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The use of direct observation in functional behavior assessment

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THE USE OF DIRECT OBSERVATION IN FUNCTIONAL BEHAVIOR ASSESSMENT

An Abstract of a Thesis

Submitted

in Partial Fulfillment

of the Requirements for the Degree

Education Specialist

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ABSTRACT

The present study is an investigation into the use of observational strategies as they apply to functional behavior assessment. In addition to highlighting the key observational methods, practical issues that affect the development of an observational instrument are discussed. Furthermore, the factors that influence the reliability and validity of an observation session are discussed. Suggestions are provided for practitioners who are observing the instructional, social, and physical factors that may influence a student's behavior within the classroom. Finally, this study will demonstrate how assessment knowledge, which is gained through direct observation, can be tied to effective classroom interventions.

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CHAPTER 1

INTRODUCTION TO RESEARCH

This chapter will briefly define functional behavior assessment, and it will emphasize the direct methods of data gathering that are necessary for this process. Research regarding multiple types of observation, factors that may influence an observation, and the technical properties of direct observation will be considered. Finally, this chapter will focus on linking observational assessment data to the development of interventions based on important instructional, social, and physical factors.

Functional Behavior Assessment

Functional behavior assessment is the systematic process in which informed hypotheses about the internal (personal) and external (environmental) events that may predict or maintain problem behavior are developed and used to implement empirically validated interventions (Horner & Carr, 1997). The 1997 Amendments to the Individuals with Disabilities Education Act mandates functional behavior assessments for children with problem behaviors. This includes children whose problem behaviors may result in expulsion and for the development of positive behavior interventions. However, IDEA has not specifically stated how a functional behavior assessment must be conducted or how to connect functional assessment data to effective interventions (IDEA, 1997).

When conducting a functional behavior assessment, information is gathered through indirect and direct methods of data collection. This information must then be used to develop hypotheses about the function of the behavior and implement

interventions within the classroom (Horner & Carr, 1997). The following paragraphs will provide a brief overview about how data is gathered for functional behavior assessments through both indirect and direct methods.

Indirect Methods of Data Collection

Large amounts of research have been conducted about how to carry out a functional behavior assessment. Many experts state that information must be gathered from a variety of sources. For example, information can be gathered through indirect methods such as interviewing parents, teachers, and the student (Horner & Carr, 1997; O'Neill et al., 1997; Salvia & Ysseldyke, 2004). The primary goal of the interview is to operationally define the problem behavior, and the data gathered can be used to focus the information examined by more direct methods, such as observations (Horner & Carr).

Direct Methods of Data Collection

Direct methods of data collection, such as observation, provide more specific information about the contexts and antecedents that accompany a problem behavior, the intensity and duration of the behavior, and what consequences occur after behavior (Horner & Carr, 1997). Observations are essential to gathering the data needed to a confirm hypothesis and implement interventions that result from a functional behavior assessment. Direct observation methods include both naturalistic and systematic procedures. Naturalistic observations consist of recording the child's behavior in their natural setting as it occurs (Hintze, Volpe, & Shapiro, 2002). Systematic direct observation uses standardized procedures to observe, record, score, and report the

behavior that is observed (Salvia & Ysseldyke, 2004). Each of these types of observation must be evaluated in more depth.

Naturalistic Observation Procedures.

Naturalistic observations involve the recording of student behavior as it occurs in a natural setting. These observations can aid in the development of target behavior definitions and hypotheses about the function and maintaining stimuli of the target behavior (O'Neill et al., 1997). Naturalistic observations can occur in the form of anecdotal recordings about the behavior and the physical makeup of the classroom, or naturalistic observations can be recorded using the antecedent-behavior-consequence (ABC) method (Bijou, Peterson, & Ault, 1968; Hintze et al., 2002). Each ABC observation identifies and records the circumstances that were antecedent to the problem behavior and the consequences of that behavior so that hypotheses about why the problem behavior is occurring can be explored (Hintze et al.).

Systematic Observation Procedures.

Systematic direct observation methods include frequency recording, duration recording, latency recording, and time sampling procedures. Each of these methods of systematic observation differs in how they are conducted and how they are used.

Frequency recording. Frequency, or event recordings, can be used to tally the number of times the target behavior occurs during the observation. Salvia and Ysseldyke (2004) suggest that frequency recordings are most effective when the behavior does not extend over a long period of time and has clearly identifiable beginnings and endings.

Frequency recordings can be very valuable because they can show changes in the amount of behavior displayed over both short and long observation sessions (Bijou et al., 1968).

Duration recording. Duration recordings measure the total amount of time that a behavior occurs during the observation period (McConaughy & Ritter, 2002). This type of observation is only useful when the behavior has a clear beginning and ending (Hintze et al., 2002). When using duration recording, the observer can find the average amount of time that each behavior lasted, or the total amount of time that a student engages in the problem behavior during the observation period can be easily calculated (Hintze et al.; Salvia & Ysseldyke, 2004).

Latency recording. Latency recordings measure the elapsed time between the onset of a stimulus and the beginning of a specified behavior (Hintze et al., 2002). Like duration recordings, latency recordings can be used when the behavior has a clear beginning and ending. Latency recordings allow the observer to examine the length of time between an opportunity to elicit a behavior and the initiation of the target behavior (Hintze et al.).

Time sampling. Perhaps the most familiar methods of conducting systematic direct observations include time sampling procedures. Such time sampling methods record whether the target behavior is present or absent during short, specified intervals within the observation period (McConaughy & Ritter, 2002). Time sampling measures can be divided into partial interval, whole interval, and momentary time sampling methods (Repp, Nieminen, Olinger, & Brusca, 1988). Partial interval methods code whether or not the target behavior occurred at least once within the specified interval

(Hintze et al., 2002). In whole interval recording, an observer indicates whether or not the target behavior occurred throughout the entire observation interval (Hintze et al.). Finally, momentary time sampling methods record whether or not the behavior occurred at the moment that the observation interval ended (Hintze et al.).

