friends, avoiding work, and attention from the teacher when she was placed in the Penalty Box. Overall, Sharon's teacher reported that she had not identified a consequence for her problem behaviors that led to a consistent, positive change.

Hypothesis. The BST reported that Sharon's problem behaviors were associated with attention and organizational difficulties, which made it difficult for her to recall teacher directions, get started on independent work promptly, and maintain organized materials. The BST also noted that Sharon valued her friendships in the classroom and

often compromised her educational output in order to spend time with preferred peers. Finally, Sharon's connection with the classroom teacher and responsible behavior around classroom jobs were two areas of strength that were considered critical in the development of a BIP.

Hypothesis statement. Sharon did not attend to whole class instruction consistently and her organizational difficulties made it difficult for her to begin work following teacher directions. When Sharon placed her head on her desk and did not complete her work, either independently or in a small group, she escaped from academic demands and often received individual attention from both teachers and peers. Finally, Sharon's problem behaviors were less likely to occur when she was working with preferred peers, completing classroom jobs, and when her materials were organized.

Function-based BIP. The function-based plan for Sharon consisted of (a) daily jobs, (b) a work completion chart, and (c) organizational check-ins. First, the teacher provided Sharon with daily jobs at the start of independent and small group work periods, which she was allowed to complete with a peer of her choice. Jobs included things such as handing out worksheets or classroom materials, delivering messages to other classrooms or the office, and erasing the white boards. The BST included daily jobs in Sharon's function-based BIP because the FBA data indicated that she had been successful in the past when given jobs to complete, and that she valued spending time with preferred peers. Although daily jobs were given throughout the school day, a job was consistently provided during the literacy block when the students were transitioning from whole class instruction to small group or independent work during the function-based phase.

The BST included a work completion chart in the function-based BIP to identify assignments that were to be completed throughout the school day and to provide small rewards for Sharon's effort; effort was once again defined as preparing for each academic period by taking out the appropriate materials, attempting assignments independently following teacher instructions, and requesting assistance as needed. At the end of each period, Sharon reviewed the chart with her teacher and they jointly decided whether or not she earned a sticker for effort on the predetermined assignment. They tallied the stickers at the end of the school day and Sharon chose a reward from her daily reward menu based on the number of stickers she had earned.

The BST incorporated the work completion chart into the function-based BIP for three reasons. First, since the FBA data indicated that Sharon was eager to please her teacher, it was believed that the one-to-one check-ins with the teacher following each period would provide Sharon with extra motivation. Secondly, the list of classroom assignments to be completed each day was designed to support Sharon's efforts to become more organized. Finally, providing Sharon with small rewards for demonstrating consistent effort in the classroom provided her with tangible, positive reinforcement.

Finally, organizational check-ins consisted of inspecting Sharon's desk, Work-In-Progress (WIP) folder, and Book Box. Sharon earned bonus stickers on her work completion chart if her teacher determined that these areas were neatly organized. The BST included the organizational check-ins in the function-based BIP because Sharon's organizational difficulties had a negative impact on her work production. It was believed that the checklists would provide external structure to combat Sharon's disorganization. The outcomes of the FBA, the relationships between FBA results and the selected

components of the function-based BIP, and the rationale for the chosen interventions are delineated in Figure 2.

Non-function-based BIP. The non-function-based BIP for Sharon consisted of (a) a daily preview and review of the schedule with the teacher, (b) checklists targeting independent work and organization, and (c) frequent teacher check-ins with small rewards for on-task behavior. The BST selected these strategies from the Teacher's Guide to Behavioral Interventions (Wunderlich, 1988) based on the topography of the problem behaviors prior to conducting the FBA.

During the non-function-based BIP condition, the teacher met with Sharon each morning and went through the schedule, providing brief explanations of what to expect during each period. For example, if the schedule began with literacy block, the teacher might say, "We start our day with literacy block today and we will be finishing up our reflections on the book that we read on Monday." At the conclusion of each day, the teacher met with Sharon and reviewed the schedule and reflected on her performance during each period.

Sharon's teacher also provided her with two laminated checklists designed to help her with independent work production and overall organization. She taped the checklists to the top of Sharon's desk. The independent work checklist consisted of four steps:

1. Clear off the top of your desk.
2. Take out only the materials you need for the assignment.
3. Ask for help if you are unsure of what to do.
4. Hand in your work to the teacher once you are finished.

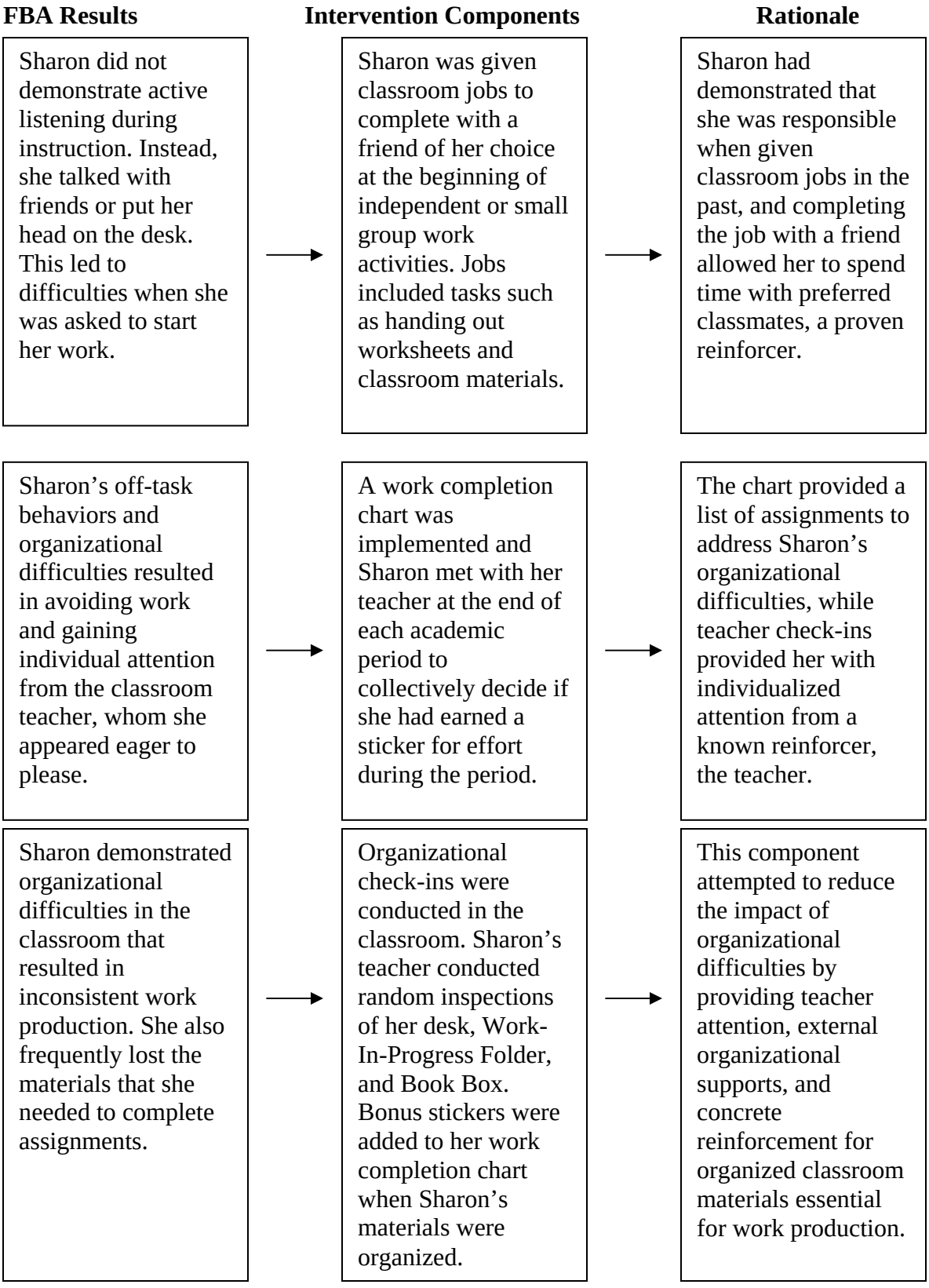


***Figure 2*. FBA Results, Intervention Components, and Intervention Rationales for Sharon.**

Similarly, the organization checklist also consisted of four steps:

1. Keep your desk clean and neat each day.
2. Review your Works-In-Progress folder at the start of each day.
3. Organize your Book Box at the start of each day.
4. Ask the teacher for help if you are having trouble finding materials.

Finally, the teacher made frequent check-ins with Sharon during the non-function-based condition. If Sharon was meeting the expectations of the current work period, she was given small rewards, such as stickers or colorful pencils. A brief comparison of the components that constitute the function-based and non-function-based BIPs for Sharon is provided in Table 2.

Dennis

Problem behavior. Target behavior assessment results indicated that the problem behaviors for Dennis included putting his head on his desk, sitting upside down in his chair, pulling his shirt over his head, talking to peers during instruction, walking around the room without permission, playing with classroom materials without permission, refusing to join group area, and making noises. These target behaviors were collapsed into five categories: inattentive, talking out, out-of-chair, noncompliance, and making noises. I utilized the same definitions for Dennis' target behaviors as those used for Kenny and Sharon, and defined making noises as creating an audible noise other than a recognizable vocalization (such as growling, beeping, or grunting).

Background information. Information gathered from Dennis' educational records indicated that he was an active kindergarten student who demonstrated difficulties with body control and attention. His kindergarten teacher also noted that he was engaged in

Table 2

Intervention Components for FBA and Non-FBA BIPs for Sharon

FBA BIP	Non-FBA BIP
Daily Job	Daily preview and review of schedule
Work Completion Chart	Organizational Checklists
Organizational Check-Ins	Frequent Teacher Check-Ins

Note. FBA BIP = function-based behavior intervention plan; Non-FBA BIP = non-function-based behavior intervention plan.

frequent peer conflict due to difficulties waiting his turn and sharing. Despite these difficulties, his kindergarten teacher reported that he was a happy student who had several friends in the classroom. Academically, Dennis' records indicated that he was a capable student who picked up new concepts with ease when he was engaged. Lastly, it was noted that Dennis benefited from frequent movement breaks and being allowed to stand while he worked. Dennis attended the school consistently since kindergarten and did not have any documented suspensions on file.

During the student interview, Dennis reported that he did not get into trouble very often, but on occasion he talked with his teacher because he did not pay attention or chewed on his shirt. He also noted that he had the most difficulties during morning meeting and phonics because everyone sat in the group area and he had trouble sitting still for too long. When asked about the consequences of his behavior difficulties, Dennis

indicated that he had his behavior card changed (this was part of the classroom behavior plan that was discussed in the environmental factors section).

Dennis reported that he enjoyed physical education (PE), recess, lunch, art, and math. He also indicated that he did not like phonics, reading, or Daily Oral Language (DOL) because they were too boring. Finally, Dennis indicated that he benefited from taking bathroom breaks, walking around the school, and delivering messages to the PE teacher.

Dennis' mother indicated that his medical history was unremarkable and that he did not take any medications. She also noted that his behavioral difficulties were discussed in kindergarten, but appeared to escalate throughout the first grade school year. She reported being divorced from Dennis' father for four years, and indicated that he had not been in contact with Dennis for approximately six months. She was uncertain as to whether this was contributing to his difficult behaviors. Her primary concerns for Dennis included his inattention, hyperactivity, and mood swings. Lastly, she reported that she removed privileges, such as television and video games, when he demonstrated difficult behaviors at home.

Setting events and environmental factors. Dennis was one of 23 students in his first grade classroom. There was a full-time classroom teacher, a full-time student teacher, and a full-time student assistant (assigned to a specific student throughout the day) assigned to the classroom. The students' desks were chunked into groups of four. A list of five classroom rules was posted throughout the classroom. The rules included raise your hand; keep your hands, feet, and body to yourself; walk quietly; treat others how you would like to be treated; and be safe.

In addition to the posted rules, the teacher utilized a classroom-wide behavior plan for all of the students. Each student had a behavior folder that was kept on the back wall of the classroom. The folder held the student's behavior card for each day. The students would place a green card in the folder when they were having a good day, a yellow card in the folder if told to do so by the teacher due to minor behavior difficulties, and a red card in the folder for repeated or more serious behavior difficulties. Students started the day with a green card in their respective folder. Having to change their card was associated with losing privileges, such as choice time, recess, and access to the computers.

Dennis' teacher reported that his problem behaviors were most disruptive during phonics. She indicated that phonics began with students sitting in their assigned spots in the group area and reviewing the sounds they had learned throughout the year in a listen-and-repeat format. Following the review, the teacher presented a new sound and the students were asked to give examples of words that contained the featured sound. Students were expected to raise their hand and wait until the teacher called on them prior to responding.

Following the group instruction, students were expected to transition back to their desks and set up their letter boards (these were cookie sheets with magnetic letters used for spelling practice). Once the students were set up, the teacher presented a word for the students to spell using their letter boards. The teacher then asked for volunteers to spell the words on the white board in front of the class. This exercise was repeated for the remainder of the phonics period.

Dennis' teacher reported that the entire phonics period was difficult for him. He consistently struggled to join his classmates in the group area, demonstrated poor body control when he was in the group area, had a difficult time transitioning to his seat to work on the letter boards, and distracted his peers during the small group activity. In addition, his independent work production was inconsistent and he often required one-to-one support in order to attempt the words during phonics.

The immediate consequences for Dennis' problem behaviors included avoiding work, having his behavior card changed, and attention from both teachers and peers. Many of Dennis' classmates found his behavior to be amusing, especially when he pulled his shirt over his head or hung upside down in his chair. On occasion, Dennis would be asked to take his work down to the principal's office until he was asked to return to the classroom. Dennis' teacher reported that she had not been able to identify a consequence for his problem behaviors that led to a positive change in his behavior, with the lone exception being when he was sent to the principal's office.

Hypothesis. Members of Dennis' BST hypothesized that his problem behaviors were due to hyperactivity, attention difficulties, poor social skills, and positive reinforcement from peers for silly behaviors. The BST also indicated that Dennis was an engaging, humorous, capable, and creative student who enjoyed interacting with both teachers and peers during unstructured, social situations (i.e., recess and lunch). Lastly, the BST reported that Dennis' problem behaviors, although disruptive, were efficient and enabled him to avoid work, gain attention from both teachers and peers, and gain one-to-one attention from staff in the building with whom he enjoyed working (school psychologist).

Hypothesis statement. Dennis refused to join the group meeting area, sat awkwardly in his chair, and wandered around the classroom in order to avoid participating and possibly failing during structured, academic activities that required him to sit still for prolonged periods of time. In addition, his classmates, through laughter and attention, reinforced his behaviors. Classroom teachers, through one-on-one attention, provided additional reinforcement while he was away from the group. Since it was difficult for Dennis to gain the same attention through positive means, he resorted to these problem behaviors that proved to be efficient strategies. Finally, Dennis' problem behaviors were less likely to occur when he was provided with frequent movement breaks and individual attention from valued staff members.

