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USING FUNCTIONAL BEHAVIORAL ASSESSMENT TO SUPPORT AN
ELEMENTARY
STUDENT WITH CHALLENGING BEHAVIOR IN A SELF-CONTAINED
CLASSROOM

by
Alan Leonardi

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts Degree
of
The Graduate School
at
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Approved by _____
Professor

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ABSTRACT

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USING FUNCTIONAL BEHAVIORAL ASSESSMENT TO SUPPORT AN ELEMENTARY STUDENT WITH CHALLENGING BEHAVIOR IN AN SELF- CONTAINED CLASSROOM

2004/2005

Dr. Mian Wang

Master of Arts in Special Education

The purposes of this single-case study were to examine the effectiveness of interventions based on functional behavioral assessment (FBA) to positively support a student who had specific challenging behaviors and to determine if it was practical for a classroom teacher, the researcher, to utilize functional-assessment techniques. The researcher used indirect and direct-observation tools to identify three target behaviors, record frequencies and durations, and describe the antecedents and consequences of behaviors. Hypotheses based on functional assessment principles were used to design an intervention plan. The researcher used an A-B design to compare baseline frequencies of behaviors to post-intervention frequencies and administered a short questionnaire to himself and the student's one-to-one aide to indicate the practicality of FBA. Incidents of behavior significantly declined for all three target behaviors, and responses to the questionnaire were favorable toward the use of FBA. Discussion topics include the utility and acceptability of FBA procedures and possible applications in other settings.

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CHAPTER ONE

INTRODUCTION

Statement of the Problem

Managing challenging behaviors has been a major concern for educators, particularly in special-education settings, where students are often placed because of behavior problems. Challenging behaviors are those that impede educational progress and may include severe behaviors, such as aggression and self injury, or more typically, distracting and instructionally disruptive behavior (Sterling-Turner, Robinson, & Wilczynski, 2001). Teachers and students are disadvantaged when challenging behaviors reduce academic time-on-task, a key component of learning (Burke, Hagan-Burke, & Sugai, 2003).

Traditionally, behavior-modification plans for challenging behavior have been consequence based. These plans have relied on systems of rewards for positive behavior and aversive procedures (punishments) for undesirable or problem behavior (Kern, Choutka, & Sokol, (2002). Consequence-based plans continue to be widely used and may be effective for alleviating problem behavior for some students; however, researchers have warned that such plans are often ineffective (Zuna & McDougall, 2004) and rewards-based gains may be temporary at best (Kohn, 1994). Educators need an alternative approach for designing interventions for students whose challenging behaviors resist consequence-based plans

A response to the failure of consequence-based behavior management is Positive

Behavioral Support (PBS). Rather than granting rewards and imposing punishments, PBS focuses on designing interventions that will decrease the chances of problem behavior occurring (Horner & Carr, 1997). Examples of PBS interventions include altering environmental factors (antecedent changes) and teaching students more appropriate social skills (Zuna & McDougall, 2004). PBS interventions are often informed by functional assessments. FBA procedures generate hypotheses concerning the consequences of behavior (what the student gets out of it), antecedent events that trigger behavior, and settings, the broad contexts of behavior (Horner & Carr, 1997). Recent reviews of empirical literature have found that interventions based on FBA have been very effective (Ervin, Radford, Bertsch, Piper, Ehrhardt, & Poling, 2001; Kern, et al., 2002). In addition, functional assessment has recently been endorsed by reauthorizations of The Individuals with Disabilities Education Act (IDEA) (Dieterich, Villani, & Bennet, 2003).

The apparent success of PBS and FBA in reducing challenging behavior has generated a great deal of interest and support; however, questions remain concerning the application of the techniques in real-world educational settings, particularly in special-education classrooms (Packenham, Shute, & Reid, 2004). A key component of FBA has been functional analysis, systematically testing variables that may influence behavior in an analog (laboratory) setting (Horner & Carr, 1997). Such procedures may be too time consuming and labor intensive for use by those, such as classroom teachers, directly involved with challenging students (Symons, McDonald, & Wheby, 1998). Also, FBA has traditionally been performed by teams, involving school psychologists and possibly researchers. The need remains for FBA procedures that can be practically used by classroom teachers to alleviate problem behaviors (Packenham et al., 2004). Furthermore,

many studies have focused on students with severe disabilities. Although IDEA implies that FBA may be applicable to all disabled students (Dieterich et al., 2003), less attention has been paid to studies of FBA for addressing the distracting and disruptive behaviors more common to ordinary classroom settings (Sterling-Turner et al., 2001).

Significance of the Study

Studying the application of functional assessment is important to educators because the 1997 reauthorization of IDEA and its corresponding federal regulations generally endorse FBA and mandate its usage in certain circumstances. These federal laws recommend the use of FBA to facilitate the development of Behavioral Intervention Plans (BIPs) for special-education students and recommend including them in Individual Education Plan (IEP) documents. Dieterich et al. (2003) contend that since legislation is not specific regarding types of disabilities or behaviors to be addressed, the intent of IDEA is for the usage of FBA for all classified students with behavior problems. Furthermore, the IDEA is specific in requiring FBA to help develop or modify BIPs for all students who are suspended for 10 days or more or whose placements are changed because of behavior problems. In addition, recent legal decisions based on IDEA have ruled for districts to include sound BIPs in students' IEPs. (Dieterich et al., 2003).

IDEA requirements for FBA have evolved from continuing interest in managing challenging behavior in classrooms. Such behavior can be extremely disruptive and can impede the learning of the student who exhibits problem behaviors and the learning of his or her classmates. Challenging behavior can also negatively affect students' socialization and inclusion into regular-education classrooms. Unfortunately, researchers note that many challenging behaviors are resistant to traditional, consequence-based intervention

plans, and problem behaviors may persist or temporarily decrease then reappear after treatment. Therefore, educators are highly interested in more effective intervention methods (Foster-Johnson & Dunlap, 1993).

FBA and PBS offer an alternative to consequence-based interventions. FBA and PBS focus on detecting the probable causes of problem behavior and designing interventions based on these hypotheses. PBS interventions influence changes in the educational environment to specifically alleviate problem behaviors, rather than rewarding consequences or attributing challenging behaviors to pathology (McConnell, Hilvitz, & Cox, 1998.) Since their inception, studies concerning the usage of FBA and PBS have proven them to be effective with diverse populations (Sugai, Lewis-Palmer, & Hagan, 1998). However, because of steadily growing interest in PBS and FBA, more studies are needed to explore their usage in various settings by different types of practitioners (Packenhan et al., 2004).

Investigating the utility of functional assessment is especially important to the researcher in the present study because as a classroom teacher, he is confronted with his students' challenging behavior daily. Therefore, the potential for functional assessment to influence interventions of lasting benefit is of great interest to the researcher. In this study, the researcher will implement functional assessment techniques and test their utility in a special-education school setting where some students' challenging behaviors are resistant to a school-wide, consequence-based, behavior-modification system. Because of the persistence of problem behaviors, the researcher believes that positive behavioral change would benefit the subject student, classmates, and himself.