Factors to Consider Prior to Observation

Practical considerations that must be made prior to conducting an observation include the following: prioritizing and selecting the problem behavior, defining the target behavior, determining the sample size, number of observations, time of the observation, number and length of the observation intervals, continuous or noncontinuous recording, and the availability of the teacher. Some of these factors will be briefly discussed.

Selecting and Defining Behaviors

Usually, all behaviors of concern cannot be observed at once due to cost and time constraints. Therefore, the target behavior will have to be carefully selected and defined in objective, measurable terms. Nelson and Hayes (1979) suggest that the behavior that is of greatest concern to the person who identified the problem, that is flexible to change, and that could produce a positive generalization of response be targeted for observation.

Time of Observations

Observations should be conducted when and where the target behavior is most likely to occur (McConaughy & Ritter, 2002). Since student behavior can vary from day to day, it has been suggested that several short (ten to twenty minutes) observations be conducted over several days instead of a longer, one time observation (McConaughy &

Ritter). This practice will increase the likelihood of the target behavior actually being observed.

Continuous and Noncontinuous Recording

The observer must also decide if continuous or noncontinuous recording will be used. When using continuous recording, the observer records the data from the previous interval at the beginning of the second interval (McConaughy & Ritter, 2002). On the other hand, noncontinuous recording provides small intervals during which the observer can record data in between two separate observation intervals. This extra recording interval acts as a control so that the reliability of the observation is not threatened while the observer looks away during an observation interval to record data (Bijou et al., 1968).

Technical Properties of Observation

Just as in other forms of assessment, reliability and validity are important to the usefulness and accuracy of observations. Several factors can pose a threat to the quality of observations. Consideration will be given to several potential sources of error and steps that can be taken to minimize these threats.

Reliability

Interrater reliability, or the amount of agreement of behavior recorded by multiple observers, can be calculated by dividing the number of agreements by the number of agreements plus disagreements (Bijou et al., 1968). Reliability in observations may be affected by the comprehensiveness and specificity of the definitions used in the observational code, the training of the observers, the number of observation intervals, or the method that is used to calculate reliability (Bijou et al.).

Validity

Validity is the degree to which an observational instrument measures what it claims to measure (McKenzie, 1991). Like reliability, validity can be threatened by several sources (Repp et al., 1988). These threats include observer reactivity and observer expectancy.

Observer reactivity. One potential source of error is observer reactivity (McConaughy & Ritter, 2002). When a child knows that they are being observed behavior can increase, decrease, vary more, or not be significantly affected at all (Repp et al., 1988). In order to reduce the threat of observer reactivity, the observer should remain as inconspicuous as possible, do multiple observations, and observe the student before interviewing them (McConaughy & Ritter).

Observer expectancy. Another source of error can be found in observer expectancy (Repp et al., 1988). Prior to collecting any data in the classroom, observers may know several things about the student that they are going to observe. An observer may know the child's gender, the typical behavior of the child's peers, and what the behavior of concern is. Even when the observer is well trained, such prior knowledge can unconsciously cause the observer to hold expectations about the child's behavior and the function that it is serving (Repp et al.).

Use of Observations with Interviews

Direct observation continues to be a widely used source of data collection because it provides several unique benefits that other assessment measures do not. When

conducting a functional behavior assessment, the data gathered through direct methods should be used in conjunction with data gathered through indirect methods.

Advantages of Observation

Some argue that direct observation is both time consuming and expensive (Fox, Gunter, Davis, & Brall, 2000). However, observations offer many advantages that other forms of assessment do not. For instance, observations can continue to be used to assess the effectiveness of the interventions that are put into place as a result of the functional behavior assessment (Fox et al.). Observations are also flexible and can be conducted to meet the specific needs of each unique assessment situation (Hintze et al., 2002).

Observation and Interviews

Observations should not be the sole source of data collection. Parent, teacher, and student interviews should always accompany observations as a necessary source of information. Baker and Hubbard (2002) suggest that observations should be conducted after the teacher and parent interviews so that the problem behavior can be clearly defined, and observations should be conducted right before the student interview so that the observer can maintain the validity of the observation and minimize the risk of observer reactivity (Baker & Hubbard).

The Link to Intervention

Ysseldyke and Christenson state that learning does not occur in a vacuum (1996). Therefore, when conducting an observation for a functional behavior assessment, instructional, social, and physical factors should be examined.

Instructional Variables

Instructional variables may include the following: the use of time devoted to academic activities, realistic and high expectations and standards for academics, sufficient content coverage, lesson presentation, practice of skills presented, application of skills presented, review of information presented, efficient and well-established instructional organization and routines, prompting students for answers, clearly communicated goals, re-explaining of tasks, student attention and redirection during instruction, error correction procedures, pacing of teaching, active monitoring of seatwork, and alignment between academic goals, what is taught, and what is assessed (Ysseldyke & Christenson, 1996).

Social Variables

Social factors that may influence student outcomes consist of teacher-initiated interaction with the student, peer-initiated interaction with the student, eye contact maintained between teacher and student or peers and student, and the classroom climate (Ysseldyke & Christenson, 1996).