Function-Based BIP. The function-based BIP for Dennis consisted of a (a) behavior chart targeting on-task behavior and work completion, (b) scheduled movement break, (c) social skills reminder chart, and (d) three strikes and you are out behavior policy. The classroom teacher used the behavior chart to monitor Dennis' work production and on-task behavior during five of the academic subjects throughout the school day (phonics was always included). At the end of each academic period, Dennis met with the classroom teacher to discuss his work production and behavior and he was awarded up to two stars for each category. At the end of the school day, Dennis met with the classroom teacher and tallied his stars to determine what he had earned according to the reward menu that he created with teacher assistance.

The BST included the behavior chart in the function-based BIP because it provided Dennis with consistent, individualized attention from the classroom teacher. It also provided tangible, positive reinforcement for appropriate behavior and work

production. Appropriate behavior was defined as sitting upright at his desk and in the group meeting area, and orienting his body toward the point of instruction. Work production was measured by examining Dennis' assignments at the end of each activity to determine whether or not it had been completed. Lastly, by allowing Dennis to tally his own stars, the teacher provided him with extra math practice, which Dennis identified as his favorite subject.

The BST incorporated movement breaks into the function-based BIP because FBA data indicated that Dennis struggled to remain seated for prolonged periods of time and had a hard time transitioning to his desk from the group area during phonics. Therefore, Dennis was allowed to leave the group area during phonics five minutes early to get the letter boards from the back of the classroom and place one at each desk. This provided him with a movement break that was socially appropriate since he was still capable of attending to the lesson while handing out the letter boards.

The social skills reminder chart consisted of five icons representing social skills lessons that were part of the first grade socials skills curriculum. The teacher attached a full-sized copy of the chart, which included the icons as well as the corresponding social skills, to his desk. In addition, she gave him a pocket size, laminated copy of the chart that only included the icons to keep in his pocket throughout the day. When Dennis exhibited poor social skills, his teacher would remind him to look at the chart and figure out what he needed to change about his behavior.

The BST included the social skills reminder chart in the function-based BIP because Dennis struggled with basic social skills such as raising his hand, sitting up straight in the meeting area, and looking at the teacher when she was talking. In addition,

it was an efficient and creative method for reminding Dennis to monitor his behavior, and he had demonstrated an appreciation for creative teaching techniques throughout the year.

Finally, the BST incorporated a three strikes and you are out behavior policy because the FBA data indicated that Dennis had not been responsive to classroom consequences throughout the year. The one effective strategy, which had only been used on rare occasions, was when the teacher sent Dennis to the principal's office. The new policy provided Dennis with two reminders within each academic period regarding his problem behaviors. Following a third incident, the teacher sent him to the principal's office.

The BST included the behavior policy in the function-based BIP because the FBA data indicated that a previous trip to the principal led to improved behavior upon his return to the classroom. The outcomes of the FBA, the relationships between FBA results and the selected components of the function-based BIP, and the rationale for the chosen interventions are delineated in Figure 3.

Non-function-based BIP. The non-function-based BIP consisted of (a) a work completion chart, (b) positive reinforcement for completed assignments, and (c) frequent teacher check-ins to "catch him being good." The BST selected these strategies from the Teacher's Guide to Behavioral Interventions (Wunderlich, 1988) based on the topography of the problem behaviors prior to conducting the FBA.

Dennis and his teacher began each day during the non-function-based condition reviewing the work completion chart. The chart listed the assignments that Dennis was expected to complete that day. At the conclusion of each academic period, Dennis and his teacher reviewed his work to determine if he had earned a sticker for completing the

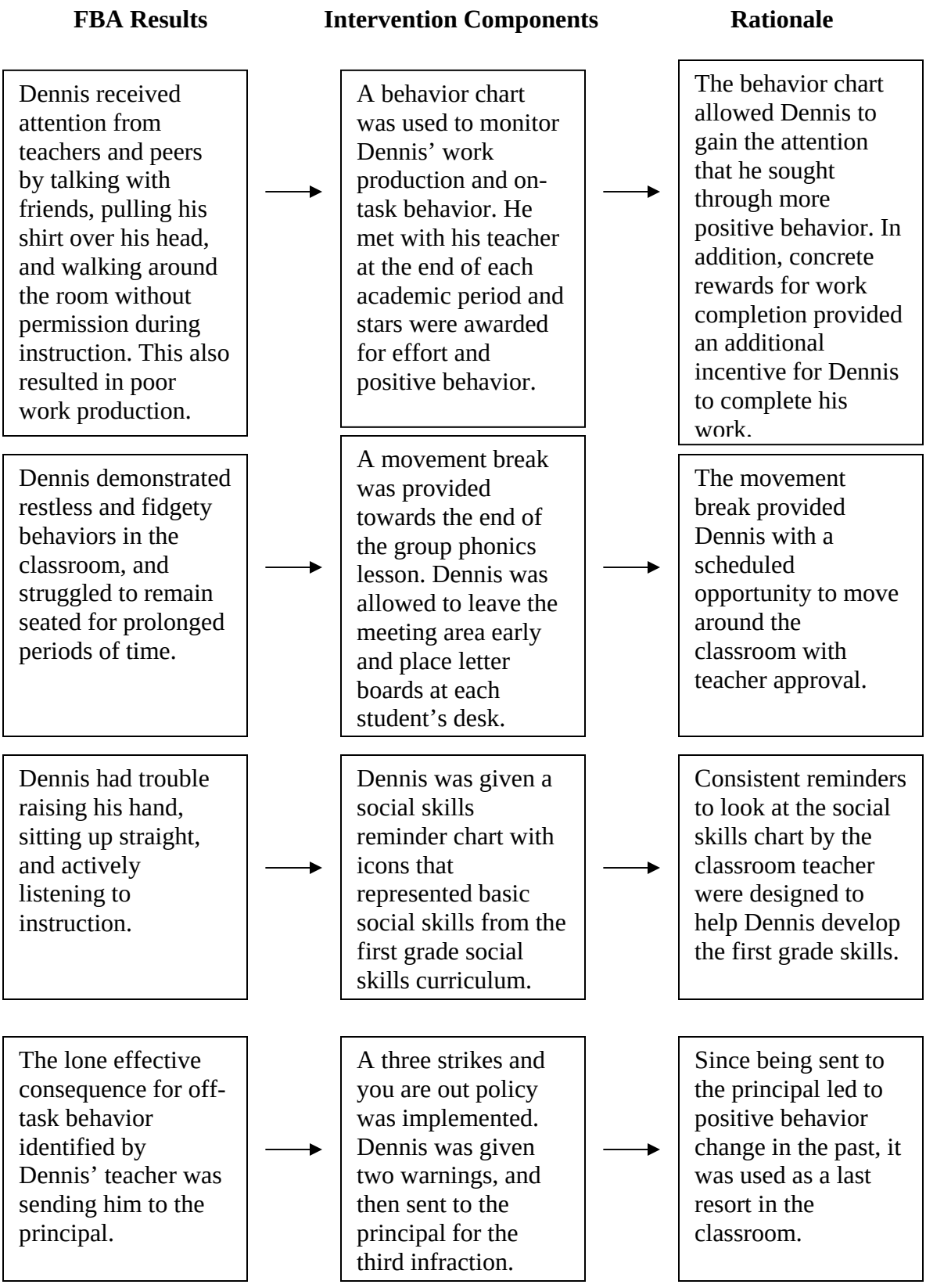


***Figure 3*. FBA Results, Intervention Components, and Intervention Rationales for Dennis.**

assignment. His stickers were tallied at the end of each day and Dennis exchanged them for rewards from his personal reward menu.

In addition to the work completion chart, Dennis' teacher checked-in with him frequently throughout the day as part of the non-function-based BIP. Specifically, she checked in with Dennis when he was (a) sitting quietly in his seat or the group area, (b) orienting himself toward the point of instruction, (c) completing his work independently, and (d) speaking kindly to peers during group activities. A brief comparison of the components that constitute the function-based and non-function-based BIPs for Dennis is provided in Table 3.

Stephen

Problem behavior. The results from the target behavior assessment indicated that problem behaviors for Stephen included refusing to attempt assignments, talking to peers during instruction, not looking at the teacher during instruction, using inappropriate language, teasing, and name-calling. These target behaviors were collapsed into four categories: noncompliance, inattentive, talking-out, and verbal aggression. I utilized the same definitions for Stephen's target behaviors as those used for Kenny, Sharon, and Dennis. In addition, verbal aggression was defined as making remarks to a teacher or peer that are offensive and/or inappropriate (such as name-calling, swearing, or threatening).

Background information. Stephen's educational records indicated consistent problem behaviors in his preschool classroom. It was noted that Stephen was involved in frequent conflict with teachers and peers, demonstrated physical and verbal aggression, and often failed to follow teacher directions. Specifically, Stephen's teacher reported that he defied authority by refusing to complete assignments, talked back to authority figures,

Table 3

Intervention Components for FBA and Non-FBA BIPs for Dennis

FBA BIP	Non-FBA BIP
Behavior Chart	Work Completion Chart
Scheduled Movement Break	Concrete Positive Reinforcement
Social Skills Reminder Chart	Frequent Teacher Check-ins
Three Strikes Policy	

Note. FBA BIP = function-based behavior intervention plan; Non-FBA BIP = non-function-based behavior intervention plan.

teased other students in the classroom, and occasionally pushed or kicked other students. Although Stephen's difficult behavior continued in kindergarten, it was not as consistent or intense. His kindergarten teacher's primary concerns included him not getting along with his classmates during unstructured activities (such as recess or choice), his lack of independent work production, and his general attitude towards school. She added that Stephen made frequent comments such as "I hate school" and "learning is stupid."

Academically, Stephen's records indicated that his literacy skills were below grade level expectations in both kindergarten and at the midpoint of first grade. In addition, he struggled with math concepts and often required one-on-one instruction to complete assignments. When support was provided, however, Stephen presented as capable and did not appear to exhibit any significant learning difficulties. Lastly, his

teacher noted that Stephen benefited from frequent teacher check-ins, consistent home-school communication, and reminders to stay on task. Lastly, Stephen attended school consistently since kindergarten and did not have any documented suspensions on file.

During the student interview, Stephen reported that he did not like school and often got into trouble for not doing his work and for calling other kids "stupid." He also noted that he had the most difficulties during math because it was boring. When asked about the consequences of his behavior difficulties, Stephen reported that he had his behavior card changed and that the teacher called his mother. He did not identify a favorite part of the school day or favorite subject, and reported that the only thing that people could do to help him was let him stay home.

Stephen's mother indicated that his medical history was unremarkable and that he did not take any medications. She noted that his behavior difficulties had been a major concern since pre-school, but improved each year. Her primary concerns for Stephen included his defiant behavior, poor attitude toward school, and the impact that his behavior had on his learning. In addition, she reported that his two older brothers demonstrated similar problem behaviors in school and that the oldest brother was recently expelled from middle school and was being home-schooled until a private placement could be agreed upon.

Setting events and environmental factors. Stephen was one of 23 students in his first grade classroom. There was a full-time classroom teacher, a full-time student teacher, and a full-time student assistant (assigned to a specific student throughout the day) assigned to the classroom. The students' desks were chunked into groups of four. A list of five classroom rules was posted throughout the classroom. The rules included raise

your hand; keep your hands, feet, and body to yourself; walk quietly; treat others how you would like to be treated; and be safe.

In addition to the posted rules, a classroom-wide behavior plan was used for all of the students. Each student had a behavior folder that was kept on the back wall of the classroom. The folder held the student's behavior card for each day. The students would place a green card in the folder when they were having a good day, a yellow card in the folder if told to do so by the teacher due to minor behavior difficulties, and a red card in the folder for repeated or more serious behavior difficulties. The students would start the day with a green card in their respective folder. Having to change their card was associated with losing privileges, such as choice time, recess, and access to the computers.

Stephen's teacher reported that his problem behaviors were most disruptive during math. She indicated that math began with students sitting in their assigned spot in the group area and reviewing the activity from the previous day. Following the review, the teacher presented a new worksheet or activity and asked the students to work through a few examples as a group. The teacher expected students to raise their hands and wait until the she called on them prior to responding. Following the group instruction, she expected students to transition back to their desks and complete the assigned worksheets or pages from their math journals independently. Stephen's teacher reported that the whole class instruction and transition to independent seatwork were the most difficult components of the math period for Stephen. He consistently talked to and distracted his classmates in the group area, often called out without raising his hand, and struggled to get started on assignments without adult support.

The immediate consequences for Stephen's problem behaviors included avoiding work, having his behavior card changed, and attention from both teachers and peers. Stephen's teacher reported that the only successful strategies that she had identified were allowing him to say hello to his older brother in fourth grade during a two-minute break, and having him work one-on-one with an adult with whom he had a trusting relationship because Stephen did not work well with new people.

Hypothesis. Members of Stephen's BST hypothesized that his problem behaviors were due to poor social skills, attention difficulties, and a negative attitude towards school that was reinforced by years of modeling by his two older brothers. In addition, the BST reported that Stephen had not enjoyed many positive experiences within the school setting and that his parents' limited involvement in his education had typically been due to behavior difficulties. Lastly, the BST indicated that Stephen's willingness to work with trusted adults suggested a need for feeling safe and positive attention from preferred adults.

Hypothesis Statement. Stephen talked to peers and called out during whole class instruction to gain attention from classmates and teachers. He lacked the appropriate social skills to gain the same attention through positive behavior. In addition, Stephen's poor work production consistently led to increased levels of attention from both his teachers and parents. Stephen's problem behaviors were less likely to occur when he was provided with individual attention from teachers with whom he shared a trusting relationship. Finally, poor behavior at school had become the norm for Stephen's older brothers and a common topic of conversation in the household. His brothers appeared to reinforce reports of poor behavior at school.

Function-Based BIP. The function based plan for Stephen consisted of (a) a behavior chart targeting effort and respectful behavior and (b) a home-school communication folder. The teacher used the behavior chart to monitor Stephen's effort and respectful behavior throughout the day and it included three daily check-ins with his classroom teacher. The BST scheduled the check-ins prior to snack, lunch, and dismissal. Stephen met briefly with his teacher to decide if he would earn zero, five, or ten points for his effort and his respectful behavior during that portion of the school day. Effort was defined as preparing for each academic period by taking out the appropriate materials, attempting assignments independently following teacher instructions, and requesting assistance as needed. Respectful behavior was defined as using appropriate language and being kind to classmates and teachers. Based upon his points at the end of the day, Stephen could choose from a reward menu that he helped create.