Purpose of the Study

The purposes of the study are to examine the utility of interventions based on functional assessment to positively support a student who has specific challenging behaviors and to determine if it is practical for a classroom teacher, the researcher, to successfully utilize functional assessment techniques to address problem behaviors within a self-contained classroom. After identifying the target behaviors, the researcher will use FBA tools to formulate hypotheses regarding the causes and functions of problem behaviors. Hypotheses will be used to influence the content of behavioral interventions. Interventions will be implemented, and the effectiveness of the interventions will be evaluated by comparing the changes between post-intervention data and pre-intervention baseline data.

Research Questions

Within the scope of the current study, the researcher seeks to answer the following questions:

1. Is functional assessment a valuable tool to address the challenging behaviors of a six-year-old student who has emotional/behavioral disorders in a self-contained classroom?
2. Could functional assessment be practically utilized by a classroom teacher within the environment of normal classroom routines?
3. Would behavioral interventions based upon functional assessment produce positive behavioral changes?

CHAPTER TWO

LITERATURE REVIEW

Reviewing the literature reveals a strong ideological and empirical support for the use of FBA and PBS to manage challenging behaviors. Federal and state legal requirements for the use of FBA and PBS have heightened interest and helped generate numerous studies. Meta-analyses of empirical studies show that interventions based on FBA have been effective for managing the challenging behaviors of a variety of students in diverse settings. Small and individual case studies have also demonstrated the effectiveness of FBA and have examined the feasibility of shifting control of FBA procedures from researchers to educators in classroom settings. In the following section, I will focus the review on several topics, including: (a) legal recommendations for the use of FBA and PBS, (b) an overview of functional assessment and positive behavioral support, and (c) practical issues for the implementation of FBA and PBS in school settings.

Legal Recommendations for the Use of FBA and PBS

Disciplinary Provisions of IDEA for Students with Problem Behavior

Functional behavioral assessment has been used by behavior analysts and school psychologists for many years; however, federal endorsement of FBA in the 1997 Reauthorization of The Individuals With Disabilities Act (IDEA) has greatly increased interest among educators. (Ervin et al., 2001). Prior to 1997, the focus of the IDEA was on ensuring access to the least restrictive environment for disabled students. Since its

reauthorization, IDEA emphasis has shifted to “promoting positive educational outcomes” (Gable, Quinn, Rutherford Jr., & Howell, 1998, p. 106).

An important aspect of promoting positive outcomes is providing Positive Behavioral Support (PBS) for students with challenging behavior. IDEA 1997 requires that IEP teams use PBS, backed by functional assessment for students whose behavior impedes the learning of themselves or others. IEP teams must use FBA to develop a Behavioral Intervention Plan (BIP) for students whose placements are changed because of behavioral problems, including those who are placed in interim settings for drug or weapons offenses and those who are suspended for more than ten days. If a BIP already exists, the IEP team must meet to review and consider revision of the plan (Dieterich, et al., 2003).

Federal regulations connected with IDEA 1997 also delineate the responsibilities of local and state educational agencies in preparing school personnel to conduct FBAs and develop BIPs. Local educational agencies (LEAs) are directed to ensure that school psychologists, case workers, and teachers participate in developing positive behavioral supports. State agencies are required to describe how they will work to increase the ability of educators to use PBS strategies (Dieterich et al., 2003).

Disciplinary Provisions of the Special Education New Jersey Administrative Code for Students with Problem Behaviors

Requirements of Chapter 14 Special Education New Jersey Administrative Code Title 6A Education (1998, 2001, 2002) echo the federal regulations for disciplining students with disabilities. This is of relevance to the current study because the subject student resides in a New Jersey school district. As does IDEA, the New Jersey Code

requires that LEAs use FBA procedures whenever classified students are subject to a change of placement for disciplinary reasons (§ 300.520 (b) (1) (i)). The code defines change of placement as removal from the current educational setting for periods of ten days or more (§ 300.519 (a)). Within ten days after removal, the IEP team must meet to conduct FBA and draft a BIP if one does not already exist (§ 300.520 (b) (1) (i)) or meet to modify an existing BIP (§ 300.520 (b) (1) (ii)). Following the meeting, the LEA must implement interventions, based on the BIP as soon as possible (§ 300.520 (b) (2)). Even if a ten-day removal does not constitute a change in placement, the IEP team must meet to modify a BIP if one or more of its members deems it necessary (§ 300.520 (c) (1)).

Legal Decisions Supporting the Use of FBA and PBS

Recent legal decisions support the use of FBA and PBS. Dieterich et al. (2003) contend that since IDEA is not specific regarding which students should receive FBA, that for their own legal protection, LEAs should consider using FBA for all classified students. Indeed, judicators have supported districts that have included sound BIPs in students' IEPs and have ruled against those who have not.

To date, most case decisions have come from state hearing officers. In Modesto, California (*Modesto City School District*, 1998 as cited in Dieterich et al. 2003), a hearing officer held for the parents when it was revealed punitive measures were used by teachers for the challenging behaviors of a sixteen-year-old autistic boy, including pouring water over the student's head. Also, the hearing officer found that the student's BIP was useless because it was outdated, in need of revision, lacked baseline data, descriptions of target behaviors, and statements of antecedent events. In other cases (*Goleta Union Elementary School District*, 1999; *Mason City Community School District*, 2000 as cited in Dieterich

et al. 2003), hearing officers also ruled against districts when BIPs were found to be inadequate. Some of the shortcomings of BIPs included failure to include specific details on implementation, no revision in spite of escalating challenging behaviors, failure to identify the causes of problem behavior, not designing BIP to meet individual needs, not facilitating acquisition of appropriate skills, and using the same behavioral goals over a period of years without success (Dieterich et al., 2003).

A recent court case illustrates the value of school districts including sound BIPs in students' IEPs. In *Rome School Committee v. Mrs. B* (2000, as cited in Dieterich et al. 2003), the parent of a twelve-year-old boy with learning and behavioral problems demanded that the district provide residential treatment for her son because the district was not meeting his needs. Initially, a due-process hearing officer agreed, stating that the district had violated IDEA by failing to address the students' behavioral disabilities and by not instituting a BIP. Upon further review, the district court overturned the decision, finding that the district did provide an adequate BIP, which included one-on-one supervision, weekly meetings with a psychologist, and a plan that rewarded positive behavior (Dieterich, et al., 2003).

In spite of the strong federal endorsement of functional assessment following IDEA 1997, House and Senate bills attached to a more recent reauthorization (2004) may eliminate the need for FBA and BIPs (NAPAS, 2004; Wrightslaw, 2003). It remains to be seen whether districts will continue wide-spread use of FBA without a federal mandate.

The federal government may or may not continue to endorse FBA. However, legislative support of FBA grew from educators' general interest in FBA as a component of PBS strategies. Research seems to support the contention that PBS is an effective

alternative to traditional behavior-modification plans.