Physical Variables

Finally, physical factors that must be examined may include: teacher to student ratio, class size, use of discipline within the classroom, cooperativeness and collaboration between members of the class, degree of structure, clarity of class rules and procedures, physical space and arrangement of the room, classroom management, motivational strategies used, specific praise offered, verbal and nonverbal signals used to redirect students, organization of the classroom, access to needed materials, options for activities

after work is completed, short and well-organized transitions, and warnings or notifications of transitions (Ysseldyke & Christenson, 1996).

Conclusions of Functional Behavior Assessment

Functional behavior assessments shift the focus off of the child and onto the environment. The problem behaviors are not seen as something negative "within" the child. Rather, these behaviors are seen as the results of challenging environmental events (Horner & Carr, 1997). Therefore, the interventions that are arrived at through the process of the functional behavior assessment do not emphasize "managing" or "controlling" the student. Instead, these interventions seek to change the environmental factors that initiate or maintain the behavior and provide students with skills that will be effective tools for handling the new environment (Horner & Carr). However, no research has been conducted to determine how the information gathered through observations can be tied specifically to such interventions.

Statement of the Problem

An extensive amount of research has demonstrated how to conduct observations for use in functional behavior assessments. However, no research has verified how the data gathered through the observation can be tied to the empirical interventions that result from functional behavior assessment. With the increasing use of functional behavior assessments, a model that will demonstrate to practitioners how to connect the observation data to the interventions implemented within the classroom must be developed, empirically tested, and validated.

Research Question to be Investigated

The present review of research will result in the development of an observational system designed for the use of conducting functional behavior assessments within the school setting. This observation system will then be tested in the school setting to determine whether or not the data collected can be tied to development and implementation of empirically based interventions. A case study will be conducted to address the following research question: Will this new model of observation and functional behavior assessment effectively link assessment data to research-based interventions?

Theoretical Framework

The theoretical framework for this study is based primarily on the assessment model that was proposed by Iwata, Dorsey, Slifer, Bauman, and Richman (1982). Iwata et al. considered Carr's (1977) analysis of individual maintaining conditions for deviant behavior and then used the assessment of behavior function as a means to identify environmental variables that may be associated with self-injurious behavior. The relationships between the rate of problem behavior and antecedent and consequent variables may be used to develop hypotheses about the possible functions that a behavior may serve (Iwata, Vollmer, & Zarcone, 1990). The conceptual model for functional behavior assessment has developed out of a variation of the analogue assessment procedure of Iwata et al (1982). In this variation, assessment data is collected in the normal school settings of students rather than clinical representations (Kern, Childs, Dunlap, Clark, & Falk, 1994; Lalli, Browder, Mace, & Brown, 1993).

Rationale for the Study

Previous research has left an obvious disconnect between conducting observations in the classroom and applying the information gathered to intervention practices. This study will help practitioners to fill the gap between observations and interventions so that they can conduct functional behavior assessments more effectively in the school setting.

Limitations of the Study

The testing of the observational recording form developed through this research will be limited by the small sample of students that it can be tested on. Not only will this sample size be small, but it will be a convenience sample consisting of those children that are referred for behavior in the first month of the school year. In addition, the observation system and method of tying data to the interventions will be completely new. Therefore, there is no previous research to support the use of such methods, and the technical properties, such as reliability and validity of the observational system being developed are currently unknown.

Definitions of Terms

Definitions for terms important to this study include:

- Functional Behavior Assessment - the systematic process in which informed hypotheses are developed about the relationships existing between personal or environmental events that may predict or maintain a student's challenging behavior and that will lead to hypothesis-driven interventions (Foster-Johnson & Dunlap, 1993; Horner & Carr, 1997; Nelson, Roberts, Mathur, & Rutherford, 1999). Sugai, Horner, and Sprague (1999) put it simply, "a functional assessment

identifies when, where, and why problem behaviors occur and when, where, and why they do not occur" (p. 254).

- Naturalistic Observation – observation technique that simply records behaviors as they occur in a natural setting (Hintze et al., 2002).
- Systematic Direct Observation - attempt to measure specific behaviors that have been operationally defined using standardized procedures for gathering, scoring, and reporting data in specified times and places (Salvia & Ysseldyke, 2004).
- ABC Recording – observation system that identifies the circumstances that were antecedent (precursors) to the problem behavior and the consequences (results) of that behavior (Foster-Johnson & Dunlap, 1993).
- Frequency Recording- also called event recording, a tally of the number of times the behavior occurs (Fox et al., 2000).
- Latency Recording - measures the elapsed time between the onset of a stimulus and the beginning of a specified behavior (Hintze et al., 2002).
- Duration Recording - measures the total amount of time that a behavior occurs during the observation period (McConaughy & Ritter, 2002).
- Time Sampling - methods used to record whether the target behavior is present or absent during short, specific intervals within the observation period (McConaughy & Ritter, 2002; Saudargas & Zanolli, 1990).
- Whole Interval Recording – a time sampling technique that allows the observer to record whether or not the target behavior occurred throughout the entire interval observed (Van Acker, Grant, & Getty, 1991).

- Partial Interval Recording – a time sampling technique that allows the observer to code whether or not the target behavior occurred at least one time within the specified interval (Saudargas & Zanolli, 1990; Van Acker et al., 1991).
- Momentary Time Sampling – a time sampling technique that allows the observer to record whether or not the behavior occurred at the moment that the observation interval ended (Saudargas & Zanolli, 1990; Van Acker et al., 1991).

Summary of Chapter 1

Functional behavior assessment requires that information is gathered from a variety of sources. One of these key sources is observation. Observations can be either naturalistic or systematic. Each specific method of collecting data from these observational systems has unique strengths and weaknesses. Therefore, the decision about which method to use is not an easy one. In addition, observers must consider the potential sources of error that may distort the information that is gathered. However, there has been no research conducted about how to tie observational data to effective interventions. This study will define instructional, social, and physical variables that must be observed and provide guidelines for how to connect this information to empirically validated interventions.