The BST incorporated the behavior chart into the function-based BIP to provide Stephen with consistent opportunities to gain individualized attention from the classroom teacher without having to demonstrate problem behaviors. In addition, the chart allowed Stephen to earn rewards for positive behavior and effort. Finally, the BST theorized that providing Stephen with individual attention, via teacher check-ins, immediately prior to his more difficult parts of the school day would lead to an overall decrease in problem behaviors.

The BST included the home-school communication folder in the function-based BIP to increase the positive attention he received from his parents for his academic accomplishments at school, while simultaneously decreasing the amount of negative attention he received for problem behaviors in the school setting from his brothers.

Stephen was told to select one assignment each day to share with his parents. The selected assignment was sent home in the folder. The outcomes of the FBA, the relationships between FBA results and the selected components of the function-based BIP, and the rationale for the chosen interventions are delineated in Figure 4.

Non-Function-Based BIP. The non-function-based BIP for Stephen consisted of (a) a daily job, (b) being paired with a model peer, and (c) frequent breaks. The BST selected these strategies from the Teacher's Guide to Behavioral Interventions (Wunderlich, 1988) based on the topography of the problem behaviors prior to conducting the FBA.

Stephen's teacher gave him a classroom job, such as handing out papers, at the beginning of each academic period during the non-function-based condition. She would check in with Stephen briefly prior to starting each activity and give him a specific task to complete prior to joining the group.

Stephen's teacher also carefully planned the groups that he would participate in throughout the day during the non-function-based condition. Specifically, she paired him with one of four model peers that were identified prior to the start of the study. She selected the four peers because Stephen had worked well with each of them in the past and they rarely demonstrated problem behaviors in the school setting.

Finally, Stephen's teacher provided frequent, one-minute breaks as part of the non-function-based BIP. Specifically, when she observed Stephen following directions, working well with others, or using kind words, she would give him a timer set for one-minute and tell him that he could take a quick break. During breaks, Stephen was allowed to get a drink or water, look in the gym, or say hello to a teacher of his choice. A brief

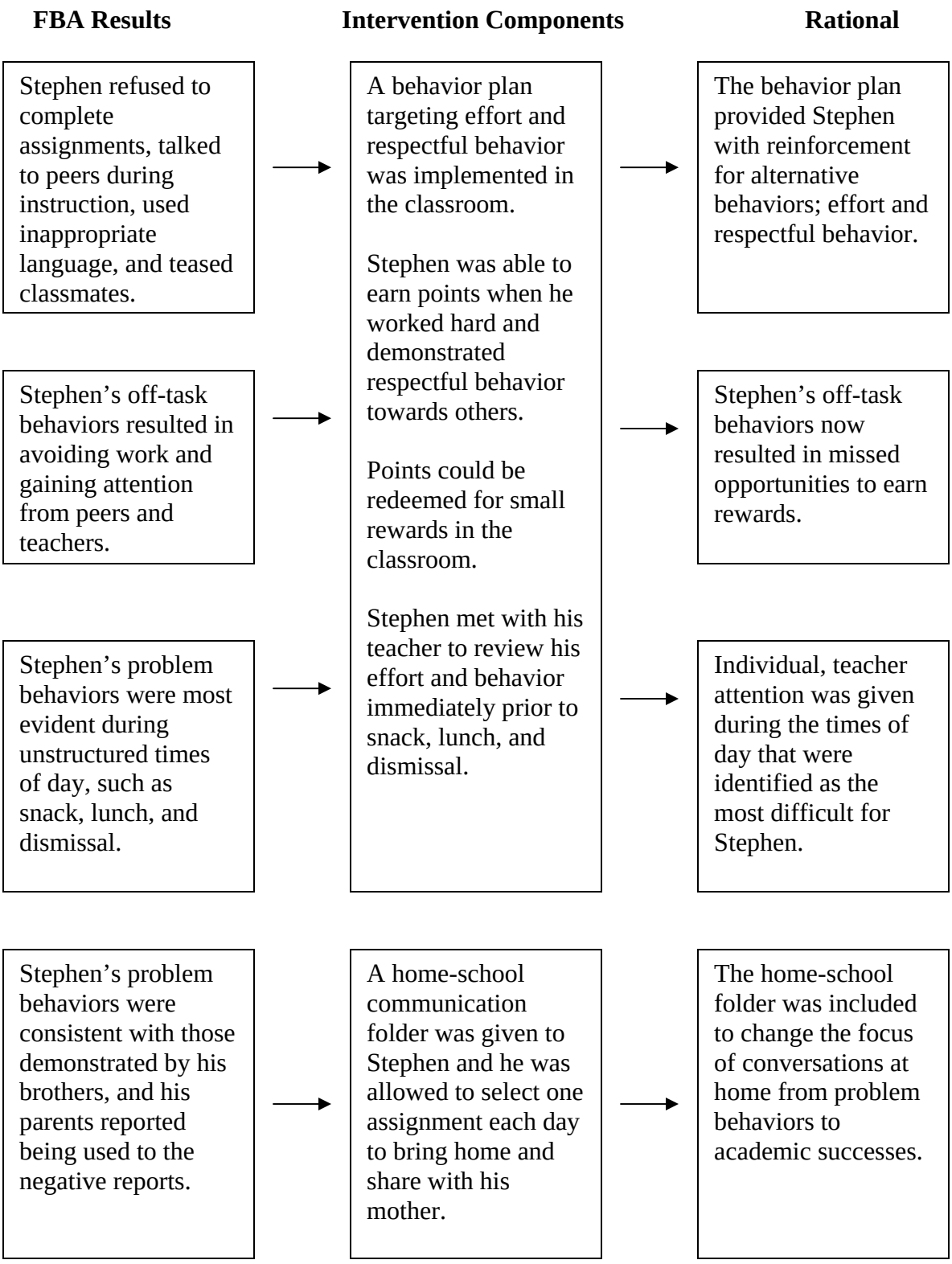


***Figure 4*. FBA Results, Intervention Components, and Intervention Rationales for Stephen.**

comparison of the components that constitute the function-based and non-function-based BIPs for Stephen is provided in Table 4.

Intervention Data

Once the BST completed the FBA process and designed function-based and non-function-based BIPs for each student, the teachers implemented the BIPs in their classrooms. Following is the data obtained from the treatment integrity checklists, classroom observations reliability data, and intervention outcome data.

Treatment Integrity Checklist

The classroom teachers completed the treatment integrity checklists for 100% of the days during the function-based and non-function-based conditions. Overall, the teacher ratings indicated high degrees of treatment integrity across the four students. Specifically, teacher ratings for session integrity across the four students were near perfect (M = 99%, range = 98% – 100%). In addition, the component integrity scores were also high (M = 94%, range = 88% - 100%). Lastly, mean levels of treatment integrity scores were consistently high during function-based (98%) and non-function-based (98%) conditions.

Behavior Observations

The average kappa coefficient of agreement for ratings of behaviors as either on-task or off-task across the four students indicated excellent clinical significance (*M* = .94, range = .93 - .95). In addition, kappa values for each of the 40 observations consisting of two observers were consistently high and also indicated excellent clinical significance (range = .85 – 1.0). Lastly, partial kappa coefficient values for each of the 40

Table 4

Intervention Components for FBA and Non-FBA BIPs for Stephen

FBA BIP	Non-FBA BIP
Behavior Chart	Daily Job
Home-School Communication Folder	Paired with Model Peer
	Frequent Breaks

Note. FBA BIP = function-based behavior intervention plan; Non-FBA BIP = non-function-based behavior intervention plan.

observations consisting of two observers were also consistently high and indicated good to excellent clinical significance (.69 - .95). Overall, kappa values indicate that the data collected should be considered reliable.

Kenny

Results for Kenny are presented in Figure 5. Following is a description of the data obtained during each condition throughout the treatment schedule for Kenny.

Initial baseline data. Kenny was observed during math class on five consecutive school days for the initial baseline condition. During that time, stable levels of on-task behavior were noted (*M* = 63%, range = 59% - 65%) with a near zero celeration trend line. A closer examination of the observation data at the molecular level revealed that the primary off-task behaviors observed during the baseline condition included talking-out (12% of the total off-task behaviors observed), out-of-chair (32%), inattentive (33%), and

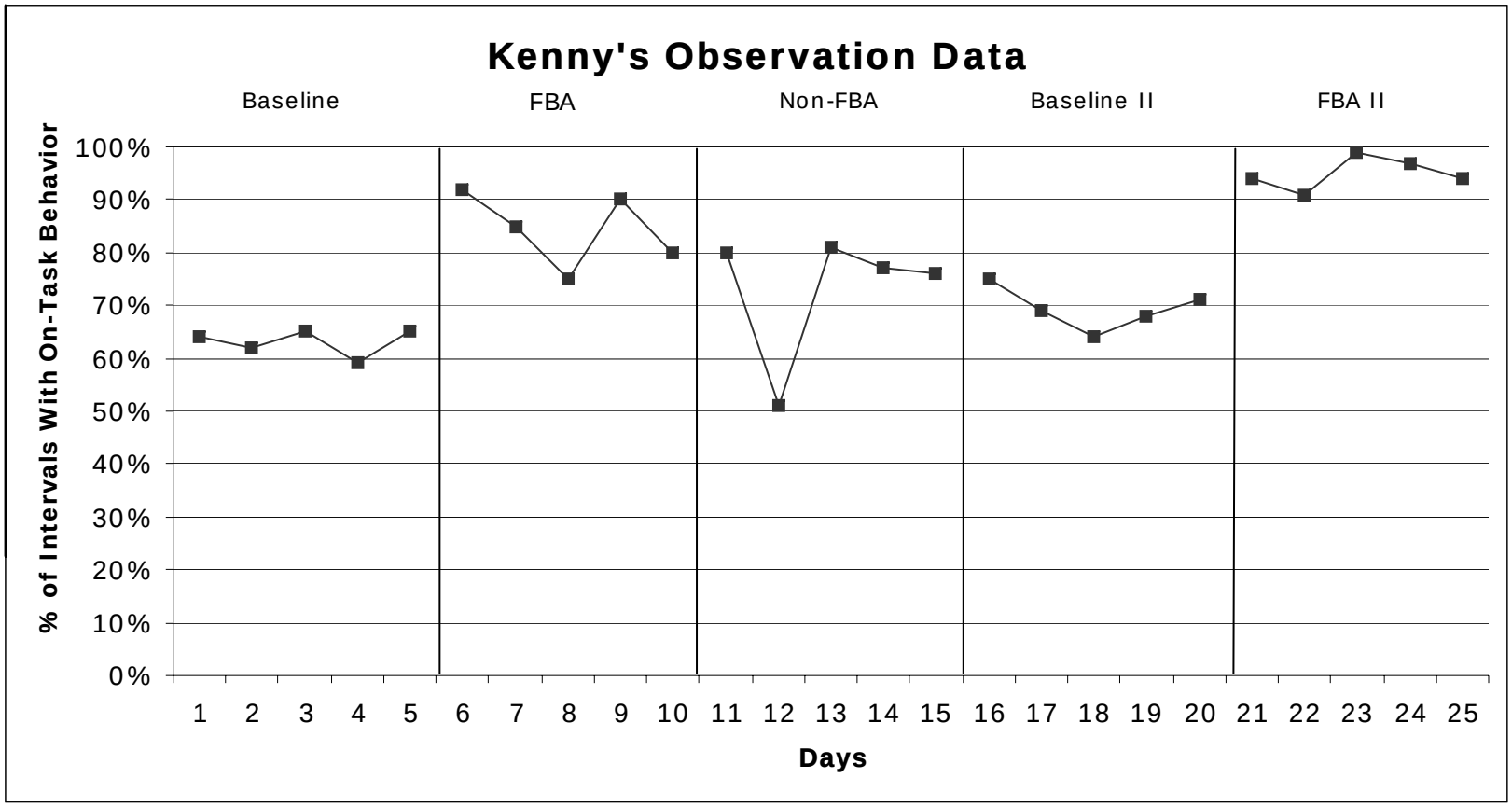


***Figure 5*. Percentage of on-task behavior across intervention phases: baseline, function-based BIP (FBA), and non-function-based BIP (non-FBA).**

non-compliance (15%). It should also be noted that Kenny was observed being physically aggressive towards a peer on one occasion during the baseline condition.

Function-based BIP. The introduction of the function-based BIP was accompanied by an immediate, therapeutic change in level of on-task behavior. During that time, high and stable levels of on-task behavior were noted (*M* = 84%, range = 75% - 92%) with a slightly decelerating trend line. Although the primary off-task behaviors remained the same; talking-out (20%), out-of-chair (31%), inattentive (43%), and noncompliance (5%); there was a noticeable decrease in noncompliant behavior.

Non-function-based BIP. After implementation of the non-function-based BIP, unstable levels of on-task behavior were noted (*M* = 73%, range = 51% - 81%). In addition, percentage of on-task behavior remained the same from the last day of the function-based BIP to the first day of the non-function-based BIP; this was followed by a decrease in on-task behavior in day two of the non-function-based condition. Overall, an accelerating trend line (improving) emerged during the non-function-based condition. The primary off-task behaviors remained the same during the non-function-based condition; talking-out (12%), out-of-chair (21%), inattentive (42%), and noncompliance (8%). Kenny also demonstrated off-task behaviors that were classified as making noises (5%), and he was observed being verbally aggressive towards a peer on one occasion.

Second baseline condition. During the second baseline condition all standard components from the function-based and non-function-based BIPs were withdrawn for five consecutive math periods. Stable levels of on-task behavior were observed (*M* = 69%, range = 64% – 75) with a slightly decreasing trend line. No clear change in level was evident. In addition, Kenny's primary problem behaviors continued at a consistent

rate; talking-out (13%), out-of-chair (32%), inattentive (33%), and noncompliance (8%). It should also be noted that Kenny's off-task behaviors that were classified as making noises continued (7%) from the previous condition, and he was once again observed being verbally aggressive toward a peer on one occasion.

Preferred intervention. The function-based BIP was identified as the preferred intervention due to higher levels of on-task behaviors throughout the function-based condition as compared to the non-function-based condition (84% and 73%, respectively). In addition, data during the function-based condition was more stable than during the non-function-based condition. Therefore, the function-based BIP was reintroduced after the return to baseline condition. Following the reintroduction of the function-based BIP there was an immediate increase in the level of on-task behavior (*M* = 95%, range = 91% – 99%). The data was stable and an accelerating trend line emerged. There was only one incident of noncompliance observed, and zero incidents involving physical or verbal aggression. The primary off-task behaviors were talking-out (36%), out-of-chair (24%), and inattentive (36%).