Overview of Functional Assessment and Positive Behavioral Support

Positive Behavioral Support refers to systems of strategies used to design interventions for reducing challenging behaviors. Originally, the focus of PBS was on managing severe behavioral problems, such as aggression and property destruction (Horner & Carr, 1997), but recently usage of PBS has expanded to include a wide variety of behaviors that inhibit learning in various educational environments (McConnell et al., 2001).

Interest in PBS grew as a result of dissatisfaction with traditional consequence-based behavior-modification plans, which most often feature rewards for displays of desired behaviors and punishments for problem behaviors. Unfortunately, research has shown that consequence-based behavior schemes may be ineffective, and positive results may be only temporary (Zuna & McDougall, 2004; Kohn, 1994).

In contrast to consequence-based plans, PBS strategies are far more extensive than those that offer rewards and punishments. PBS is tailored to individual student behaviors, and seeks to reduce problem behaviors by manipulating environmental influences to reduce the probability that challenging behaviors will occur. Teaching new adaptive and socially appropriate skills to promote positive behavior is also often a feature of PBS. Ideally, PBS is comprehensive, involving the student, educators, the student's family, and the community (Horner & Carr, 1997).

Functional behavioral assessment is a key component of PBS. Although FBA may encompass a variety of procedures, "its specific purpose should be to identify why behavior occurs within a specific context in order to develop appropriate interventions"

(Asmus, Vollmer, & Borrero, 2002, p. 67). FBA procedures attempt to identify the variables that trigger and reinforce target behaviors. Reinforcing consequences serve as the functions of target behavior for the student or what the student gains from the behavior (Steege, Davin, & Hathaway, 2001). The most common functions of behaviors include increased attention, escape or avoidance, and sensory stimulation (Asmus et al., 2002). FBA seeks to link the probability of challenging behavior to environmental influences, leading to hypotheses regarding probable causes. Hypotheses are then used to design interventions, which may include environmental manipulation or skill instruction, and the efficacy of interventions is tested through data collection.

Functional assessment methods may vary and may include techniques such as interviews, direct observation, and experimental manipulation (functional analysis). FBAs typically include a descriptive phase in which data on settings and target behavior are collected, an interpretive, hypothesis generating phase, an interpretive, hypothesis verification phase, and a treatment implementation and monitoring phase (Sterling-Turner et al., 2001). Gable et al. (1998) offer a ten-step model for guidance in performing and understanding FBAs.

The first step recommended by the authors is to “verify the seriousness of the problem” (p. 107). The authors recommend that educators compare subjects’ behavior to other students’ to determine if it is indeed challenging beyond the limits of normal behavior within the context. Also, the authors contend that FBA may not be necessary unless conventional interventions have failed.

The second step is to “operationally define target behaviors” (p. 107). The researcher should precisely describe behaviors in terms that will be easy to observe and

record. The researcher should observe the subject in various settings and interview those close to the student to gain their perspectives on behaviors.

The third step is to “collect data on possible causes of problem behavior” (p. 107). The researcher or team should use a variety of methods to collect information on the times, conditions, and individuals present when target behaviors are most and least likely to occur. A consideration for the researcher is whether the target behaviors result from a skill deficit or performance deficit. Students who lack the skills to perform expected tasks may act out to avoid them. Others with performance deficits possess a skill but may not use it because they are not rewarded for performing it. Indirect data collection may include structured interviews with adults close to the student and perhaps with the student him or herself. Direct observation tools may include antecedent-behavior-consequence (ABC) forms and matrix or scatter plot forms to record frequency of behaviors and relationships to settings. The authors stress that the researcher or team use the necessary tools to produce an accurate and reliable database.

The fourth step is to “analyze data using triangulation or problem pathway chart (p. 108).” These tools are used to describe “possible stimulus-response patterns, predictors, maintaining consequences, and likely functions of problem behaviors (p. 108).” Triangulation and the problem pathway chart help the researcher to sequentially arrange data on behavior, antecedents, setting events, and the maintaining consequences of behavior. As a result, the researcher can identify possible stimulus-response patterns implicit in behavior.

The next step is to “generate hypothesis statement regarding likely function of problem behavior (p. 108).” The hypothesis serves to explain the causes of the student’s

behavior. The statement should predict the contexts in which the behavior will occur and include the functions of the behavior for the student. Typical functions include escape-avoidance, attention seeking, or sensory stimulation.

The sixth step is to “test hypothesis statement regarding function of target behavior (p. 108).” The researcher should manipulate events (functional analysis) to verify the hypothetical assumptions. If setting events are thought to influence behavior, the researcher may modify them to see if such changes produce positive results. Manipulation may include changes in antecedents and consequences; however, the researcher may be unable to affect social or environmental influences.

The seventh step is to “develop and implement behavioral intervention plan (p. 109).” Based on previous hypotheses, the researcher then develops program modifications, positive strategies, and supplementary supports designed to produce improvements in challenging behavior. An intervention plan may include modifying setting events, manipulating the antecedent and consequences of behavior, teaching new, acceptable behaviors that serve the same purpose as challenging behaviors, changing curriculum or instructional methods, or introducing new modifications and supports to address skill deficits. Attempts to improve motivation and address performance deficits may include extrinsic motivators.

The eighth step is to “monitor faithfulness of implementation of the plan (p. 110). This may involve use of a check list for staff members to complete that corresponds with various components of the plan. It could be used to measure the consistency of implementation.

The ninth step is to “evaluate effectiveness of behavioral plan (p. 110).” Those

involved should continue to collect data on target behaviors to be compared to baseline data. Those involved should have a goal for the degree of behavioral change expected and guidelines for when the plan should be reconsidered or revised.

The final step is to “modify behavioral intervention plan (p. 110.)” when needed. Causes for modification may include when the student has achieved his or her goals, when situations change along with current needs, when there is a change in placement, or when the plan fails to produce positive behavioral changes.

Practical Issues for the Implementation of FBA and PBS in School Settings

Originally, many studies of functional assessment were conducted with severely disabled subjects in clinical settings. Since IDEA 1997, the use of FBA has rapidly expanded. More recent studies have focused on the effectiveness of FBA for clients with various disabilities, the utility of FBA in educational settings, and the ability of educators, including teachers to conduct FBA in classrooms (Ervin et al, 2001). These concerns are relevant to the current study because the researcher is also a teacher who will attempt to perform FBA procedures in his own special-education classroom.

An analysis of empirical literature, conducted by Ervin et al. (2001) provides a wealth of information on the use of FBA in school settings. The authors selected 100 articles, published between 1980 and 1999 that described actual research on FBA and from those articles extracted data on 278 participants. Data was coded in categories and presented in tables depicting actual numbers of participants and their corresponding percentages of the whole.

Results of the Ervin et al. (2001) analysis show that FBA techniques were used effectively in school settings to identify behavior functions and develop useful

interventions. The majority of the studies (52%) were conducted in special-education classrooms, and demographic data revealed that subjects with a wide range of disabilities were involved. School personnel were fully involved in FBA procedures, but school personnel performed functional analysis and implemented interventions without assistance in only 23% of cases. Thus, the majority of educators studied relied on the input of researchers. Most of the interventions were based on FBA (54%) and produced overwhelmingly positive results (98.7%). In spite of the apparent success of using FBA in school settings, the authors caution that specific information regarding how FBA can be best used remains unknown.