CHAPTER 2

LITERATURE REVIEW

Functional behavior assessments are conducted to determine the function, or purpose and usefulness, of a student's problem behavior. It is argued that functional behavior assessments logically lead to effective interventions. However, little research has been done to examine how assessment information can be directly linked to interventions. This link between assessment data and intervention implementation is critical in developing effective interventions that specifically align with the data, accurately address the function of the behavior, and target the key behavioral antecedents and consequences that initiate and maintain the problem behavior. Prior to examining such a link, this chapter will review the literature regarding what a functional behavior assessment is, why this type of assessment is done, and how the assessment data is collected. Following this review, specific observation procedures that are used to gather data throughout the functional behavior assessment will be fully explored.

Functional Behavior Assessment

Functional behavior assessment is the systematic process in which informed hypotheses are developed about the relationships between environmental events and a student's challenging behavior (Foster-Johnson & Dunlap, 1993). This process includes identifying both internal (personal) and external (environmental) events that may predict or maintain the target behavior (Horner & Carr, 1997; Nelson et al., 1999). Functional behavior assessment leads to hypothesis-driven interventions, emphasizes skill building instead of punishment, and increases the prospect of positive intervention results, as well

as, the maintenance and generalization of the intervention outcomes (Blakeslee, Sugai, & Gruba, 1994; Nelson et al.). Sugai, Horner, and Sprague (1999) put it simply, "a functional assessment identifies when, where, and why problem behaviors occur and when, where, and why they do not occur" (p. 254).

When properly conducted, functional behavior assessments can reveal large amounts of information about problem behaviors that have been unresponsive to the usual general education interventions and continue to occur in a high intensity (Sugai, Lewis-Palmer, & Hagan, 1998). Typically, a functional assessment results in a clear and complete description of the problem behavior, a thorough recognition of what variables will most likely predict when the problem behavior will or will not occur, and an understanding of what function the problem behavior serves for the student. In addition, a functional behavior assessment provides direct and indirect data that coincide with the hypotheses, which summarize the problem behavior, the variables under which the behavior occurs, and the consequences that maintain the behavior. It is important to note that functional behavior assessments were not designed to result in decisions about special education eligibility, special education placement, or manifest determination (Sugai et al., 1998).

The study of functional behavior assessments rests on several assumptions. The first of these assumptions is that both challenging and desirable behaviors are related to the context in which they occur. In other words, behavior is influenced by the consequences that follow it. If a behavior is rewarded, then it will be more likely to occur again, and if a behavior is punished, it will be less likely to occur again (Foster-

Johnson & Dunlap, 1993). A second important assumption is that difficult behavior is functional for the student. Although students may not be able to verbalize a reason for their actions, their behaviors enable them to achieve something that is desirable. For example, a student may throw their chair to get attention from the teacher or to escape performing an undesirable task. Therefore, one of the goals of functional behavior assessment is to provide the student with alternative, appropriate behaviors that will serve the same function. Instead of throwing a chair to get out of a math assignment, a student may be allowed to take breaks during math when needed (Foster-Johnson & Dunlap). A third assumption is that functional behavior assessments will lead to more effective interventions. If the interventions match the function of the challenging behavior, then they will be more effective (Gable, 1996; Nelson et al., 1999).

Why Functional Behavior Assessments Are Conducted

Some argue that conducting a functional behavior assessment is too time consuming to be useful or to provide immediate relief for extreme behaviors that must change. Why then are functional behavior assessments conducted? Perhaps, the greatest reason is because such assessments are legally required. The 1997 Amendments to the Individuals with Disabilities Education Act state that schools must conduct a functional behavior assessment and develop positive behavior intervention plans when students with disabilities have behavioral problems. Functional behavior assessments must also be conducted when a student is suspended or assigned a new educational placement because of problem behaviors that interfere with learning (Asmus, Vollmer, Borrero, 2002; IDEA, 1997; Nelson et al., 1999; Sugai et al., 1998).

In addition to the legal requirements for this type of assessment, functional behavior assessments can be an effective means to promote inclusion for children with severe disabilities. Aggressive, destructive, and disruptive behaviors have often led to exclusion of these students. Unless effective behavioral support plans can be implemented, these children will become increasingly more isolated from the school and the community as a whole. As functional behavior assessments lead to more effective interventions that match the function of the challenging behavior, children with severe disabilities will be included with their peers (Horner & Carr, 1997).

Yet another reason to conduct a functional behavior assessment is to develop more effective and efficient assessment-based interventions. Since functional behavior assessments provide a clear understanding of what variables support the problem behavior, one can use the data gathered to identify methods to prevent the challenging behavior and handle it appropriately when it does occur. Ultimately, this should enable one to develop more effective interventions (Harrower, Fox, Dunlap, & Kincaid, 1999; Horner & Carr, 1997).

Data Gathering in Functional Behavior Assessment

Prior to examining the steps of the functional behavior assessment process, it should be understood that this assessment and intervention process should be done collaboratively by a team of teachers, parents, support staff, and the student. Research demonstrates that collaborative efforts have resulted in interventions that are practical and reasonable (Kern et al., 1994; Umbreit, 1995). By including teachers and parents in the assessment process, interventions that teachers are capable of and willing to

implement are collectively decided upon. Furthermore, when teachers are involved in the assessment process, they are more likely to continue to implement the interventions long-term, and they report being happy with the intervention results overall (Kern et al.; Umbreit).