BIP comparison. During the initial baseline phase, stable levels of on-task behaviors were observed (*M* = 63%, range = 59% – 65%). Following the implementation of the function-based BIP, an immediate increase in on-task behavior was noted. Rates of on-task behavior were high and stable (*M* = 85%, range = 75% - 93%) with a slightly decreasing trend line. No overlapping data points were indicated between the initial baseline and function-based conditions. This suggests that the function-based BIP was very effective for increasing on-task behavior when compared to the baseline condition.

The non-function-based BIP was introduced next and an overall decrease in on-task behaviors was noted. In addition, the lower levels of on-task behavior lacked stability (*M* = 73%, range = 51% - 81%). Despite the decrease in on-task behaviors, there was no immediate level change observed and an accelerating (improving) trend line emerged. In addition, there were four overlapping data points (80%) indicated between the function-based BIP and non-function-based BIP conditions.

A second baseline condition followed the non-function-based BIP condition. Stable levels of on-task behavior were observed (*M* = 69%, range = 64% – 75%) with a slightly decelerating trend line. No immediate level change was present and there were five overlapping data points (100%) indicated between the two conditions. The overlapping data points indicated that the non-function-based BIP was no more effective for increasing on-task behavior than the baseline condition.

Finally, the function-based BIP condition, which was identified as the preferred condition, was re-introduced. An immediate and significant level increase was observed, and levels of on-task behavior were high and stable (*M* = 95%, range = 91% - 99%). A slightly increasing trend line emerged and there were no overlapping data points indicated between the second baseline and function-based BIP conditions. The lack of overlapping data points confirmed that the function-based BIP was very effective compared to the baseline condition.

In summary, the levels of on-task behavior were consistently higher during the two function-based conditions than the baseline and non-function-based conditions. Despite the numerous overlapping data points present in the initial function-based and non-function-based conditions, the mean level of on-task behavior during the two

function-based conditions (*M* = 90%) was clearly superior to the mean level of on-task behavior during the non-function-based condition (*M* = 73%). Lastly, the mean level of on-task behavior during the non-function-based condition (*M* = 73%) was only slightly higher than the mean level of on-task behavior during the second baseline condition (*M* = 69%).

Sharon

Results for Sharon are presented in Figure 6. Following is a description of the data obtained during each condition throughout the treatment schedule for Sharon.

Initial baseline data. Sharon was observed during literacy block on five consecutive school days for the initial baseline condition. During that time, stable levels of on-task behavior were noted (*M* = 73%, range = 66% - 79%) with a near zero celeration trend line. A closer examination of the observation data at the molecular level revealed that the primary off-task behavior observed during the baseline condition was inattentive, which accounted for 83% of the total off-task behaviors observed for Sharon. Other off-task behaviors included out-of-chair (10%) and talking-out (5%).

Non-function-based BIP. The introduction of the non-function-based BIP was accompanied by an immediate, increase in level of on-task behavior. During that time, stable levels of on-task behavior were noted (*M* = 81%, range = 74% - 88%) with a slightly decelerating trend line. The primary off-task behaviors remained the same; inattentive (77%), out-of-chair (13%), and talking-out (10%).

Function-Based BIP. Throughout the function-based BIP condition levels of on-task behavior remained high and stable (*M* = 95%, range = 90% - 100%) with a slightly

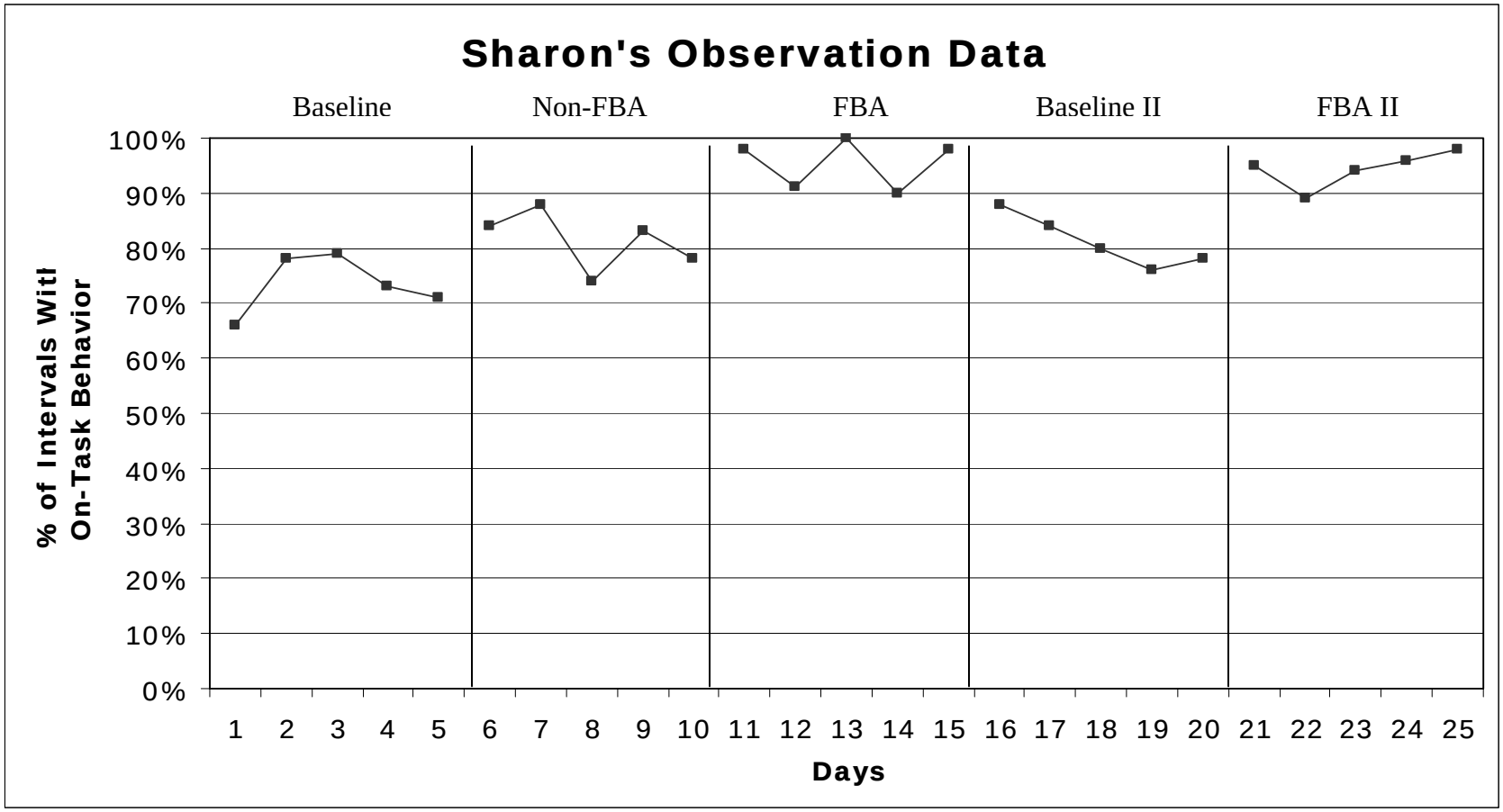


***Figure 6*. Percentage of on-task behavior across intervention phases: baseline, function-based BIP (FBA), and non-function-based BIP (Non-FBA)**

increasing trend line. The primary off-task behaviors remained consistent during the function-based condition; inattentive (87%), out-of-chair (9%), and talking-out (4%).

Second baseline condition. During the second baseline condition all standard components from the function-based and non-function-based BIPs were withdrawn for five consecutive literacy block periods. Stable levels of on-task behavior were observed (*M* = 81%, range = 76% - 88%) with a decreasing trend line. A clear, decreasing change in level was also evident. In addition, Sharon's primary problem behaviors continued at a consistent rate; inattentive (72%), out-of-chair (12%), and talking-out (11%). It should also be noted that Sharon demonstrated off-task behaviors that were classified as making noises (7%) for the first time during the second baseline condition.

Preferred intervention. The function-based BIP was identified as the preferred intervention due to higher levels of on-task behaviors throughout the function-based condition as compared to the non-function-based condition (95% and 81%, respectively). Therefore, the function-based BIP was reintroduced after the return to baseline condition. Following the reintroduction of the function-based BIP there was an immediate increase in the level of on-task behavior. The data was stable and a slightly accelerating trend emerged (*M* = 95, range = 91 – 99). The primary off-task behaviors remained consistent: inattentive (70%), out-of-chair (22%), and talking-out (7%).

BIP comparison. During the initial baseline phase, stable levels of on-task behaviors were observed (*M* = 73%, range = 66% – 79%). Following the implementation of the non-function-based BIP, an immediate increase in on-task behavior was noted. Rates of on-task behavior were stable (*M* = 81%, range = 74% - 88%) with a slightly decreasing trend line. There were two overlapping data points (40%) between the initial

baseline and non-function-based conditions. This indicates that the effectiveness of the non-function-based BIP for increasing on-task behavior was questionable when compared to the baseline condition.

The function-based BIP was introduced next and an immediate increase of on-task behaviors was noted. In addition, the levels of on-task behavior were high and stable (*M* = 95%, range = 90% - 100%) and a slightly accelerating (improving) trend line emerged. In addition, there were no overlapping data points indicated between the function-based BIP and non-function-based BIP conditions. This indicates that the function-based BIP was very effective for increasing on-task behavior when compared to the non-function-BIP.

A second baseline condition followed the function-based BIP condition. Stable levels of on-task behavior were observed (*M* = 81%, range = 76% – 88%) with a decelerating trend line. An immediate, decreasing level change was present and there were no overlapping data points indicated between the two conditions. This suggests that the function-based BIP was very effective for increasing on-task behavior when compared to the baseline condition.

Finally, the function-based BIP condition, which was identified as the preferred condition, was re-introduced. An immediate and significant level increase (therapeutic) was observed, and levels of on-task behavior were high and stable (*M* = 94, range = 89% - 98%). A slightly increasing trend line emerged and there were no overlapping data points indicated between the second baseline and function-based BIP conditions. This confirmed that the function-based BIP was very effective for increasing on-task behavior when compared to the baseline condition.

In summary, the mean levels of on-task behavior during the function-based conditions (*M* = 95%) were consistently higher than both the non-function-based condition (*M* = 81%) and baseline conditions (*M* = 73%). Therefore, the function-based BIP was clearly more effective for increasing on-task behavior for Sharon than the non-function-based BIP.

Dennis

Results for Dennis are presented in Figure 7. Following is a description of the data obtained during each condition throughout the treatment schedule for Dennis.

Initial baseline data. Dennis was observed during phonics on five consecutive school days for the initial baseline condition. During that time, stable levels of on-task behavior were noted (*M* = 38%, range = 34% - 46%) with a slightly decreasing trend line. A closer examination of the observation data at the molecular level revealed that the primary off-task behaviors observed during the baseline condition included inattentive(49% of the total off-task behaviors observed), out-of-chair (29%), and talking-out (10%).

Function-based BIP. The function based plan was implemented first and was accompanied by an immediate, therapeutic change in level of on-task behavior. During that time, high and stable levels of on-task behavior were noted (*M* = 74%, range = 69% - 78%) with a near zero celeration trend line. The primary off-task behaviors remained the same; inattentive (60%), out-of-chair (21%), and talking-out (8%).

Non-function-based BIP. The non-function-based BIP was introduced second and a contratherapeutic change in level of on-task behavior was observed. Unstable levels of on-task behavior were noted (*M* = 51%, range = 33% - 64%). Overall, an accelerating

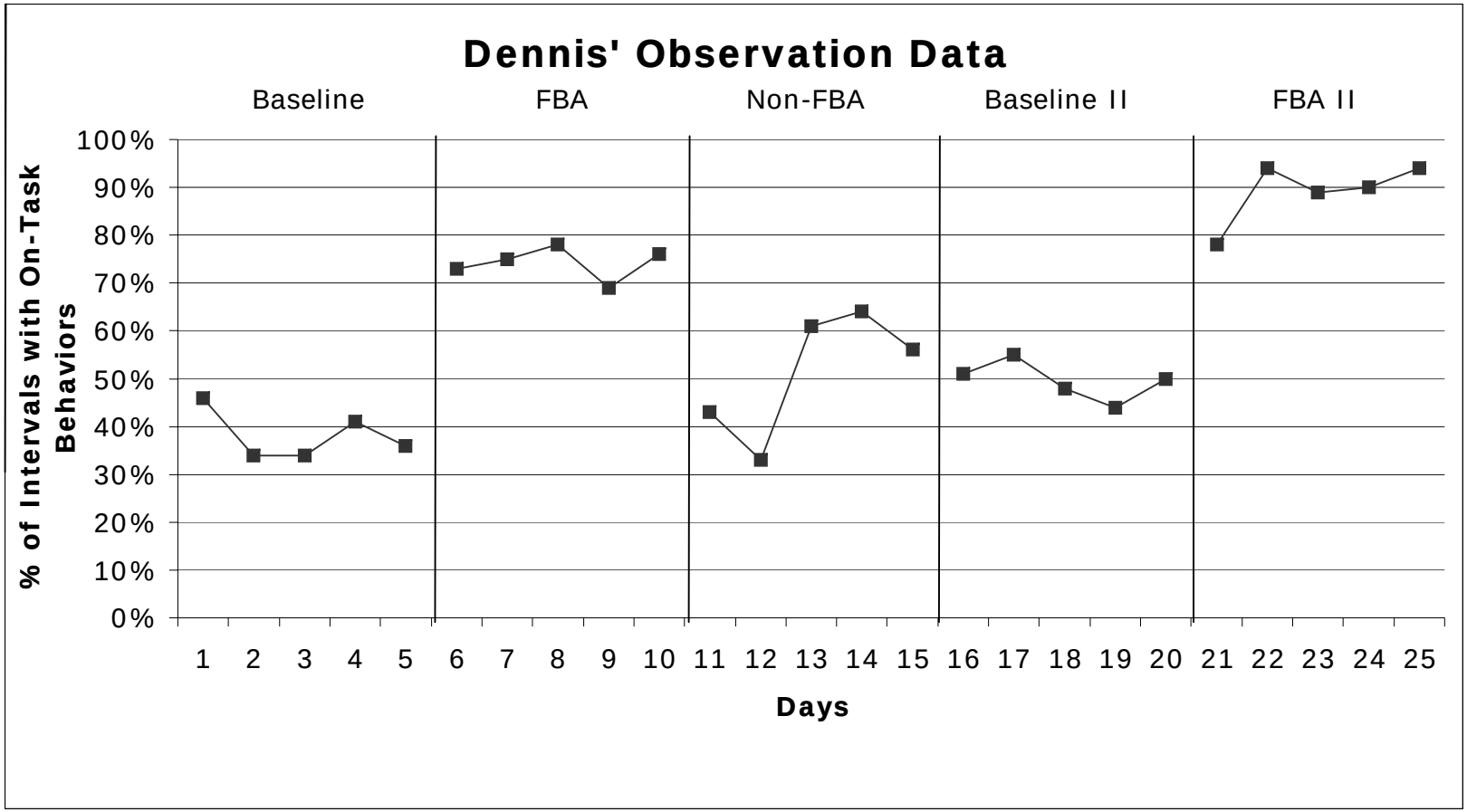


***Figure 7*. Percentage of on-task behavior across intervention phases: baseline, function-based BIP (FBA), and non-function-based BIP (Non-FBA).**

trend line (improving) emerged during the non-function-based condition. The primary off-task behaviors remained the same during the non-function-based condition; inattentive (51%), out-of-chair (26%), and talking-out (8%).