Another literature analysis, conducted by Kern et al. (2002) also found FBA to be useful in school settings. Information on 42 subjects (primarily under age 12, 74%) was coded and tabulated in three broad areas: participant characteristics, assessment information, and intervention information. Results revealed that FBA was used for a variety of disability categories and for various target behaviors: aggression 62%, disruption 57%, off task 50%, and noncompliance 38%. Special-education classrooms were the most common settings (36%), but the researchers found that the majority of individuals completing assessments were not identified in most articles. School personnel were identified as completing assessments in only 12% of cases, but a larger number of school personnel (40%) were identified as those implementing interventions. Interventions were largely successful, but the authors caution that long-term effectiveness of interventions was rarely monitored.

Reid and Nelson (2002) also reviewed the literature on FBA to gain insight on its utility, acceptability, and practicality. The authors examined 14 studies of FBA in school

settings that included 43 students with high-incidence behavior problems.

To assess the utility of FBA, the researchers posed the question: “Did the FBA procedures used by researchers improve the behaviors of students in school settings (p. 16)?” Results showed FBA to be highly effective in 12 of the 14 studies. Problem behaviors were reduced to almost 0 in 7 of the studies even though prior non FBA approaches had failed. In spite of the apparent success of FBA, its durability and generalization were not apparent because data on long-term maintenance was only included in 1 of the 14 studies.

To assess the acceptability of FBA, the researchers asked whether or not direct-service providers viewed FBA as “socially significant” and “socially acceptable (p. 16).” Acceptability is an important issue because it is unlikely that FBA will be widely used if educators view it as “intrusive, aversive, or impractical (p. 18).” Data was not conclusive because only 4 studies presented data on social validity. Of these, teachers provided positive feedback in 3 studies using rating scales and rated FBA as acceptable. In 1 study, 5 of seven teachers used FBA interventions, 1 was unwilling to try, and 1 required extensive support from researchers.

Questions used to address practicality were “Have school personnel performed the FBA ? (p. 18)” and “How demanding is performing FBA in terms of time and resources? (p. 19).” Results were inconclusive because a teacher performed the FBA unaided in only one of the fourteen studies. In the remaining studies, researchers performed the vast majority of the procedures with teachers limited to assisting in formulating hypothesis statements. Results on time consumption were also inconclusive because of the variety of FBA techniques utilized; the number of sessions ranged from three to twenty.

In conclusion, the researchers believed that FBA-based interventions seemed to improve student behavior dramatically in almost all cases. Also, based on limited examples, FBA seemed socially valid and acceptable. However, the researchers were concerned that because of the limited amount of participation by school personnel, the practicality of FBA was still unknown within the scope of the literature review.

Literature reviews seem to show largely positive results for FBA-based interventions in school settings. However, the results of specific studies of small groups of students and single-case studies are more applicable to the current study because the researcher intends to design FBA-based interventions for a single student's challenging behaviors.

A study by Burke et al. (2003) examined the use of FBA for the challenging behaviors of a third-grade boy with learning disabilities (LD) in a general-education classroom. The subject's (Mario's) behaviors ranged from mildly off-task to openly disruptive, mostly during reading instruction. To collect data for FBA, the researchers used interviews, a curriculum-based measure of reading skills, and direct observation, featuring ten-second partial-interval sampling across a range of conditions. The researchers then hypothesized that escape/avoidance of reading tasks was the function of Mario's problem behaviors. An intervention was designed which featured pre teaching of vocabulary prior to reading tasks. Again using ten-second partial-interval-sampling, an alternating treatments design was used to measure the effectiveness of the intervention, allowing experimental manipulation of the independent variable (the intervention) to observe effects on the dependent variable (levels of task engagement).

Results proved the value of the intervention. As a control, researchers observed

Mario on task 38% of the time during reading tasks when the pre teaching intervention was not utilized. With the intervention, on task behavior increased to 99%. Results would indicate that FBA is a valuable tool for designing interventions for LD students.

However, the study does little to prove that educators can perform FBA in authentic settings because the researchers with a team of trained interns conducted 100% of the procedures.

In another case study (Sterling-Turner et al., 2001), behavior also improved following FBA for another, older (13), LD student. In this study, regular and special education teachers worked with the researcher to address the student's spitball throwing. Based on ABC narratives and other descriptive data, the team hypothesized that gaining either peer or teacher attention was the function of the student's behavior. The team then enlisted the help of classmates to test the rival hypotheses, using alternating treatments to provide teacher then peer attention. The experimental manipulation proved peer attention to be the student's motivating factor. The intervention plan provided the student with access to positive peer attention. If the student's self-monitoring showed he did not throw spitballs 80% of the time, he was given peer tutoring for the last ten minutes of each math class. Within a week, the student's spitball throwing decreased to zero, and his academic performance increased within three weeks.

In a Canadian study (Symons et al., 1998), researchers successfully trained a teaching staff to collect frequency data, to assist in hypothesis development, and to implement interventions. Two students were studied: Ryan, an eight-year-old boy with ADHD, who frequently talked out of turn and Marcus, a twelve-year-old boy with low cognitive skills and anti-social behavior, who offered inappropriate comments. The

researchers surmised that the rigid control needed for functional analysis was not attainable in the classroom setting, so they trained the staff in simpler methods. Student behaviors were continuously counted by the staff, using scatter plots, which divided the school day into 30-minute segments. Scatter plots completed by researchers showed 93% inter-observer agreement with staff. Hypotheses and interventions were designed cooperatively by staff and researchers, using published guidelines. An A-B teaching design in conjunction with the scatter plot was used to test the independent variable, program change, during interventions. Results showed that Ryan's incidences of talking out declined from 56% of intervals to 33% following intervention. Marcus' inappropriate comments decreased from 100% to 40%. Because of these successful interventions, the researchers concluded that FBA was a viable tool for use by educational staff in classroom settings.

In a recent single-case study, Zuna and McDougall (2004) used PBS and FBA to address the challenging behaviors of a six-year-old girl, diagnosed with ADHD, seizure disorder, and developmental coordination disorder. The subject's (Callie's) behaviors were frequently disruptive and resistant to a class-wide token-reward system. The authors first collected interview information from Callie's parents and teachers. Then, the researchers gained knowledge of the times and conditions Callie did and did not demonstrate challenging behavior by observing behavior in 6, 10-minute sessions, covering a variety of activities throughout a single day. Functional analysis data was recorded on a separate day, during 23, 10-minute sessions of 5 regularly occurring routines. During each 10-minute session, researchers recorded the frequency of Callie's escape-motivated and attention seeking behaviors. FBA results showed both escape-

motivated behaviors--refusing to begin academic tasks, hurrying to complete academic tasks, asking irrelevant questions, fidgeting, and attention-seeking behaviors--tattling, asking personal questions, and soliciting adults' attention.