Once this collaborative team has been established, the assessment process can begin. The first phase of the functional assessment is gathering information. To begin, the target behavior must be identified and defined. This definition must be observable and measurable. The information that is gathered must identify the circumstances during which the target behavior is most likely and least likely to occur and it should determine the functions that the target behavior may serve for the student (Foster-Johnson & Dunlap, 1993). This information should come from a variety of sources. Multiple sources provide a more accurate and comprehensive picture of the information through a process called data triangulation. Data triangulation involves critically comparing many pieces of information that have been gathered from many different sources and contexts. Such a review allows patterns to be seen and provides convergent evidence that certain variables, or situational conditions, are in fact encouraging the problem behavior (Gable, 1996).

Data can be collected through either indirect or direct methods. One indirect method of data gathering is interviewing (Gable, 1996; Nelson et al., 1999). It is important to interview the people who have the most knowledge about the child and the target behavior. Within the school setting, it is essential to interview both parents and teachers (Harrower et al., 1999). In addition, students themselves can be valuable

sources of information (Sugai et al., 1998). During the interview, the parent or teacher should provide a physical description of the challenging behavior, the circumstances that predict the presence or absence of the behavior, and the reaction that others provide when the behavior occurs. However, the primary goal of the interview is to operationally define the problem behavior. Interviews are an excellent method for quick review of many cues and social reactions that may relate to the behavior, and the information gathered from indirect methods, such as interviewing, is used to focus, or narrow, the information examined by more direct methods (Horner & Carr). Information gathered from the interview can also be used to start generating hypotheses about the problem behavior and its function (Sterling-Turner, Robinson, & Wilczynzki, 2001). On the other hand, information gathered during an interview is highly subjective, and therefore, this type of information must be considered with caution. Information that is gathered in indirect ways must be supported by information collected through direct methods, such as systematic observations (Horner & Carr).

Direct methods of data collection include observation, scatterplots, time sampling techniques, and antecedent-behavior-consequence (ABC) records (Gable, 1996; Nelson et al., 1999). These methods of data collection differ from indirect methods in that data is gathered directly as the behavior occurs. Whereas indirect methods of data collection rely on another individual's retelling of the behavior. When using direct methods of data collection, the student should be observed in the settings and during the times when the target behavior is likely to occur (Harrower et al., 1999). For example, if a student only throws his chair in the afternoon, then observe him during the afternoon. Such direct

methods of data collection typically provide more detailed information about the antecedents and consequences of the behavior than indirect methods do, and sometimes, new variables, which were not raised during the interview, may arise through direct observation (Horner & Carr, 1997).

The second phase of functional assessment is developing hypothesis statements. After carefully examining the information that has been gathered through both indirect and direct methods, statements that describe the relationship between the environment and behaviors can be created. Not only should these hypotheses be based on the data gathered in the first phase, but they should be specific, testable, and worded so that the environment can be manipulated to result in behavior change (Foster-Johnson & Dunlap, 1993). These hypothesis statements also indicate what functionally equivalent skill the student will need to learn to replace the target behavior. More specifically, the goal of these hypotheses is to state how the environment should be changed so that the problem behavior is needless and unsuccessful (Harrower et al., 1999).

Finally, these hypothesis statements should logically lead to interventions. These interventions should be effective and positive because they are based on an accurate understanding of the relationship between the target behavior and the environmental characteristics that initiate and maintain the challenging behavior (Foster-Johnson & Dunlap, 1993). The behavioral support intervention that is developed must be implemented so that each problem behavior is replaced with a functionally equivalent and appropriate behavior. During the intervention phase, students receive the same consequence for the appropriate behavior that they had previously received for the

problem behavior. If this is not possible, then the consequence that is received for the appropriate behavior must be stronger than the consequence that is typically received for the problem behavior. In addition, the positive behavior must easily obtain the desired consequence so that the inappropriate behavior is no longer efficient or effective for the student. To complete this intervention process, the environment must change along with the behavior. Since the environment had been providing consequences that were reinforcing and maintaining the problem behavior, the environment must now be changed so that it increases the likelihood of the appropriate behavior occurring and decreases the likelihood of the problem behavior reappearing (Repp, 1999).

Linking Assessment to Intervention

Current research has just begun to scratch the surface of the functional behavior assessment process, and further research is needed. It has been stated that, "the fundamental purpose of a FA (functional assessment) is to generate information that improves the effectiveness and efficiency of behavioral interventions" (Sugai et al., 1999, p. 254). However, no research has been done on how to effectively link the information gained through the functional behavior assessment to positive behavioral interventions. It has been empirically demonstrated that effective interventions have in specific situations resulted from a functional assessment (Harrower et al., 1999; Kern et al., 1994; Umbreit, 1995), but there is no clear procedure for transitioning from assessment information, specifically that gathered through observations, to effective interventions (Horner & Carr, 1997). For functional behavior assessments to be valuable, research must demonstrate how to tie assessment information to interventions that result in the desired change.

Observation in Functional Behavior Assessments

Observations are one of the primary means of gathering data for a functional behavior assessment. Observations are used frequently because they provide several benefits that indirect methods of assessment, such as interviewing, cannot. When conducted in a natural setting, observations provide a clear picture of the antecedents and consequences that initiate and maintain problem behavior.

Benefits of Direct Observation

Wilson and Reschly (1996) found that direct observation is the most widely used method of assessment for school psychologists. In fact, school psychologists reported that they conduct on average 10.30 observations of student behavior each month (Wilson & Reschly). Direct methods of data collection are used so frequently because they typically provide more detailed information about the antecedents and consequences of the behavior than indirect methods do. New variables, which were not raised during the interview, may arise through direct observation. Observations can also provide information about the stimuli that trigger a behavior, the intensity, duration, and frequency of the problem behavior, and the consequences that follow the behavior (Horner & Carr, 1997). Furthermore, the information gathered through observations can be used to generate hypotheses about instructional and environmental factors that may be affecting learning and assist in developing interventions that target specific aspects of teacher-led instruction (Baker & Hubbard, 2002). Practitioners must remember that conducting quality observations is a difficult, complex skill to learn that requires

extensive training and practice, but the benefits of conducting observations are well worth the effort (Knoff, 2002).