Second baseline condition. During the second baseline condition all standard components from the function-based and non-function-based BIPs were withdrawn for five consecutive phonics periods. Stable levels of on-task behavior were observed (*M* = 50%, range = 44% – 55%) with a slightly decreasing trend line. No clear change in level was evident. In addition, Dennis' primary problem behaviors continued at a consistent rate: inattentive (52%), out-of-chair (25%), and talking-out (10%).

Preferred intervention. The function-based BIP was identified as the preferred intervention due to higher levels of on-task behaviors throughout the function-based condition as compared to the non-function-based condition (74% and 51%, respectively).

In addition, data during the function-based condition was more stable than during the non-function-based condition. Therefore, the function-based BIP was reintroduced after the return to baseline condition. Following the reintroduction of the function-based BIP there was an immediate, therapeutic change in the level of on-task behavior (*M* = 89%, range = 78% – 94%). The data was stable and an accelerating trend line emerged. The primary off-task behaviors remained consistent: inattentive (65%), out-of-chair (13%), and talking-out (17%).

BIP comparison. During the initial baseline phase, stable levels of on-task behaviors were observed (*M* = 38%, range = 34% – 46%). Following the implementation of the function-based BIP, an immediate increase in on-task behavior was noted. Rates of on-task behavior were high and stable (*M* = 74%, range = 69% - 78%) with a slightly increasing (therapeutic) trend line. No overlapping data points were indicated between the initial baseline and function-based conditions. This suggests that the function-based BIP was very effective for increasing on-task behavior when compared to the baseline condition.

The non-function-based BIP was introduced next and an immediate, contratherapeutic change in level was observed. In addition, the lower levels of on-task behavior lacked stability (*M* = 51%, range = 33% - 64%). Despite the dramatic decrease, an accelerating trend line emerged in the data. There were no overlapping data points indicated between the function-based and non-function-based conditions. This provided sufficient evidence to support the hypothesis that the function-based BIP was more effective for increasing on-task behavior for Dennis than the non-function-based BIP.

A second baseline condition followed the non-function-based BIP condition. Stable levels of on-task behavior were observed (*M* = 50%, range = 44% – 55%) with a slightly decelerating trend line. No immediate level change was present and there were five overlapping data points (100%) indicated between the two conditions. The overlapping data points indicated that the non-function-based BIP was no more effective for increasing on-task behavior than the baseline condition.

Finally, the function-based BIP condition, which was identified as the preferred condition, was re-introduced. An immediate, therapeutic level increase was observed, and levels of on-task behavior were high and stable (*M* = 89%, range = 78% - 94%). A slightly increasing trend line emerged and there were no overlapping data points indicated between the second baseline and function-based BIP conditions. The lack of overlapping data points confirmed that the function-based BIP was very effective compared to the baseline condition.

In summary, the levels of on-task behavior were consistently higher during the function-based BIP conditions (*M* = 82%) than both the non-function-based (*M* = 51%) and baseline conditions (*M* = 44%). The lack of overlapping data points between the function-based and non-function-based conditions supported the hypothesis that the function-based BIP would be more effective than the non-function-based BIP for increasing Dennis' on-task behaviors during phonics. In addition, due to the numerous overlapping data points indicated between the non-function-based BIP and baseline conditions, there was no evidence that the non-function-based BIP was more effective than standard classroom management strategies for increasing Dennis' on-task behaviors during phonics.

Stephen

Results for Stephen are presented in Figure 8. Following is a description of the data obtained during each condition throughout the treatment schedule for Stephen.

Initial baseline data. Stephen was observed during math period for five consecutive school days for the initial baseline condition. During that time, stable levels of on-task behavior were noted (*M* = 59%, range = 54% - 66%) with a slightly increasing trend line. A closer examination of the observation data at the molecular level revealed that the primary off-task behaviors observed during the baseline condition were noncompliance (46% of the total off-task behaviors observed), talking-out (31%), and inattentive (21%). It should also be noted that two incidents of verbal aggression were observed during the initial baseline condition.

Non-function-based BIP. The non-function-based BIP was introduced first and was accompanied by a slight change in level of on-task behavior. During that time, unstable levels of on-task behavior were noted (*M* = 60%, *Mdn* = 63%, range = 45% - 68%) with a slightly decelerating trend line. The primary off-task behaviors remained the same: noncompliance (48%), talking-out (27%), and inattentive (12%).

Function-based BIP. Throughout the function-based BIP condition levels of on-task behavior remained high and stable (*M* = 81%, range = 73% - 94%) with a slightly increasing (therapeutic) trend line. The primary off-task behaviors remained consistent during the function-based condition: noncompliance (45%), talking-out (28%), and inattentive (25%). One incident of verbal aggression was observed during the function-based BIP condition.

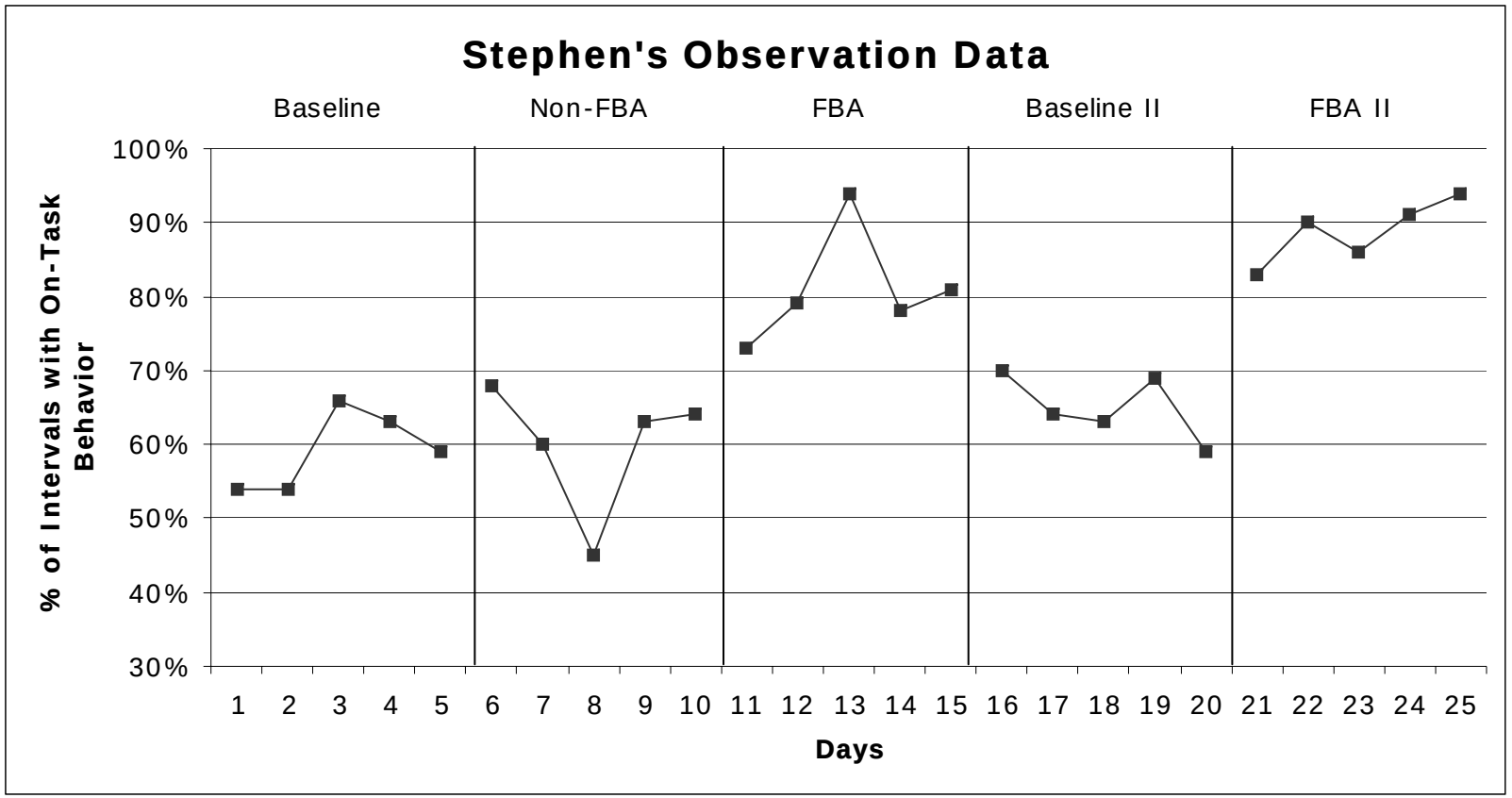


***Figure 8*. Percentage of on-task behavior across conditions: baseline, function-based BIP (FBA), and non-function-based BIP (Non-FBA).**

Second baseline condition. During the second baseline condition all standard components from the function-based and non-function-based BIPs were withdrawn for five consecutive math periods. Stable levels of on-task behavior were observed (*M* = 65%, range = 59% - 70%) with a slightly decreasing trend line. A decrease in level was also evident. Stephen's primary problem behaviors continued at a consistent rate: noncompliance (48%), talking-out (26%), and inattentive (26%). There were no incidents of verbal aggression observed during the second baseline condition.

Preferred intervention. The function-based BIP was identified as the preferred intervention due to higher levels of on-task behaviors throughout the function-based condition as compared to the non-function-based condition (81% and 60%, respectively). Therefore, the function-based BIP was reintroduced after the return to baseline condition. Following the reintroduction of the function-based BIP there was an immediate increase in the level of on-task behavior. The data was stable and an accelerating trend line emerged (*M* = 89%, range = 83% – 94%). Lastly, a relative decrease in noncompliant behavior was observed. The overall off-task behaviors included noncompliance (23%), talking-out (23%), and inattentive (53%), and no incidents of verbal aggression were observed.

BIP comparison. During the initial baseline phase, stable levels of on-task behaviors were observed (*M* = 59%, range = 54% – 66%). Following the implementation of the non-function-based BIP, a slight increase in on-task behavior was noted. However, rates of on-task behavior were unstable during the non-function-based BIP condition with a near zero celeration trend line. There were five overlapping data points (100%) between the initial baseline and non-function-based conditions. This indicated that there was no

evidence that the non-function-based BIP was more effective for increasing Stephen's on-task behavior than the standard classroom management strategies utilized during the initial baseline condition.

The function-based BIP was introduced next and an immediate increase of on-task behaviors was noted. In addition, the levels of on-task behavior were high and stable (*M* = 81%, range = 73% - 94%) and an accelerating (improving) trend line emerged. In addition, there were no overlapping data points indicated between the function-based BIP and non-function-based BIP conditions. This indicated that the function-based BIP was very effective for increasing Stephen's on-task behavior when compared to the non-function-BIP.

A second baseline condition followed the function-based BIP condition. Stable levels of on-task behavior were observed (*M* = 65%, range = 59% – 70%) with a decelerating trend line. An immediate, decreasing level change was present and there were no overlapping data points indicated between the two conditions. This suggests that the function-based BIP was very effective for increasing Stephen's on-task behavior when compared to the baseline condition.

Finally, the function-based BIP condition, which was identified as the preferred condition, was re-introduced. An immediate, therapeutic level increase was observed, and levels of on-task behavior were high and stable (*M* = 89%, range = 83% - 94%). An increasing trend line emerged and there were no overlapping data points indicated between the second baseline and function-based BIP conditions. This confirmed that the function-based BIP was very effective for increasing Stephen's on-task behavior when compared to the baseline condition.

In summary, the mean levels of on-task behavior were consistently higher during the function-based conditions (*M* = 85%) than both the non-function-based (*M* = 60%, *Mdn* = 63%) and baseline conditions (*M* = 62%). Therefore, the function-based BIP was clearly more effective for increasing Stephen's on-task behavior than the non-function-based BIP.

BIP Comparison Across Students

Function-based BIPs were more effective than non-function-based BIPs. Specifically, for the three students for which the function-based BIPs clearly outperformed the non-function-based BIPs, the observation data was highly supportive. There were no overlapping data points indicated between the two conditions across the three students. In addition, when the function-based BIPs were re-implemented following the second baseline condition, the observation data was equally supportive. Although Tawney and Gast (1989) reported that conditions should not be compared unless they are adjacent, the lack of overlapping data points across each of the three students between the second function-based condition and the non-function-based condition added additional evidence to support the superiority of function-based BIPs.

Despite the presence of overlapping data points between the first function-based condition and the non-function-based condition for the first student (Kenny), the level change clearly favored the function-based BIP. In addition, the second function-based condition resulted in additional evidence to support the superiority of the function-based BIP. The mean level of on-task behavior during the two function-based conditions (*M* = 90%) was visibly higher than the mean level of on-task behavior during the non-function-based condition (*M* = 73%).

Overall, mean levels of on-task behavior were consistently higher during function-based conditions than non-function-based and baseline conditions. Mean levels of on-task behavior for each student across intervention conditions are provided in Table 5.

Table 5

Mean Percentage of On-Task Behavior across Intervention Conditions

Student	Baseline	FBA	Non-FBA
Kenny	69	90	73
Sharon	73	95	81
Dennis	44	82	51
Stephen	62	85	60

Note. FBA = function-based intervention conditions; Non-FBA = non-function-based intervention condition.

CHAPTER IV

Discussion and Conclusions

The goal of the present study was to investigate the impact of conducting an FBA on the effectiveness of BIPs for four elementary students who were demonstrating off-task behaviors in the classroom setting. Specifically, I examined whether BIPs that were designed based on information obtained through the FBA process (function-based BIPs) were more effective for increasing on-task behaviors than BIPs that were designed based on the topography of the students off-task behaviors (non-function-based BIPs). Results supported the hypothesis that function-based BIPs were superior to non-function-based BIPs for increasing on-task behavior across the four students in the study.

Students who demonstrate off-task behaviors have drawn increased attention throughout the country from the media, policy makers, and researchers. The demand for prevention, identification, and remediation techniques continues to escalate. Educators are continually forced to accommodate and educate this challenging population of students, but are often insufficiently equipped with empirically supported interventions. Although FBA and PBS have been the preferred methods of intervention since they were included in the 1997 Amendments to IDEA, researchers have produced conflicting reports regarding their efficacy and plausibility for school based personnel. The results of the present study support the use of FBA and function-based BIPs.