The researchers and the teacher decided escape-motivated behaviors were the most disruptive to Callie's learning. Four interventions were designed to address these behaviors: differential reinforcement of alternative behaviors (DRA), DRA with task modification, DRA with social breaks, and DRA with choice of task. The researchers collected data following each intervention. Incidences of escape-motivated behavior decreased from the baseline mean of 26.2 per session to 25.2 after the first intervention. Data from subsequent interventions showed continued improvement: M=16, M=13, and M=12 per session. Maintenance data on intervention number four, 19 days later, showed a consistent, M=12.

Results of the Zuna and Mcdougall (2004) study infer that FBA can be valuable to manage challenging behavior within the context of ongoing classroom routines. With the support of researchers, the teacher was able to contribute to FBA and manage interventions. However, in this study, the teacher relied heavily on researchers for functional analysis, and Callie's attention-seeking behaviors were never addressed.

In a 2004 study (Packenham et al.) from Australia, researchers designed FBA procedures that a teacher could perform mostly himself within his classroom setting. Challenging behaviors included those of a disruptive eight-year-old, high achieving girl (Michelle) and a nine-year-old, low achieving, boy with learning disabilities (Jack), who had problems completing tasks. Following an interview with the teacher, one of the researchers used 20-second partial-interval recording to document the number of target

behaviors within 20 minute periods, defined by the teacher as peak periods.

With the help of researchers' guidelines, the teacher was able to formulate hypotheses and design interventions. First, using the data from the researchers' (Packenham et al., 2004) direct observations, the teacher was able to determine probable cause of behavior, using guidelines from Trout, Nelson, & Reid (2001) (as cited in Packenham et al., 2004). Then, the teacher was able to formulate hypothesis statements, using guidelines from O'Neill et al. (1997). Finally, he designed interventions by matching target behaviors to interventions as recommended by DuPaul and Ervin (1996).

Results of the shortened FBA procedures and interventions were largely successful. Michelle's disruptive behavior decreased from a baseline mean of 34% of intervals to 10% of intervals following treatment. Jack's off-task behaviors decreased from 53.12% baseline mean to 24.4%.

Following the procedures, the researchers questioned the teacher to determine his opinion of the social validity of FBA. The teacher rated FBA as taking up little time, worth the time, and just a little intrusive. The teacher understood most of the process and said he would be willing to use it again although he thought he still required some assistance. He found the interventions to be highly effective with Michelle and somewhat effective with Jack.

The researchers determined the following conclusions: Truncated FBA is practical for use in classrooms by teachers. Interventions designed by the teacher did result in decreases in problem behavior. The teacher considered FBA for the most part to be socially valid.

Summary

Reviewing the literature reinforces the value of using FBA. In many disciplinary cases, using FBA has become a necessity to comply with federal and state regulations, and there is implied statutory endorsement for use of FBA in all behavior plans.

Literature analyses show interventions based on FBA to be overwhelmingly effective in diverse contexts. The most recent case studies have demonstrated that it is possible to simplify FBA procedures so that they can be used by educators in classroom settings while managing ordinary, daily routines.

CHAPTER THREE

METHOD

Participants and Background Information

The researcher selected one of his students, Tom (a pseudonym), as a subject because of his history of exhibiting significantly disruptive behavior. At the time of data collection, Tom was six years old. A search of the records revealed that Tom, born cocaine addicted, was the adopted son of a single mother. From conversation with the mother, the researcher learned that Tom had a stable home life, and he always appeared clean and well kept. Tom's scores on the Wechsler Intelligence Scale for Children III (1991) were within one standard deviation below average: Verbal IQ--85, Performance IQ--88, Full Scale IQ--86. Psychological evaluations indicated problems with peer interaction, adaptability, hyperactivity, attention, aggression, depression, and impulsivity.

Prior to the time of data collection, the child-study team from Tom's home school district classified him as eligible for special education under the category of emotionally disturbed (ED). Behavioral problems within his general-education kindergarten classroom included hitting, fighting, cursing, impulsivity, selfishness, and disregard of personal safety. Following the failure of behavioral interventions, Tom was placed out of district into the subject school, a receiving school for students with disabilities.

The subject school featured individualized instruction in a small setting. At the time of data collection, there were only 55 students enrolled, placed within 6 self-contained classrooms. Each classroom included less than 10 students, a teacher, and a

teaching assistant. Support personnel included social workers, one-to-one aides, and speech, occupational, and physical therapists. Eight students, ages 5 to 7, were enrolled in Tom's classroom. Staff included the teacher (the researcher), a teaching assistant, Tom's one-to-one aide, and a one-to-one aide for another student, all who interacted with Tom on a daily basis. Instruction and services were delivered within the classroom with the exceptions of Art, Gym, Music, and Individual Counseling. The teacher collected all data within the classroom with some assistance from the one-to-one aide and Tom's counselor.

All the students at the subject school, including Tom, were participants in the school-wide behavior-modification system. Each student earned points daily for good behavior in five categories: body control, respect, work, politeness, and following directions. At the end of each day, the students within each classroom with the most accrued points were allowed first choice of reward activities, spanning 40 minutes. The maximum possible number of points earned daily by each student was 75. Those students who earned less than 65 points were required to write repetitively in "quiet room" instead of attending a reward activity.

Tom was unresponsive to the behavior-modification system and a frequent visitor to the quiet room. His challenging behavior persisted with little or no improvement from his enrollment in September to December of the data-collection school year. Some examples of his behavior include refusing to work, disruptive outbursts, cursing, destroying work, and taunting and hitting other students. Because of the severity of Tom's challenging behavior and his negative response to the behavior system in place, the teacher decided to seek a behavioral intervention informed by a functional assessment.

Procedure

Data collection for the functional assessment began with obtaining written consent from Tom's mother, followed by a search of the records available to the teacher. Record-search categories included general history, medical issues, educational programs, psychological issues, social history, and intervention history. Next, the researcher conducted a series of structured interviews with himself, Tom's one-to-one aide, and Tom's counselor. As part of her interview, the counselor elicited some responses from Tom. Interviews included information about strengths and weaknesses, likes and dislikes, and settings, antecedents, and consequences of behavior.

The next step toward the functional assessment was to operationally define target behaviors. The teacher informally observed Tom's behavior for five days and kept anecdotal records. Based on the record search, interviews, and observations, the researcher identified Tom's three most significant challenging behaviors as noncompliance, disruption, and aggression. Noncompliance included refusing to work or ignoring or not following directions. Disruption included behaviors that were distracting to peers or staff, such as verbal outbursts, running around the room, or destroying or throwing objects. Aggression was limited to physically contacting peers or staff with Tom's body or objects.

Measures

Baseline data was recorded by the researcher through direct observation during four complete six-hour school days. The researcher described behavior using ABC (Antecedent, Behavior, Consequence) recording forms (Crone & Horner, 2003). Antecedent information included the time of day, the activity, and staff interactions with

Tom prior to incidents of target behavior. Descriptions of behavior included exactly what happened with information on duration and intensity of behaviors. Following behaviors, the researcher recorded information on consequences, describing what happened immediately afterward, including reprimands, ignoring, rewards, or punishments.