Observational Setting

Structured observations may occur in natural or clinical settings. Clinical situations can be used to resemble environments where the child's behavior is likely to occur (Knoff, 2002). While clinical settings allow for control of the environment and manipulation of variables, these unnatural settings also inhibit a child's display of competence (Pellegrini, 2001). For example, when administering an intelligence test in a clinical setting, a school psychologist has the unique opportunity to work one-on-one with a child who they would not otherwise have regular involvement with (Reschly & Grimes, 2002). An informed practitioner will remember that observation information gathered during these unnatural activities do not necessarily generalize to behavior in other settings (Reschly & Grimes).

Observations that occur in natural environments like the classroom or playground are more useful than clinical observations because they allow for comparison of the target behavior to instructional, social, and physical factors that may be modified for an effective intervention (Reschly & Grimes, 2002). Horner and Carr (1997) believe that observations should be conducted in natural settings so that the antecedent stimuli and natural consequences of the target behavior can be more accurately understood. It is generally more practical to conduct an observation in the natural setting than it is to create a clinical setting in which to control variables and observe. The later would be too expensive and time consuming for schools to use.

Types of Observation

When gathering direct assessment information for functional behavior assessment, practitioners must focus their observations on natural settings. This can be done through two different methods of observation: naturalistic observation and systematic direct observation. Naturalistic observation procedures involve the recording of the target behaviors as they occur in their natural setting at the time when they occur (Hintze et al., 2002). Whereas systematic direct observations are conducted using standardized procedures in specified times and places in order to quantitatively measure specific behaviors that have been operationally defined (Salvia & Ysseldyke, 2004; Shapiro, 1996). Both naturalistic and systematic direct observation procedures will be discussed in further detail.

Naturalistic Observation Procedures

Naturalistic observation procedures involve the recording of the target behaviors as they occur in their natural setting at the time when they occur (Hintze et al., 2002). Wilson and Reschly (1996) found that naturalistic observations are the most frequently used observation systems. In fact, naturalistic observations were used twice as often as systematic direct observation approaches. The following section will discuss why naturalistic observation methods are used so frequently, two specific methods through which naturalistic observations are conducted, and the advantages and disadvantages of naturalistic observation procedures.

Reasons for use of naturalistic observation. Naturalistic observation techniques are used frequently because of their applicability to functional behavior assessments

(Hintze et al., 2002). When conducting a large-scale assessment and developing an intervention plan, one must gather general information before gathering specific information (Elliott, McKevitt, & DiPerna, 2002). Therefore, naturalistic observation procedures can be used in the functional assessment process as a preliminary data collection method that will aid in the development of target behavior definitions and initial hypothesis about the function and maintaining stimuli of the target behavior (O'Neill et al., 1997).

Methods of naturalistic observation. Naturalistic observations are generally collected through either anecdotal recording or antecedent-behavior-consequence (ABC) recording. Anecdotal recording is a detailed description of behavior that is often written in a narrative form. These anecdotal descriptions include information about both the physical make up of the classroom and the interactions between those in the classroom during a specific period of time (Hintze et al., 2002; Wheeler, 1993). Anecdotal recordings provide narrative descriptions of behaviors and events that occur over short periods (approximately 20 to 30 minutes) several times a week (Knoster & McCurdy, 2002).

Naturalistic observations may also be recorded using the antecedent-behavior-consequence (ABC) method, which was first described by Bijou (Bijou et al., 1968). Bijou argued that the context of a situation provides a stimulus, or antecedent, that causes a behavior to occur and consequences that maintain the behavior (Olympia, Heathfield, Jenson, & Clark, 2002). Each ABC record identifies the circumstances that were antecedent (precursors) to the problem behavior and the consequences (results) of that

behavior (Ellingson, Miltenberger, & Long, 1999; Foster-Johnson & Dunlap, 1993; Olympia et al.). ABC observation data can easily be recorded on a piece of paper with three columns. Under the first column, the observer records the antecedents, the behavior is recorded under the second column, and the consequences are recorded under the third. For example, when the observer notes that the target behavior is occurring in the natural setting, a short narrative is filled out in the second column. Then the observer immediately records a narrative of what happened prior to the behavior in the antecedent column and just after the behavior in the consequence column (Hintze et al., 2002; Bijou et al.). Not until the specific target behavior is observed can the antecedents and consequences be recorded. Therefore, it is essential that the observer have a clear definition of the target behavior that is being observed is (Fox et al., 2000). ABC recording procedures have become critical in the development of hypotheses about why behavior is occurring at the beginning of functional assessments (Hintze et al., Olympia et al.). When ABC observations are recorded repeatedly over time, the observer will be able to see what patterns, if any, emerge in the child's behavior (Olympia et al.).

Advantages and disadvantages of naturalistic observation. Naturalistic observation procedures have several advantages when used as an early step in a functional behavior assessment. First, these procedures allow for the frequency of the target behavior to be counted. Other advantages of naturalistic observations include the systematic observation of relationships between antecedents and consequences, data can be used to create hypothesis that can then be confirmed or disconfirmed throughout the rest of the functional behavior assessment, and data can help practitioners understand the

function that the target behavior is serving (Hintze et al., 2002). Naturalistic observations are also time and cost efficient (Knoff, 2002). On the other hand, naturalistic observation procedures are limited in their contribution to the decision making process because the observations are only summaries of what was seen, and this limitation may cause an observer to over interpret data (Hintze et al.).