Following is a comparison of function-based and non-function-based BIPs and an analysis of the characteristics that may have made the function-based BIPs more effective for increasing on-task behavior. In addition, a discussion of how the findings compare to those in the present literature follows. Finally, practical and theoretical implications of

the study, limitations of the study, and recommendations for future research are discussed.

Comparison of Student BIPs

An examination of the components that constituted the function-based and non-function-based BIPs for each student indicates that interventions related to the perceived function of each student's problem behavior likely contributed to the overall success of the function-based BIPs. Kenny's function-based BIP, for example, addressed a social skills deficit by providing an "Asking for Help script." In addition, the function-based BIP provided positive attention from his teacher through frequent check-ins when he was demonstrating on-task behavior. Lastly, the function-based BIP provided Kenny with positive reinforcement for effort and on-task behavior by implementing a behavior management chart, which was shared with teachers from his after-school program and enabled him to earn extra computer time (a self-selected reward).

In comparison, the BST failed to consider the underlying function of Kenny's problem behaviors when they designed his non-function-based BIP. For example, one component of the non-function-based BIP provided Kenny with a quiet, private place to work in the classroom. The BST included this because the target behavior assessment form indicated that Kenny had trouble concentrating and was easily distracted. Given Kenny's desire for attention, however, it should not be a surprise that this was unsuccessful. The other components of the non-function-based BIP, breaking assignments into smaller steps and using a visual signal when Kenny demonstrated problem behaviors, also failed to consider the function of Kenny's problem behaviors and, at times, exasperated his difficulties in the classroom.

Similar discrepancies between function-based and non-function-based BIPs for the three remaining students were also apparent. Sharon's function-based BIP included a daily job that she was allowed to complete with a friend. This was incorporated into the plan because it had been an effective strategy in the past and provided her with valuable time with preferred peers. The BST included the daily job, and the other components of the function-based BIP, because they took into consideration what was contributing to Sharon's problem behaviors in the classroom. The non-function-based BIP, however, addressed the topography of the problem behaviors with little regard to the perceived underlying function. For example, the organizational checklists, which the teacher taped to Sharon's desk, did not appear to have the same impact as the work completion chart, which involved regularly scheduled meetings with the classroom teacher to review her effort on classroom assignments.

Dennis' function-based BIP was also clearly connected to the FBA data that the BST obtained. The scheduled movement break allowed Dennis to move around the classroom as he distributed work materials to his classmates during the last five minutes of the phonics lesson. The behavior chart provided positive reinforcement for work production and on-task behavior, while the social skills chart helped remind Dennis of the basic behavioral expectations of first grade. Finally, the three strikes and you are out policy was included because it was the only effective consequence that his teacher was able to identify. In comparison, the work completion chart from the non-function-based BIP provided positive reinforcement, but only after Dennis successfully completed an assignment. In addition, the inclusion of frequent teacher check-ins to "catch him being

good" also appeared to be flawed because the opportunity to provide the individualized attention was minimal at times.

Finally, the connection between the components of Steven's function-based BIP and the perceived function of his problem behaviors also appeared to be critical. First, the behavior plan for Stephen (a) provided reinforcement for effort and respectful behavior, (b) resulted in natural, negative consequences (fewer opportunities to earn rewards) for off-task behaviors without increased attention from his teacher, and (c) teacher attention through regularly scheduled check-ins during the times of day that were identified as difficult for Stephen. Secondly, the home-school communication folder changed the focus of conversations at home from problem behaviors to academic successes. In comparison, the non-function-based BIP consisted of a daily job, pairing Stephen with model peers, and providing him with frequent breaks. Although a daily job can be an effective intervention for some children, Stephen clearly did not respond to the increased responsibility. In addition, he struggled to get along with the model peers who were selected and the frequent breaks did not appear to be beneficial.

Overall, the FBA data appeared to enable the BST to identify promising and logical interventions for the function-based BIPs. Connecting the intervention components to previous student experiences, incorporating student selected reinforcers, and manipulating environmental and academic variables appears to be critical when designing function-based BIPs.

Review of Function-Based Research

Results are consistent with the findings of Ingram et al. (2005) and Newcomer and Lewis (2004). Specifically, Ingram et al. reported that function-based intervention

plans were associated with greater improvements in lowering the number of problem behaviors demonstrated by two middle school students. There are some notable similarities and differences between the present study and the Ingram et al. study. Specifically, both studies included an initial baseline condition; counterbalanced treatment conditions across students; consistent observation times conducted daily; and visual analyses of the data to determine change in level, trend, and percentage of non-overlapping data points.

The primary differences between the two studies were the age of the student participants and the method utilized to design the non-function-based BIP. Ingram et al. examined the relative efficacy of function-based and non-function based BIPs for reducing problem behaviors for two middle school students, whereas I examined their efficacy for four elementary students. Ingram et al.(2005) designed the non-function-based BIPs "based on maintaining consequences not indicated or supported by the hypothesis statement" (p. 227). The BST in the present study designed the non-function-based BIP based on the data obtained from the Target Behavior Assessment Form (Appendix B). The superiority of the function-based BIPs across the two studies, regardless of the method utilized to design the non-function-based BIP, extends the generalizability of the findings.

Newcomer and Lewis (2004) also reported that function-based behavior interventions were more effective than non-function-based behavior interventions for three elementary students. Although both studies utilized similar methods for designing the non-function-based BIP, the results of the Newcomer and Lewis study were limited due to a consistent order effect and a failure to measure procedural integrity. I

counterbalanced the treatment conditions to determine if function-based BIPs would consistently outperform non-function-based BIPs regardless of the sequence in which they were implemented. I also collected treatment integrity data during the function-based and non-function-based conditions in order to determine if the interventions were implemented consistently and accurately.

Overall, these results support the FBA and PBS provisions of IDEA 2004, and the best practice assertions that individualized interventions based on FBA data are superior to interventions based solely on the topography of the behavior. This finding should increase practitioners' confidence in choosing function-based BIPS to increase on-task behavior in the regular education setting.

It is important to note that the results from the present study are inconsistent with those reported by Schill et al. (1998) and Beavers et al. (2004). Although each of the three studies included comparisons of function-based and non-function-based interventions, it is important to identify the discrepancies between the studies and the implications of the inconsistent results. First, the present study included a comparison of BIPs that were implemented by classroom teachers working as part of a BST in an attempt to increase on-task behavior. This is markedly different from the Schill et al. study, during which the researchers examined functional assessment within a behavioral consultation framework with graduate students serving as the consultants. An equally important distinction should be made when comparing the results from the present study to Beavers et al., which focused on the treatment utility of functional assessment within consultation for reading problems. The inconsistent results reported in the three studies suggest that although function-based BIPs appear to be superior to non-function-based

BIPs for increasing the on-task behavior of elementary school students, the treatment utility of function-based interventions in other areas (such as reading) has not been established at this point.

Practical and Theoretical Implications

Numerous practical and theoretical implications are apparent for school-based teams and educators as a whole. One practical implication is that the results demonstrated that school-based personnel are capable of conducting comprehensive FBAs and utilizing the data obtained to design and implement effective BIPs. Researchers often discuss closing the gap between research and practice, but many studies utilize outside consultants or graduate students to conduct school-based research (Beavers, Kratochwill, & Braden, 2004; Ingram, Lewis-Palmer, & Sugai, 2005; Schill, Kratochwill, & Elliott, 1998). The present study was conducted in an elementary school setting using only school-based staff members for training and implementation. In order for schools to be compliant with the FBA and PBS mandates, teams must develop school-based procedures and assessments, and implement the supports.

A second practical implication is that involving teachers in the FBA process helps ensure high levels of treatment integrity. Teachers reported near perfect levels of treatment integrity for both of their students across conditions. In addition, teachers indicated that they valued being included in the FBA process and having their input considered by other BST members when designing the student BIPs. Finally, both teachers reported that the function-based BIPs remained in place beyond the time frame of the study because of the success in increasing on-task behavior.

A third practical implication is the utility of treatment integrity checklists. Although the checklists were used to monitor treatment integrity for student BIPs, they proved to be valuable tools to support the teachers during BIP implementation. Teachers indicated that the treatment integrity checklists facilitated BIP implementation and served as a valuable reference to ensure that the plan was consistent from day to day.

A fourth practical implication is that the time and resources required to complete the FBA process and design a function-based BIP may discourage the consistent use of FBA procedures by school-based teams. The non-function-based procedures required far less time and effort. Therefore, practitioners may opt for non-function-based BIPs strictly out of convenience despite the superiority of function-based BIPs.

In addition to the practical implications, a theoretical implication should also be noted. The FBA process provides a comprehensive picture of each target student. BST members gathered information from educational and medical records, parents, and teachers. As BST members learned more about the students, they appeared to develop a greater sense of empathy for them. Specifically, understanding the conditions that precipitate and/or maintain behavior led to more objective responses during BIP development. This was also evident in their comments about the students, their increasing levels of commitment toward the students, and their interactions with the students. For example, one teacher stated, “If I had known why he was acting like this in the beginning of the year maybe I would not have been so mad at him all the time.” The second teacher commented, “I really need to be more positive because all of my responses to his behavior seem to be punitive.” Children are often defined by the disruptive and difficult problem behaviors that they demonstrate in the classroom. The FBA process helps to

identify explanations for these behaviors and provides a more comprehensive picture of the child.

Limitations

The BST consisted of school-based personnel, which helped ensure the ecological validity of the study. Although maintaining ecological validity often increases generalizability, it also requires relinquishing some experimental control. In the present study, I chose to relinquish an element of experimental control at times during BIP development. For example, as the BST collaborated to design function-based BIPs, I did not attempt to impose my will onto the team to ensure a one-to-one correspondence between FBA data and the intervention components. Therefore, it is important to consider an alternative explanation for the conclusion of the study that function-based BIPs were more effective than non-function-based BIPs because they were individualized to address the function of the students' problem behaviors. Instead, function-based BIPs may have been more effective simply because they were more thoughtful, required more effort, and were more strongly supported by BST members due to their involvement in the design.

A second limitation is that the small number of students included in the study and the narrow focus on on-task behavior limits the generalizability of the results. It will be important for researchers to replicate the conditions used across numerous populations of students and numerous behaviors to either confirm or refute the findings that indicate the function-based BIPs are superior to non-function-based BIPs. Specifically, if researchers are able to replicate the results from the present study with students of different ages, grades, cultural backgrounds, communities, and socioeconomic statuses, they will be able to report more definitively that function-based BIPs are superior to non-

function-based BIPs for increasing rates of on-task behavior. In addition, if researchers are able to replicate the results from the present study with students who demonstrate different types of problem behaviors, they will be able to report more definitively that function-based BIPs are superior to non-function-based BIPs for decreasing multiple types of behavior problems.

A third limitation of the study is the number of alternations between the function-based and non-function-based conditions. Each pair of the four students received the two conditions in a counter-balanced sequence, followed by a return to baseline, and then a reintroduction of the preferred condition. Additional alternations between conditions would have provided increased evidence for the relative effectiveness of each condition. Also, additional conditions may have increased the confidence with which the BST could determine which intervention was more effective. Although more alternations between conditions would have been valuable, they were not necessary to determine the superiority of the function-based BIPs. More importantly, additional alternations would not have been ethical given the students' responses to the function-based BIPs.

A fourth limitation is the lack of technical data for the model of FBA used. Although McConnell et al. (2001) failed to report evidence of reliability or validity for their proposed FBA model, the lack of technical adequacy for FBA is a pervasive problem (Gresham, 2003; Shriver, Anderson, & Proctor, 2001). In fact, Gresham reported that there is very little research on the reliability of FBA. Furthermore, there is considerable debate regarding the role of validity within FBA. Overall, the lack of technical support for FBA appears to be a limitation of the process itself, and not simply the model utilized in the present study. As researchers continue to investigate the

technical adequacy of FBA, it will be important to incorporate empirically supported practices in the school setting.

A fifth limitation of the present study was the method used to monitor treatment integrity. The two teacher participants completed treatment integrity checklists to monitor the consistency with which the BIP components were implemented in the classroom. According to teacher ratings, the BIPs were implemented with a high degree of integrity across each of the four students. Self-report methods, however, often inflate estimated levels of treatment integrity (Lane, Bocian, MacMillan, & Gresham, 2004). Although direct observation of intervention implementation is the preferred method of estimating treatment integrity, practical restrictions pertaining to staff and time prompted the me to elect self-report as the means for assessing treatment integrity. It should be noted that the I conducted informal treatment integrity observations in the classroom, during which the teachers were consistently implementing the function-based and non-function-based BIPs. In addition, teachers submitted copies of permanent products, such as behavior plans and charts, which supported their ratings on the treatment integrity checklists.

A final limitation of the study was that the non-function-based interventions came from a single source. The comparison treatment condition, which consisted of interventions selected from Wunderlich (1998), lacked empirical support. Therefore, it is possible that the non-function-based BIPs may have been more effective had they been restricted to evidence-based interventions.