The researcher used a scatter plot (Crone & Horner, 2003) to summarize the four days of baseline behavior. Each day was divided into 1/2 hour intervals, noting times and activities, reflecting the daily academic schedule. Incidents of the three target behaviors were recorded for each interval, then totaled daily.

Following analysis of behavior patterns, the researcher generated a hypothesis statement for each target behavior. Each hypothesis statement began with a description of what was most likely to happen before a challenging behavior, followed by a description of the behavior itself. The final component was a statement of the likely consequences, or functions of the behavior for Tom--escape, attention seeking, or self-stimulation.

Following hypothesis generation, the researcher used the Competing Behavior Model (O'Neill et. al., 1997) to inform intervention design. First, the researcher recorded the setting events for problem behaviors, antecedents, the problem behaviors, and their reinforcing consequences. Then, the researcher recorded a new (desired) behavior and a new consequence to replace each problem behavior. An alternative would have been to record a replacement behavior that would have served the same function as the problem behavior.

Intervention began with skill training over a five-day period, using techniques from McGinnis and Goldstein (1997). First, the teacher defined the skills to be learned to Tom and other class members. Then, the teacher modeled the skills, using concrete

examples in relevant situations. Next, the students conducted role plays, featuring target skills with feedback from the student performers and the teacher. Finally, the students practiced newly learned skills at home, orally reporting the results each following day in class.

Before implementing the next phase of intervention, the teacher discussed intervention goals and procedures with Tom and his one-to-one aide. Based on hypothesis statements and the competing behavior model, the researcher (the teacher) modified several setting events. Reinforcers were scheduled for each 1/2 hour period and for each day. Finally, the teacher and Tom signed a behavior contract, featuring a tangible reward for Tom upon its successful completion. Before implementation, the teacher secured the cooperation of the one-to-one aide for dispensing rewards and tracking behaviors.

During the intervention phase, the researcher used direct observation to record incidents of the three target behaviors, again using the scatter plot. Target behaviors were tracked for five consecutive days. Monitoring of intervention effectiveness continued the following week; incidents of target behaviors were recorded for three of the five days within the school week.

Design and Data Analysis

The design of the current project was a single-case study. To determine intervention effectiveness, the researcher compared baseline to post-intervention data. Intervention was the independent variable; the number of target behaviors was the dependent variable. Daily frequencies of target behaviors during baseline, intervention, and data-collection periods were visually represented by graphing. The researcher then documented increasing or decreasing frequency trends in target behaviors during the

intervention and maintenance data-collection periods, using an A-B design.

To assess the utility of FBA procedures, the researcher adapted a 5-item questionnaire from Pakenham et al. (2004). Following the end of intervention data collection, the researcher and the one-to-one aide answered the five questions choosing one of four responses in a Likert-scale type format. The questions (and responses) were as follows: (1) Was the time needed to perform FBA procedures worthwhile? (a waste of time, hardly worth the time, worth the time, very worth the time); (2) Were FBA procedures intrusive? (not intrusive, a little intrusive, intrusive, very intrusive); (3) Did you understand the FBA procedures? (not at all, a little bit, understood most, understood all); (4) Would you be willing to use FBA again? (never, sometimes, often, very often); (5) Did you consider the interventions to be effective? (not effective, a little effective, effective, very effective).

CHAPTER FOUR

RESULTS

Baseline Data

Using direct observation, the researcher recorded frequency data over a four-day period for the three target behaviors: noncompliance, disruption, and aggression. Incidents of noncompliance ranged from 10 to 13 incidents per day with a mean of 11.75. Data for incidents of disruption showed a decreasing trend even before intervention. The researcher recorded 18 incidents for the first day of data collection, 17 for the second, and 12 for the third and fourth with an overall mean of 14.75. Aggression was by far the most infrequent target behavior, ranging from 1 to 4 incidents per day with a mean of 3.

Examination of total data (for four days) on the scatter plot (Crone & Horner, 2003) showed a mostly even distribution of target behaviors among the ½ hour intervals comprising the school days. Exceptions to the pattern included lunch period with only 3 incidents over 4 days and physical education period with a total of 15. The mean of total behaviors for the ½ hour periods was 8.64. Total incidents decreased slightly during the last three intervals of the school day with totals of 7, 6, and 5.

Hypothesis Statements

The researcher examined completed ABC forms (Crone & Horner, 2003) for the four days of direct observation, searching for evidence of antecedent and consequence patterns. Tom seemed to engage in challenging behaviors when interacting with a variety of staff members, including his teacher, his one-to-one aide, the teaching assistant, and

teachers for special subjects. Also, Tom engaged in challenging behaviors across the entire range of subjects and activities within a typical school day. For noncompliant and disruptive behaviors, the most common antecedents were transitional periods between subjects or activities. Since Tom seemed to be trying to avoid the onset of academic tasks, escape seemed to be the most likely function of these two behaviors. However, Tom was not able to escape academic tasks entirely; the most common consequences for challenging behaviors were reprimands, redirection, and loss of points within the behavior-modification system, and Tom was most often able to complete academic tasks after challenging behaviors subsided. Attention seeking seemed to be a secondary motive, since challenging behaviors also occurred during non academic activities. Aggression seemed to occur most often during unstructured activities, such as physical education or walking in line, most often when Tom was already angry. The most common consequences for aggressive behavior were reprimands and loss of points.

Hypothesis statements for noncompliance and disruption were very similar:

When Tom is directed to begin an academic task, he verbally refuses, puts his head down on his desk, or throws books and papers on the floor to avoid working and to gain attention from the teacher. When Tom is directed to begin an academic task, he calls out, gets out of his seat, bangs his desk, or throws objects to avoid working and to gain attention from the teacher.

The hypothesis statement for aggression included different antecedents and one different consequence: When Tom is angry, engaged in activity during physical education, or walking in line, he bumps staff or peers with his body or furniture or hits peers with objects to express anger and to gain attention from the teacher.

Intervention Design

The researcher designed interventions to primarily deal with noncompliance and disruption during transitional periods. However, since self control and anger control were identified as problem areas in interviews and during direct observation, the researcher (the teacher) decided to institute skill training in these two areas to hopefully help remediate all three target behaviors. The teacher conducted skill training for one week prior to initiating other intervention phases

The researcher secured the assistance of the one-to-one aide to modify several antecedent circumstances. During an interview with the teacher and the aide, Tom agreed that his behavior needed improvement and seemed highly interested in intervention details. Each morning, the one-to-one aide prepared a visual organizer for each day's schedule to be taped onto Tom's desk, using symbols to represent activities, so Tom would know what to expect. Before each transitional period, the one-to-one aide previewed the next activity and allowed extra time for Tom to finish the current activity and prepare for the next. Transitional times included brief walks in the hallway for Tom and the aide when Tom seemed particularly agitated.