Systematic Observation Procedures

Systematic direct observations are conducted using standardized procedures in specified times and places in order to quantitatively measure specific behaviors that have been operationally defined. Systematic observation procedures make it possible to confirm or disconfirm the reports of others, measure the severity of the problem behavior, and establish a baseline that can later be used to assess the effectiveness of positive behavioral interventions (Salvia & Ysseldyke, 2004; Shapiro, 1996). Wilson and Reschly (1996) found that the use of systematic observation procedures is steadily increasing. There are several methods that are frequently used to conduct systematic observations. These methods include: frequency recording, duration recording, latency recording, and time sampling procedures. Each of these methods will be considered in turn. Specifically, the examination will highlight how these systematic observation methods are conducted, a description of the types of behaviors each method is effectively used for, and the usefulness of each of these procedures. Finally, the use of scatterplots in systematic observation will be considered.

Frequency Recording.

When the number of times the behavior occurs is of greatest concern, frequency, or event tallies are important. Frequency recordings simply tally the number of times the behavior occurs (Fox et al., 2000). Frequency counts of behavior can then be converted into rates of behavior per unit of time (Hintze et al., 2002). Frequency observations are most effective when the behavior being observed does not occur at such a high rate that it cannot be counted accurately, when the behavior does not occur over an extended period of time, and when the behavior has a clearly identifiable beginning and end (Fox et al.; Salvia & Ysseldyke, 2004). Frequency recording can be very valuable because it can show changes in the amount of behavior displayed over both short and long observational sessions (Bijou et al., 1968).

Duration Recording.

Duration recordings measure the total amount of time that a behavior occurs during the observation period (McConaughy & Ritter, 2002). When the duration of the behavior is of greatest concern, observation should be limited to recording the actual amount of time that the target behavior occurs (Van Acker et al., 1991). When using duration recording, the observer can find the average of amount of time that each behavior lasted, or a stopwatch can be used to calculate the total amount of time that a student engages in the problem behavior during the observation period (Hintze et al., 2002; Salvia & Ysseldyke, 2004). The observer starts the stopwatch when the first episode of the behavior begins and stops the stopwatch when the behavior ends. Then the stopwatch is started again when the second episode of the behavior begins and stopped

when the behavior ends. By continuing this process, the observer can find the total amount of time that a student displays a behavior. If multiple observation sessions are of the same length, durations of behaviors can be compared across observation sessions. If multiple observation sessions are of differing lengths, a ratio of total duration to observation length can be calculated to compare the duration of the behavior across times. This type of observation is only useful when the behavior has clear beginnings and endings. Duration recording is useful for progress monitoring when an intervention is aimed at altering the amount of time that a student engages in a particular behavior (Hintze et al.).

Latency Recording.

Latency recording measures the elapsed time between the onset of a stimulus and the beginning of a specified behavior (Hintze et al., 2002). When completing a latency recording, the observer starts a stopwatch when a stimulus is delivered and stops the watch when the target behavior begins. Observers can examine both the average and total latency. Like frequency and duration recording, latency recording can be used when the behavior has a clear beginning and ending. This type of recording is best used when the observer is attempting to examine the length of time between an opportunity to elicit a behavior and the time passed before the behavior begins (Hintze et al.).

Time Sampling Procedures.

Time sampling has been referred to in other studies as interval sampling, interval coding, the method of repeated short samples, one-zero sampling, modified frequencies, and Hansen frequencies (Mann, Ten Have, Plunkett, & Meisels, 1991). Time sampling

methods record whether the target behavior is present or absent during short, specific intervals within the observation period (McConaughy & Ritter, 2002; Saudargas & Zanolli, 1990). Time sampling procedures can be divided into partial interval, whole interval, and momentary time sampling methods (Repp et al.,1988). These methods provide helpful comparisons of behavior when the target behavior occurs in multiple settings (McConaughy & Ritter). Time sampling is also useful when one is attempting to observe multiple behaviors, sporadic behaviors, and behaviors with a difficult to define duration (Murphy & Harrop, 1994). Time sampling does not record the duration or frequency of the behavior because if a behavior occurs three times or five times within an interval, it is scored as occurring once. This observation method records all behaviors as equal. Time sampling procedures have several advantages. First, these procedures require little equipment, and the observer only needs to consider the occurrence of the behavior rather than the behavior's onset or offset. Time sampling does not note the sequences of behaviors, such as antecedents and consequences (Mann et al.). Mann et al. state that, "If the researcher wishes to know whether or not a child is aggressive during school recess, but is not concerned with the magnitude of the aggression, then a time-sampling scheme may be employed" (p. 238). Time sampling is not valuable when exact frequencies, durations, or latencies of behavior are of concern because this observational method provides only an estimate of the occurrence of the behavior (Hintze et al., 2002).

As previously stated, time sampling procedures include partial interval recording, whole interval recording, and momentary time sampling. Each of these methods will be more clearly defined at this time. In addition, the behaviors that they are most effective

for and their common uses will be described. Finally, attention will be turned to the accuracy of time sampling procedures in measuring behavior.

Partial interval recording. Partial interval methods code whether or not the target behavior occurred at least one time within the specified interval (Saudargas & Zanolli, 1990; Van Acker et al., 1991). Partial interval recording is best used for behaviors that occur at a low rate or are inconsistent in duration and is preferred for behaviors that are infrequent and of short duration (Saudargas & Zanolli). Partial interval recording does not assess the frequency or duration of the target behavior (Saudargas & Zanolli). Instead, this method is commonly used for monitoring the effectiveness of interventions that seek to decrease behaviors (Hintze et al., 2002). McKenzie (1991) argues that partial interval recording requires more training than other forms of time sampling do.