Future Research

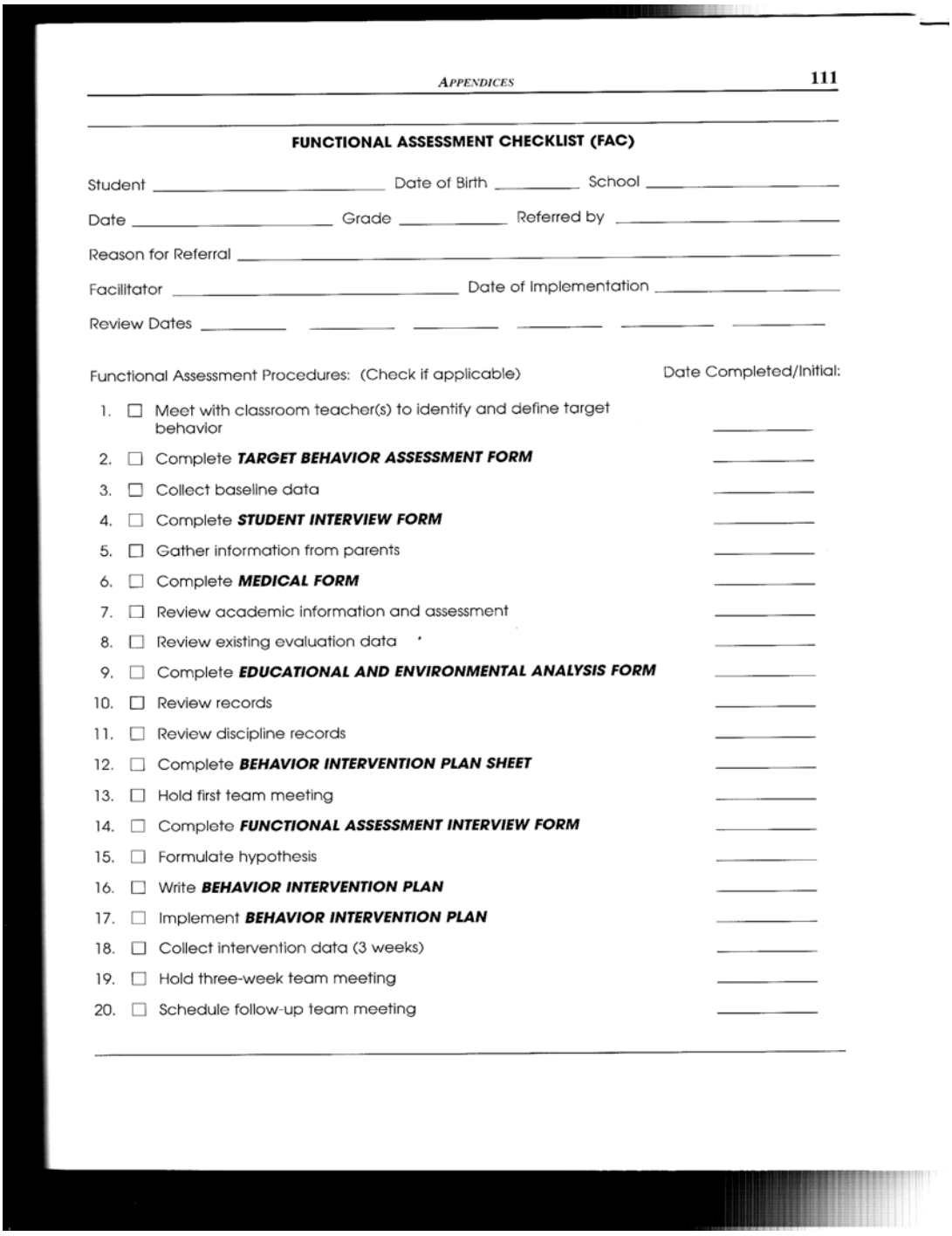
In the future, researchers might consider exploring alternative experimental designs to compare function-based and non-function-based BIPs more rapidly.

Specifically, researchers might contrast the two interventions using an alternating treatment design methodology. The advantages of an alternating treatment design, if successful, would be identifying the preferred intervention more quickly and removing the need for a return to baseline condition.

A second consideration for future researchers would be to replicate the present study with different populations of students. This could help determine if the effectiveness of an FBA is related to specific student characteristics or behaviors. Finally, future researchers might consider investigating the numerous components of FBA in an attempt to identify if there are specific components that are more important to the intervention planning process. In addition, if specific components were identified, truncated FBA models could make the process more efficient and user-friendly for school-based teams.

APPENDIX

Appendix A: Functional Assessment Checklist



APPENDICES 111

FUNCTIONAL ASSESSMENT CHECKLIST (FAC)

Student _____ Date of Birth _____ School _____

Date _____ Grade _____ Referred by _____

Reason for Referral _____

Facilitator _____ Date of Implementation _____

Review Dates _____ _____ _____ _____ _____ _____

Functional Assessment Procedures: (Check if applicable)	Date Completed/Initial:
1. ☐ Meet with classroom teacher(s) to identify and define target behavior	_____
2. ☐ Complete ***TARGET BEHAVIOR ASSESSMENT FORM***	_____
3. ☐ Collect baseline data	_____
4. ☐ Complete ***STUDENT INTERVIEW FORM***	_____
5. ☐ Gather information from parents	_____
6. ☐ Complete ***MEDICAL FORM***	_____
7. ☐ Review academic information and assessment	_____
8. ☐ Review existing evaluation data	_____
9. ☐ Complete ***EDUCATIONAL AND ENVIRONMENTAL ANALYSIS FORM***	_____
10. ☐ Review records	_____
11. ☐ Review discipline records	_____
12. ☐ Complete ***BEHAVIOR INTERVENTION PLAN SHEET***	_____
13. ☐ Hold first team meeting	_____
14. ☐ Complete ***FUNCTIONAL ASSESSMENT INTERVIEW FORM***	_____
15. ☐ Formulate hypothesis	_____
16. ☐ Write ***BEHAVIOR INTERVENTION PLAN***	_____
17. ☐ Implement ***BEHAVIOR INTERVENTION PLAN***	_____
18. ☐ Collect intervention data (3 weeks)	_____
19. ☐ Hold three-week team meeting	_____
20. ☐ Schedule follow-up team meeting	_____

McConnell, M. E., Cox, C. J., Thomas, D. D., & Hilvitz, P. B. (2001). ***Functional behavioral assessment: A systematic process for assessment and intervention in general and special education classrooms.*** **Denver, CO: Love Publishing Company.**

Appendix B: Target Behavior Assessment Form

TARGET BEHAVIOR ASSESSMENT FORM

Teacher Ms. Jane Smith **Student** John Smith **Date** 10/26/2006

List problem behaviors exhibited by student:
John has trouble remaining in his assigned spot in the meeting area during morning meeting. He consistently talks to his classmates during instruction and walks around the classroom without permission while morning meeting is being held.

Write a detailed description of one problem behavior:
During morning meeting, while all of the students are expected to remain seated in their assigned spot, John rolls around on the floor and bumps into his classmates.

Describe the physical environment where the behavior occurs:
The behavior occurs during most group activities that are held in the classroom meeting area; this includes morning meeting and the introductory parts of phonics and math.

List the instructional expectations of the class in which the behavior occurs:
Students are expected to actively participate in the meeting area by listening to the teacher, raising their hand for questions or comments, and listening carefully to the questions of their classmates.

List the behavioral expectations of the class in which the behavior occurs:
Students are expected to sit quietly in their assigned spot and demonstrate active listening while the teacher is talking. In addition, students are expected to respect the personal space of their classmates, raise their hand when they have a question or comment, and wait until they are called on before speaking.

Attach and bring to the team meeting:

1. Records of behavior occurrences (frequency/duration counts).
2. Academic work information and work samples showing the student's academic ability in reading (rate and comprehension), math computation, and written language.

McConnell, M. E., Cox, C. J., Thomas, D. D., & Hilvitz, P. B. (2001). ***Functional behavioral assessment: A systematic process for assessment and intervention in general and special education classrooms.*** **Denver, CO: Love Publishing Company.**

Appendix C: Student Interview Form

STUDENT INTERVIEW FORM

Name: John Smith **Date:** 10/26/2006

Interviewer: Jane Doe **Class:** Ms. Jane Smith

Complete with Student.

1. **What things do you generally do that get you in trouble at school?** The teacher always tells me to sit down and sometimes I get really bored and walk around the classroom instead. I also play with the blocks when I am not supposed to.

2. **What are you doing when the behavior occurs and what usually happens afterward?** I am usually looking at the different stations in the classroom while all of the other kids are sitting in the group area for morning meeting. The teacher tells me if I don't sit down I will lose five minutes of recess. That happens a lot.

3. **When and where do the behaviors generally occur?** Mostly in the beginning of the day, during morning meeting and phonics.

4. **How would you describe your behavior at school?** Most of the time I am really good. I listen to the teacher and I am friends with almost every kid in the class. I just don't like to sit in the group area for too long because I get really bored, so instead I usually look at the cool stuff at the stations.

5. **What do you do when you get angry?** Sometimes when I am really mad I leave the classroom and walk around the school without asking the teacher.

6. **What do you like most about school?** I love when we do stations, going to PE, and going outside for recess. I also love having snack and lunch.

7. **What things do you not like to do at school?** I hate doing work when no one will help me, especially during math. A lot of the time the work doesn't make sense, I don't know why we have to do it.

8. **What teacher behavior especially bothers you?** I don't like it when she takes away my recess or tells me that I am not trying hard enough.

9. **What are your favorite classes?** PE and math game. Not regular math, but the part when we play math games.

Appendix C: Student Interview Form (continued)

10. **What classes are hard for you?** Reading, phonics, and math.

11. **What can your teachers do to help you be more successful at school?** Let me walk around while I do my work, I hate sitting still all the time, and not take away my recess.

12. **List some things that you do best?** I am really good at building with the blocks and I run faster than any other kid in first grade.

Additional Comments: John was restless during the interview and actually walked around the office while answering questions. Despite his high activity level, his responses were consistently on topic and he rarely asked for questions to be repeated.

McConnell, M. E., Cox, C. J., Thomas, D. D., & Hilvitz, P. B. (2001). ***Functional behavioral assessment: A systematic process for assessment and intervention in general and special education classrooms.*** **Denver, CO: Love Publishing Company.**

Appendix D: Medical Assessment Form

MEDICAL ASSESSMENT FORM

Name John Smith Date 10/26/2006 Grade First

School Adams Elementary School D.O.B. 10/26/2000 Age 6-0

Person(s) completing form Tom Jones, Ph.D., School Psychologist

Date of Last Physical Examination: 10/3/2005

Vision Results: Passed: 20/20 right and left without glasses
Hearing Results: Passed

1. **Medical Diagnosis (if any):** Asthma

2. **Does the medical diagnosis have an effect on the student's behavior?** When John gets worked up or runs around too much he often gets short of breath.

3. **Is the student on medication?** John uses a rescue inhaler as needed. It is in the nurses office.

4. **What type?** Albuteral

5. **Are there side effects to the medication? Describe.** No

6. **Are there questions about the side effects?** N/A

7. **How and with whom is the medication administered?** John is only allowed to take his inhaler in the nurses office once every four to six hours.

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Appendix E: Educational and Environmental Analysis Form

EDUCATIONAL AND ENVIRONMENTAL ANALYSIS

Teacher: Ms. Jane Smith
Course Subject: Math
Grade: 1
Date: 10/26/06
School: Adams Elementary School
Classroom Location: Room 6
Length of Class: 30 min.
Number of Students in Class: 24
Interviewer: Tom Jones
Type of Classroom: Regular Education

1. **CLASSROOM ENVIRONMENT**
   Describe your classroom set-up and student seating arrangement: Each student in the classroom has their own desk, and the desks are chunked together in groups of four.

   Identify distracters: Possible distracters include noises from the adjacent classroom due to thin walls, adults coming in and out of the classroom to work with students throughout the day, and having our classroom close to the boys bathroom (this is often high traffic).

2. **CLASSROOM MANAGEMENT**
   What are the classroom rules? Students are required to sit quietly during instruction, treat others how you would like to be treated (Golden Rule), and raise their hand before calling out.

   What are the consequences for breaking classroom rules? Each student has a behavior card which starts off on green at the beginning of each day. If a classroom rule is broken, the student will be given one warning. Subsequent violations will lead to having the student's behavior card changed to red and the student will lose five minutes of recess.

   How do you handle student conflict and/or discipline issues? I provide the student involved with a direct warning and remind him or her of their behavior card. If the behavior continues, I change their card and have them sit on the bench for the first five minutes of recess.

3. **INSTRUCTIONAL DELIVERY**
   What instructional methods do you use? All kinds, including lectures (no longer than 15 minutes), workbooks, journals, visual aides, and choral responding.

Appendix E: Educational and Environmental Analysis Form (continued)

What does a class period generally consist of? All of the above.

Are students given free time during your class period? If so, how much and what activities do they engage in? No, if they finish their work there are always challenge problems to work on.

How do you work with students in your classroom? I teach a new skill to the entire classroom in the group meeting area and then have the students return to their desks to work independently. While they are working at their desks, I circulate the room and monitor the students' progress.

4. COURSE REQUIREMENTS

What are students required to do in your class? The students are required to demonstrate the school listening look during instructional time, work collaboratively with their classmates during small group times, and put their best effort into all of their assignments.

What materials and supplies are needed by students? Math workbooks and pencils, I provide everything else as needed.

How much class participation is required by students? I expect a lot of student participation throughout the school day.

What skills do students need to be successful in your classroom? None, I will differentiate my instruction to meet the needs of all the students in my classroom.

5. CLASS ASSIGNMENTS

What types of assignments are given? Math worksheets and challenge problems.

Describe frequency of assignments: Students are assigned workbook pages to complete daily.

How are directions presented? Directions are presented verbally and visually, and demonstrations are always provided to all students before independent work starts.

6. INSTRUCTIONAL MATERIALS

Title of textbook used: Everyday Math

What supplemental instructional materials are used? Numerous worksheets

What modifications are made for students with disabilities? I adjust my instruction for all kids with disabilities. In addition, teachers at our school are

Appendix E: Educational and Environmental Analysis Form (continued)

provided with consultation from the case managers of kids on IEPs to make sure we provide them with the appropriate modifications.

7. GRADING SYSTEMS

What kinds of tests are given? Unit tests

How often? Weekly

What is your make-up policy for assignments, homework, and tests? Students are always allowed to make-up work free of penalties.

Describe your grading criteria: I give students a check-minus, check, or check-plus.

8. TEACHER BEHAVIORS

What do you like best about your class? I love being with the kids and watching them grow throughout the year.

What do you like about the curriculum you teach? Although I teach everything, I really like watching kids use math outside of the classroom in everyday life.

Is there anything you would change about the way you conduct your class? I would like to develop some more effective behavior management strategies.

McConnell, M. E., Cox, C. J., Thomas, D. D., & Hilvitz, P. B. (2001). ***Functional behavioral assessment: A systematic process for assessment and intervention in general and special education classrooms.*** **Denver, CO: Love Publishing Company.**

Appendix F: Functional Assessment Interview Form

FUNCTIONAL ASSESSMENT INTERVIEW FORM

Student John Smith **Teacher**

Team Member's Name	**Team Member's Position**
Tom Jones	School Psychologist
Anne Thomas	Inclusion Facilitator
Sally Henry	Behavioral Support Teacher
Matthew Russo	School Principal
Jane Smith	Classroom Teacher
Alison Smith	Mother

A. Describe the Behavior

1. **What is the behavior?** John demonstrates restless and impulsive behaviors in the classroom.
2. **How is the behavior performed?** John rolls around on the ground, walks around the classroom without permission, and hangs off his chair during instruction.
3. **How often does the behavior occur?** The behavior occurs daily.
4. **How long does the behavior last when it occurs?** Typically around 5 – 10 minutes, but it would likely be longer if someone did not intervene.
5. **What is the intensity of the behavior when it occurs?** The behavior is low intensity.

B. Define Setting Events and Environmental Factors That Predict the Behavior (describe the following variables).

1. **Classroom Structure (physical).** Each student in the classroom has their own desk, and the desks are chunked together in groups of four.

Appendix F: Functional Assessment Interview Form (continued)

2. **Class rules and procedural expectations.** Students are required to sit quietly during instruction, treat others how you would like to be treated (Golden Rule), and raise their hand before calling out.

3. **Instructional delivery (lecture, cooperative learning, labs, etc).** Various methods, including short lectures, workbooks, journals, visual aides, and choral responding.