The teacher instituted a plan for reinforcement of positive behaviors. On the first day of intervention, the teacher gave Tom a piece of candy and a sticker to be placed on a chart for each transitional period without noncompliance, disruption, or aggression. At the end of each day, each sticker was redeemed for five minutes of play time with a favorite toy tuck during the free-time period. (Often, in the past, the teacher had denied Tom access to the truck because of his challenging behaviors.) On the second day, the teacher gave candy only three times but continued giving stickers. However, the teacher

also removed stickers during incidents of challenging behavior. By the third day, the teacher gave candy only once at the end of each day that showed improvement but continued the schedule for dispensing or removing stickers during transitional periods.

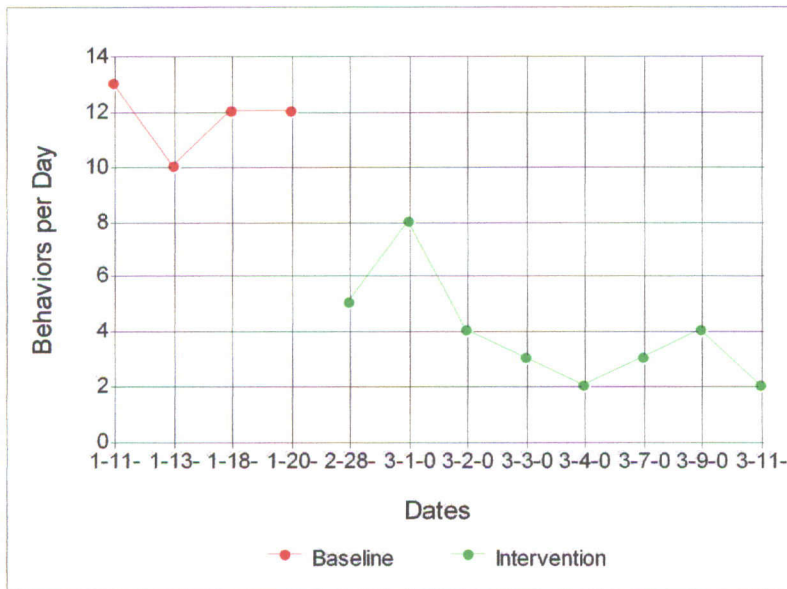
Concurrent with the sticker plan, the teacher drafted a behavior contract, signed by Tom and himself. For three consecutive days of improved behavior, Tom would receive a Matchbox car. Criteria for improved behavior were less than ten observed challenging behaviors per day. Following fulfillment of the first contract, the term was increased to five consecutive days with less than eight incidents of challenging behaviors. However, the teacher did not inform Tom of the exact criteria for behavior count for two reasons: The teacher did not want Tom to be aware of when data was collected, and the teacher did not want Tom to stop engaging in improved behavior after achieving the minimum requirements.

Intervention Results

Following the first day of intervention, frequency counts of challenging behaviors showed immediate reduction from baseline data. As candy was reduced and stickers were removed, Tom's challenging behaviors increased somewhat during the second day. However, results for the remaining three days of intervention data collection showed a decreasing trend.

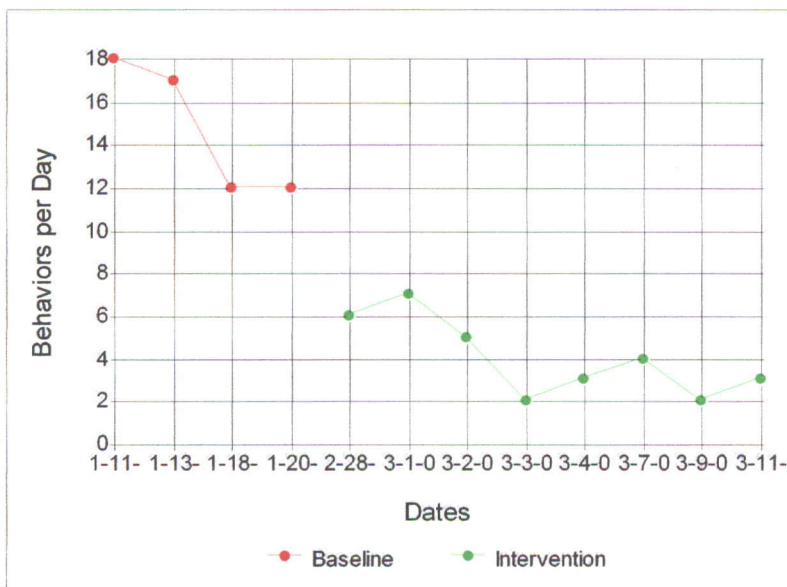
The researcher recorded 5 incidents of noncompliance (baseline mean, 11.75) during the first day of intervention (See Figure 1). For day two, incidents increased to 8. On day three, the researcher recorded 4 incidents, 3 on day four, and 2 on day five.

Figure 1. Frequency of target-behavior noncompliance



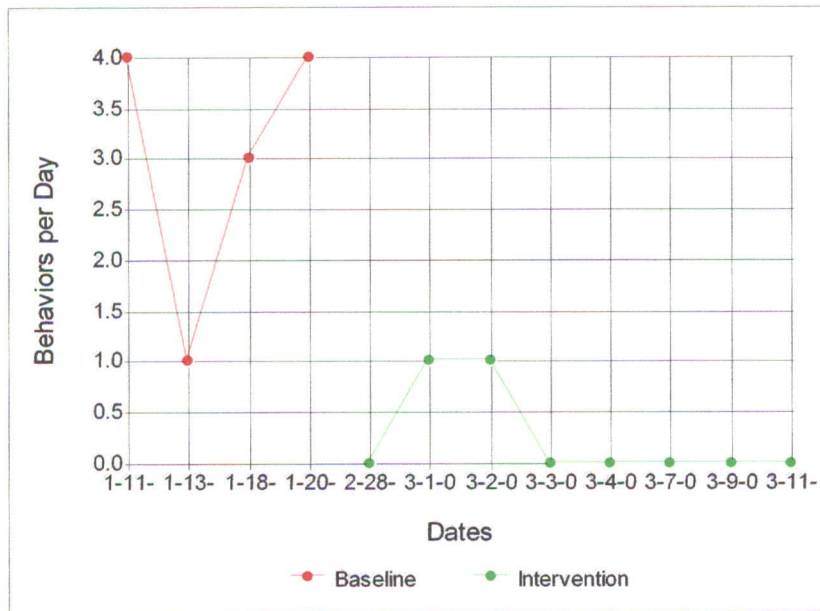
Data for incidents of disruption (baseline mean, 14.75) showed a similar trend (See Figure 2). The recorded total of 6 for day one increased to 7 for day two. For days three, four, and five, totals decreased to 5, 3, and 2 consecutively.

Figure 2. Frequency of target-behavior disruption



Aggression totals (baseline mean, 3) increased from 0 for day one to 1 for day two (See Figure 3). The researcher recorded 1 incident on day three and 0 incidents on days four and five.

Figure 3. Frequency of target-behavior aggression



Frequency counts during three days of monitoring the following week were consistent with the last three days of initial intervention-data collection (See Figures 1, 2, and 3). For day one of monitoring, the researcher recorded 3 incidents of noncompliance, 4 incidents of disruption, and 0 incidents of aggression. Day two yielded 4 incidents of noncompliance, 2 incidents of disruption, and 0 incidents of aggression. For day three of monitoring, the researcher recorded 2 incidents of noncompliance, 3 incidents of disruption, and 0 incidents of aggression.

By the end of the initial intervention week, Tom fulfilled his first behavioral contract and fulfilled his second by the end of the second week. The intervention plan continued beyond the data recording periods with continued data collection toward

monitoring of behavior contracts.

The researcher's and the one-to one aide's responses to the questionnaire regarding FBA utility were similar. The researcher considered FBA to be very worth the time while the aide considered it to be worth the time. Both the researcher and the aide found FBA to be a little intrusive. The researcher reported that he understood most of the FBA procedures, and the aide reported that he understood FBA a little bit. The researcher indicated that he would be willing to use FBA very often in the future, while the aide indicated he would be willing to use it often. Both the researcher and the aide rated the FBA interventions as very effective.

CHAPTER FIVE

DISCUSSION AND CONCLUSIONS

There were three main findings of interest. First, the results of the study and the experience of the researcher indicated that FBA was a valuable tool to address the subject student's challenging behaviors. Second, the teacher found he and support staff were able to practically utilize FBA within the normal classroom environment. Third, the intervention plan based on FBA did result in positive behavioral change. In this section I will discuss these findings, present limitations of the study, and describe recommendations for further research.

Summary of the Findings

The challenging behaviors of individual students often persist in spite of behavioral-modification plans that may work for the majority of students within an environment (Zuna & McDougall, 2004). Thus was the case for Tom, whose challenging behaviors had been the subject of failed behavioral interventions throughout his brief academic career, including his tenure in the researcher's classroom from September to the start of FBA based interventions in February. Prior to this study, the researcher had tried various behavioral interventions to address Tom's behaviors but had never attempted FBA for any student.

The researcher found his initial use of FBA procedures and tools to be valuable because they addressed Tom's specific problems, their frequency, and the environments wherein they occurred. Interviews, anecdotal observations, and the record search painted

a broad picture of Tom's behavioral history and began to reveal his behavioral patterns. The scatter plot was particularly valuable because the researcher was able to easily view the frequency of target behaviors for ½ hour periods, whole days, and the sums of data-collection days. With the ABC form, the researcher was able to record specific antecedents and consequences, and review of this data led to further understanding of behavioral patterns. Analysis of the FBA data-collection tools allowed the researcher to formulate reasonable hypotheses regarding behavior, which were the basis of interventions tailored to the specific circumstances of Tom's challenging behaviors.

Results indicate that FBA procedures were applicable to the characteristics of the subject student. Although Tom was very young (6), he was able to grasp the purpose of the interventions and the details of the intervention plan. Part of the reason for the intervention's success was Tom's enthusiastic participation. Although the behaviors of ED students can be hard to predict and difficult to manage (Haring, McCormick, & Haring, 1994), intervention based on FBA resulted in immediate reduction of target behaviors.

Results also indicate that FBA data collection and interventions worked well within the self-contained classroom setting. The small student-to-staff ratio (8 to 4) allowed the teacher and aides to devote the individual attention to Tom needed to collect data and implement interventions, and fellow students were largely supportive of Tom's efforts to improve his behaviors. Applying FBA to the challenging behaviors of more than one student simultaneously would have compounded amounts of time and energy required, and applying FBA to students in a setting with more students and less staff, such as a general-education classroom may have been more difficult

Responses to the questionnaire regarding utility of FBA support the practicality of using FBA in the classroom environment. Although both the researcher and the aide rated FBA procedures as a little intrusive, this study was the initial use of FBA for both respondents, and it is likely that FBA would be considered less intrusive with continued use. The aide reported that he understood FBA only a little bit, but his only training in FBA was direction from the researcher. The researcher indicated that he would be willing to use FBA very often in the future because of the success of the FBA interventions.

Positive behavioral change was immediately evident following implementation of interventions. Target behaviors decreased dramatically from baseline on the first day, increased somewhat on the second, then continued to decrease thereafter. Incidents of target behaviors were infrequent at the end of the data-collection week and remained so throughout the following week.

The researcher attributes Tom's positive behavioral change to the nature of FBA; using the FBA tools, the researcher was able to specifically address the causes and consequences of target behaviors instead of relying on the school-wide behavioral modification plan or personal opinions. Because of the success of interventions, Tom has also been able to succeed within the school-wide plan and enjoy its rewards. Smooth transitions between subjects have increased Tom's academic time-on-task and have allowed the teacher to devote more attention to academic concerns for the whole class. Informal observations indicate that the quality of Tom's interpersonal relationships with staff and peers has improved as well.

Limitations

A limitation of this study was having the researcher also serve as teacher. As

teacher, the researcher had a prior interest in the success of interventions. In spite of attempts to eliminate bias, data collection and analysis may have benefited from the researcher having a more detached point of view. Also, the study may have benefited from data being collected by more than one person, other than the initial interviews.

Another limitation of this study was lack of applying the step of functional analysis. Because FBA was conducted within the working classroom, conducting functional analysis under experimental conditions was impossible. Without prior hypothesis testing, the researcher was fortunate to be able to design successful interventions on the first attempt.

The study may also have benefited from longer periods of data collection. More than four days of baseline data-collection may have resulted in more reliable data. Longer periods of intervention maintenance data-collection would have tested the continued effectiveness of interventions.

A final limitation was the inability to test the generalization of Tom's positive behavioral change in different environments. FBA was conducted within the tightly controlled environment of the self-contained classroom. Because of the high staff-to-student ratio (4 to 8), it was possible to devote a great deal of attention to Tom's interventions. It would have been interesting to see if Tom would have been as successful in environments where he was allowed to act more independently.

Recommendations for Future Study

Because of continued high-interest in FBA among educators, more study may be needed to test the effectiveness of FBA to address the challenging behaviors of diverse students in various environments. Future studies may select subjects from the full range

of disability classes as well as from the general-education population. Since students with disabilities are more often placed in general-education classrooms, more studies featuring general-education teachers conducting FBA within their classrooms would be very informative.

More studies that test the long-term effectiveness of FBA-based interventions would also be valuable. Since FBA literature and legislation (Gable, et. al., 1998; Dieterich et al., 2003) recommend that interventions should be tested periodically, it would be interesting to read more studies on how intervention plans are maintained, tested, modified, or replaced over time.

A key component of this study was to test the ability of the teacher to independently perform FBA. Because teachers are most familiar with subject students and would benefit greatly from positive behavioral changes, more studies are needed that directly involve teachers in FBA procedures. Perhaps future studies could lead to development of a widely-accepted model that teachers could use to conduct FBA in diverse settings.

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