4. **Instructional materials (textbooks, worksheets, hands-on activities).** Everyday math text book and numerous worksheets.

5. **How are directions delivered?** Directions are presented verbally and visually, and demonstrations are always provided to all students before independent work starts.

6. **Assessment techniques (multiple-choice tests, essay tests, rubrics, authentic assessment).** Weekly unit tests in math .

C. Define Specific Immediate Antecedent Events That Predict When the Behaviors Are Most Likely to Occur.

1. **When are the behaviors most likely to occur?** The beginning of math during the whole class instruction.

2. **When are the behaviors least likely to occur?** During hands-on activities, such as stations and PE.

3. **Where are the behaviors most likely to occur?** During whole-class instruction or independent seatwork.

4. **Where are the behaviors least likely to occur?** In the gym.

5. **During what activities are the behaviors most likely to occur?** Math and morning meeting.

6. **During what activities are the behaviors least likely to occur?** Stations, PE, snack, lunch, and indoor recess.

D. Identify Specific Consequences That Follow the Behavior.

1. **What specific consequence is most likely to immediately follow the behavior?** His classmates will laugh or one of the teachers will talk to him one-on-one in the hallway.

Appendix F: Functional Assessment Interview Form (continued)

2. **What seems to be the effect of the consequence on the student's behavior?** No consistent impact.

3. **Does the consequence remove the student from an uncomfortable situation?** Often it does.

4. **Is there consistency between the consequences given by the classroom teacher and the consequences given by administrators?** Most consequences are given by the classroom teacher or teaching assistant, the administrators have not been that involved.

5. **Is the consistent follow-through with all consequences both in the classroom and in the school office?** No.

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Appendix G: Behavioral Intervention Plan Sheet

BEHAVIORAL INTERVENTION PLAN SHEET

Student John Smith **Teacher** Ms. Jane Smith **Date** 10/26/06

Disability None **School** Adams Elementary **Grade** 1

1. **Describe behavioral issues.** John has trouble remaining in his assigned spot in the meeting area during morning meeting. He consistently talks to his classmates during instruction and walks around the classroom without permission while morning meeting is being held.

2. **What disciplinary actions has the student received for inappropriate behavior?** John's behavior card has been changed almost daily, he misses the first five minutes of recess each time it is changed, and he has been sent to the principal's office on numerous occasions for walking out of the classroom without permission.

3. **How does the student respond to adults?** John loves one-to-one attention and usually responds well to adults.

4. **What interventions/strategies have you tried?** Preferential seating, isolated seating, classroom behavior plan, frequent check-ins, and home-school communication with his mother.

5. **How were they implemented?** If John's seat was changed, I would talk to him about it in the morning. Other strategies have been implemented inconsistently.

6. **How long were they implemented?** Usually about a week.

7. **Which interventions were effective?** Having John's desk by itself close to mine seemed to work for a couple of days. He does not like missing recess, but it doesn't always change his behavior.

8. **Which interventions were not effective?** Preferential seating with preferred peers has not worked, either has home-school communication because it has not always been reciprocal.

9. **What are you currently doing?** A little bit of everything.

10. **What would you like to try?** I will try anything that can help John.

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Appendix H: Behavior Intervention Plan

BEHAVIOR INTERVENTION PLAN (BIP)

Student: John Smith **School:** Adams Elementary School

Date Developed: 10/26/06 **Date Implemented:** 10/27/06

Grade: First

Baseline Data Results

John was classified as being on-task 46% of time during the five-day baseline period.

Hypothesis Statement

John is an active first grade student who has trouble remaining seated for long periods of time. He struggles in math, and his motivation to play with toys in the classroom or talk to friends is presently outweighing his motivation to work on assignments. The present consequences for John's problem behaviors, which include changing his behavior card and taking away his recess, have not been effective. John does respond well to individual attention from adults.

Type of Intervention Plan: Educational X Behavioral X

Person(s) Responsible for Implementing Plan:
Ms. Jane Smith – Classroom Teacher (with support)

DESCRIPTION OF THE BEHAVIOR

BEHAVIOR	BEHAVIOR DEFINED
John disrupts classroom instruction	John walks around the classroom during math instruction in the meeting area, and he talks with classmates while his teacher is trying to teach the lesson.

INTERVENTION GOAL:

To increase the percentage of time John is actively on-task during math to 80%.

Appendix H: Behavior Intervention Plan (BIP - continued)

INTERVENTION PLAN:

1. Have John sit next to a peer who has good on-task behavior in the group area during the whole-class instruction component of math.

2. Provide John with a structured movement break during the whole-class instruction component of math at five-minute intervals. The first break will be to get a drink of water. The second break will be to say hi to his kindergarten teacher. His third break will be to pass out the math journals during the final minute of whole-class instruction.

3. Provide John with one-to-one assistance at the beginning of the independent work component of math (this will be provided by the teaching assistant).

4. Catch John being good – he should be praised as often as possible when he is working appropriately and demonstrating active listening skills.

WHEN AND WHERE THE PLAN WILL BE IMPLEMENTED:

The plan will be implemented in John's math class for four consecutive weeks.

INTERVENTION DATA COLLECTION SUMMARY:

Week 1 On-task behavior increased to 65%

Week 2 On-task behavior increased to 76%

Week 3 On-task behavior increased to 84%

Appendix H: Behavior Intervention Plan (BIP - continued)

FOLLOW-UP AND REVIEW DATE(S):

Follow-up and review meeting is scheduled for 11/30/06.

COMMENTS:
The intervention plan has been extremely successful for John.
The team agreed to continue with the BIP.

TEAM MEETING PARTICIPANTS:

Name	Position
Tom Jones	School Psychologist
Anne Thomas	Inclusion Facilitator
Sally Henry	Behavioral Support Teacher
Matthew Russo	School Principal
Jane Smith	Classroom Teacher
Alison Smith	Mother

McConnell, M. E., Cox, C. J., Thomas, D. D., & Hilvitz, P. B. (2001). ***Functional behavioral assessment: A systematic process for assessment and intervention in general and special education classrooms.*** **Denver, CO: Love Publishing Company.**

Appendix I: Classroom Observation Form

(Adapted from the Classroom Observation and Rating Schedule-Ten)

Student:_____ Teacher:_____ Date:_____

Observer:_____ School:_____ Time:_____

Time (15 seconds)	No Disruptive Behaviors	Talking-Out	Out-of-Chair	Inattentive	Making Noises	Noncompliance	Physical Aggression	Verbal Aggression	Other	Time	No Disruptive Behaviors	Talking-Out	Out-of-Chair	Inattentive	Making Noises	Noncompliance	Physical Aggression	Verbal Aggression	Other
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10:00										20:00									
Total																			

- Place an "x" in the appropriate columns for each 15-second interval
- Operational definitions for each column are provided on the back of this form as a reference.

Appendix I: Classroom Observation Form (continued)

Operational Definitions

Talking-Out: Student speaks without permission or interrupts teacher and another student who are talking to each other.

Out-of-Chair: Movement of student from chair when not permitted. Such movement may include leaving the chair to open the window, remove items or threaten to remove items from the teacher's or other students' desk and moving around the room.

Inattentive: Student is not looking at the teacher during instruction. Instead, the student is looking around the room, staring out the windows, or looking towards the ground. The student may also be hanging off their chair, sitting upside down, or laying across the chair.

Making Noises: Student creates an audible noise other than a recognizable vocalization (such as growling, beeping noises, or grunts).

Noncompliance: Failure of student to initiate the appropriate response as requested by teacher.

Physical Aggression: Student engages in physical contact with a classmate that is not permitted by the classroom teacher (such as pushing, hitting, kicking, bumping into, scratching, or slapping).

Verbal Aggression: Student makes remarks or comments to a teacher or peer that are offensive and/or inappropriate (such as name-calling, swearing, or threatening).

Other: Student clearly violates school or classroom rules or engages in behavior that prevents him/her from engaging in learning tasks that are not otherwise defined. Such behavior must be determined by the rules in operation in the student's classroom.

Appendix J: Approval Letters

NEWTON
PUBLIC SCHOOLS
100 Walnut Street, Newtonville, MA 02460-1398
Office of Curriculum & Instruction

Phone: 617-559-6125
Fax: 617-559-6126

October 17, 2005

Mr. Craig Murphy
155 Riverside Drive
Wrentham, MA 02093

Dear Craig:

We have reviewed your request to conduct research in the Newton Public Schools and we are pleased to approve your project.

Your work may provide important insights in identifying student's behavioral challenges in order to more effectively support them at Horace Mann, as well as other schools within the district and beyond. I hope that you will share your data and completed research paper with us.

We look forward to receiving your paper and would be willing to work with you to make your findings available to others in the district and our larger community.

Sincerely,

Carolyn D. Wyatt, Ed.D.
Assistant Superintendent for Curriculum and Instruction

CDW/ab

Cc: Margery Daniels, Assistant Superintendent for Pupil Services

Appendix J: Approval Letters (continued)

Date: May 25, 2006

From: Dolores W. Maney, IRB Administrator

To: Craig P. Murphy

Subject: Results of Review of Proposal - Expedited **(IRB #23245)**
Approval Expiration Date: May 18, 2007
"An Investigation of the Relative Effectiveness of Function-Based and Non-Function-Based Behavioral Interventions"

The Social Science Institutional Review Board (IRB) has reviewed and approved your proposal for use of human participants in your research. By accepting this decision, you agree to obtain prior approval from the IRB for any changes to your study. Unanticipated participant events that are encountered during the conduct of this research must be reported in a timely fashion.

Enclosed is/are the dated, IRB-approved informed consent(s) to be used when recruiting participants for this research. Participants must receive a **copy** of the approved informed consent form to keep for their records.

If signed consent is obtained, the principal investigator is expected to maintain the original signed consent forms along with the IRB research records for this research at least three (3) years after termination of IRB approval. For projects that involve protected health information (PHI) and are regulated by HIPAA, records are to be maintained for six (6) years. The principal investigator must determine and adhere to additional requirements established by the FDA and any outside sponsors.

If this study will extend beyond the above noted approval expiration date, the principal investigator must submit a completed Continuing Progress Report to the Office for Research Protections (ORP) to request renewed approval for this research.

On behalf of the IRB and the University, thank you for your efforts to conduct your research in compliance with the federal regulations that have been established for the protection of human participants.

DWM/dwm
Enclosure
cc:

Please Note: The ORP encourages you to subscribe to the ORP listserv for protocol and research-related information. Send a blank email to: L-ORP-Research-L-subscribe-request@lists.psu.edu

Appendix K: Classroom Observation Rules

Rules for Conducting Classroom Observations

1. Always enter the classroom prior to the start time of the class being observed. For example, if you are going to observe a student during a math class that starts at 9:00 am, you should arrive no later than 8:55 am.

2. Be sure to sit in an unobtrusive location within the classroom with a clear view of the student you are observing.

3. If you are approached by a student during the observation, simply tell them you are there to watch the classroom and are not available to help them at the moment.

4. When then there are multiple observers, communication should be kept to a minimum. Stopwatches should be synchronized at the start of the observation period.

5. At the conclusion of the observation period all materials should be returned to the Rear Conference room and placed in the “Observations” folder. Make sure all of the situational and summary information is complete.

Appendix L: Intervention Calendar

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

A = Baseline Data, No Interventions
B = Non-Function Based Intervention
C = Function Based Intervention

Appendix M: Sample Intervention Descriptions

(A) Baseline

- There should be no changes to your everyday instruction.
- You should continue working with " Student A" as you have been all year long.
- Daily reinforcers and consequences should remain consistent during "baseline" days.

(B) Non-Function Based Intervention

- DAILY JOB = "Student A" will be given a small, classroom job at the beginning of an academic period (such as handing out papers or other materials).
- MODEL PEER = "Student A" will be paired with a peer from the classroom that demonstrates strong prosocial behavior during small group, math instruction.
- FREQUENT BREAKS = "Student A" will be allowed to take 3-minute breaks during academic periods, during which he can visit adults in the building that he chooses. These opportunities should be provided when "Student A" is exhibiting on-task behavior and completing work within the classroom.

(C) Function Based Intervention

- BEHAVIOR CONTRACT = "Student A" will work with the classroom teacher on a points-based, behavior contract that targets on-task behavior and work completion. Check-ins will take place three times per day, and "Student A" will be able to redeem points for items on his "Reward Menu."
- HOME-SCHOOL FOLDER = "Student A" will be responsible for selecting one assignment each day that he will share with parents after school. This assignment will be placed in his "Home-School" folder at the end of each school day.

Appendix N: Sample Treatment Integrity Checklist

Teacher Name:			**Date:**			
Treatment Integrity Checklist: Student Name						
Intervention Components: Function-Based Plan	**Day**					
	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Component Integrity**
Student will be given an "Asking for Help" script at the beginning of the school day.						
Student will review his behavior plan with the classroom teacher at the beginning of the school day.						
Student will receive "Computer Tokens" for doing his best work and behaving like a third grader during math.						
The teacher will "catch student being good" during math by checking in with him when he is on-task and identifying his positive behavior by saying, "Student, I like how you are paying attention and/or completing your work."						
Student will review his behavior plan with the classroom teacher and count his "Computer Tokens" to determine how much computer time he earned.						
Student will receive 3 minutes of computer time at his after-school program for each token that he earns.						
Student will show his daily chart to the school psychologist.						
Session Integrity						

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PROFESSIONAL EXPERIENCE

School Psychologist, The Newton Public School District, Newton, MA
September 2000 to Present, Full-Time

Responsibilities include conducting psycho-educational assessments and reevaluations of students at The Horace Mann Elementary School; leading interagency meetings involving students; conducting groups for children dealing with social skill difficulties and anger-management problems; counseling individual students on a weekly basis; and consulting with teachers and other staff regarding individual students as well as class-wide behavior management plans.

Technical Intern, Fidelity Brokerage Company Technology (FBCT)
June 2005 to September 2005, Full-Time

Reported to the Director of Project Management and conducted a comprehensive project analysis investigating the relationship between project budgets and actual expenses accrued by subdivisions. Responsibilities included researching the progression of all projects completed within the last two fiscal years, interpreting and analyzing the data, designing PowerPoint presentations to articulate the results of the analysis, and made recommendations for changing staffing policies across business units in development methodology approaches.

Computer Instructor, The Pennsylvania State University Computer Academic Center
September 1999 to June 2000, 10 hours/week

Teach 2-3 hours seminars on common computer software programs. Classes include Microsoft Word (Introduction and Advanced), Microsoft PowerPoint, Microsoft Excel (Introduction and Advanced), Statistical Packages (SPSS and Minitab), Web Design (a four class series), and Photoshop. Participants in the seminars include undergraduate students, graduate students, faculty, and local school administrators.

PUBLICATIONS and PRESENTATIONS

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