Whole interval recording. In whole interval recording, an observer indicates whether or not the target behavior occurred throughout the entire interval observed (Van Acker et al., 1991). Whole interval recording can be appropriately used with behaviors that are continuous or occur in intervals of short duration. This method is commonly used for monitoring the effectiveness of interventions that seek to increase behaviors (Hintze et al., 2002).

Momentary time sampling. Momentary time sampling methods record whether or not the behavior occurred at the moment that the observation interval ended (Saudargas & Zanolli, 1990; Van Acker et al., 1991). Momentary time sampling procedures may miss behaviors that occur for a short period of time and are infrequent (Saudargas & Zanolli). Momentary time sampling can be used effectively for behaviors that do not

have clear beginnings and endings, persist over a longer time, and occur at a high rate (Fox et al., 2000). Like partial interval recording, momentary time sampling does not record the frequency or duration of the target behavior (Saudargas & Zanolli). However, momentary time sampling is useful for estimating the amount of time a behavior occurs during the observation period. Since momentary time sampling requires the least amount of time from observers, it is considered to be the most cost effective observational method (Edwards, Kerns, & Tingstrom, 1991).

Accuracy of recording behaviors. A study conducted by Mann and his colleagues (1991) found that time sampling methods are unable to estimate the amount of time that a behavior occurs. Time sampling overestimated frequency and duration of behavior. Specifically, partial interval recording has been found to overestimate duration of behavior and underestimate frequency of behavior (Repp et al., 1988; Saudargas & Zanolli, 1990; Van Acker et al., 1991), and whole interval recoding tends to underestimate the occurrence of the behavior (Hintze et al., 2002; Repp et al., 1988; Van Acker et al., 1991). Momentary time sampling randomly overestimates and underestimates behavior; therefore, this method is generally preferred over partial interval and whole interval (Murphy & Harrop, 1994; Repp et al., 1988; Saudargas & Zanolli; Van Acker et al., 1991;). Regardless of the type of time sampling used, the closest estimate of the amount of time behavior occurs can be achieved when the observation interval is shorter than the duration of the behavior being observed (Mann et al.). Saudargas and Zanolli recommend using intervals of 15 seconds because this interval length provides the most accurate representation of the behavior.

Scatterplots.

A scatterplot may also accompany direct, systematic observations. A scatterplot is a grid in which the student's day is broken into intervals of 30 minutes or shorter. The teacher fills in each block as the school day progresses to represent no problem behavior, low incidence of the problem behavior, or high incidence of the problem behavior occurring during the observation period. When completed for several consecutive days, a scatterplot provides a visual picture of when and to what intensity the problem behavior is occurring. Through this visual picture, patterns across time can often be seen and the relationship between the behavior and environmental variables may become clearer, thus leading to the development of logical hypotheses about setting events and antecedents (Gable, 1996; Touchette, MacDonald, & Langer, 1985).

Summary of Systematic Observation Procedures.

The following tables have been developed to help summarize the information that has previously been presented about systematic observation procedures. Table 1 compares frequency recording, duration recording, latency recording, and time sampling. Table 2 compares the partial interval, whole interval, and momentary time sampling procedures.

Table 1

Comparison of Systematic Observation Procedures

	Frequency Recording	Duration Recording	Latency Recording	Time Sampling Procedures
Definition	Records the number of times the behavior occurs	Measures amount of time behavior occurs in the observation session	Measures the elapsed time between the onset of a stimulus and the beginning of the target behavior	Record whether or not the target behavior is present during short, specified intervals.
How to use	Tally each time the behavior is observed.	Start stopwatch when behavior begins. Stop stopwatch when behavior ends. Continue through the observation.	Start stopwatch when stimulus occurs. Stop stopwatch when target behavior begins. Continue through the observation.	Use partial interval recording, whole interval recording, or momentary time sampling.
Behavior to observe	• Low rate • Does not occur over an extended period of time • Has clear beginnings and ends	• Has clear beginnings and ends	• Has clear beginnings and ends	• Occurs in multiple settings • Multiple behaviors at a time • Sporadic behaviors
Value of using	Shows changes in the amount of behavior across time	Allows for progress monitoring for interventions that are aimed at altering the amount of time that a student engages in a behavior	Examines the length of time between an opportunity to elicit a behavior and the actual occurrence of the behavior	Allow the observer to consider the occurrence of the behavior without regard to it's onset or offset

Table 2

Comparison of Time Sampling Procedures

	Partial Interval Recording	Whole Interval Recording	Momentary Time Sampling
Definition	Records whether or not the target behavior occurred at any time within the observation interval	Records whether or not the target behavior occurred throughout the entire observation interval	Records whether or not the target behavior occurred at the moment that the observation interval ended
Behavior to Observe	• Occur at a low rate, infrequent • Have inconsistent or short duration	• Continuous behaviors observed with very short intervals	• Occur for longer periods of time • Occur frequently
Common Uses	Progress monitoring for interventions that aim to decrease behaviors	Progress monitoring for interventions that aim to increase behaviors	Estimates how much time a behavior occurs, and is frequently used because it is time and cost effective
Accuracy of Behavior Estimate Provided	Overestimates the duration of the behavior, and underestimates the frequency of the behavior	Underestimates the occurrence of the behavior	Randomly overestimates and underestimates behavior.

Factors to Consider Prior to Observation

Regardless of the observation procedure used when directly gathering data for a functional behavior assessment, several factors must be considered before the observation can begin. These factors include: prioritizing problem behaviors, defining the target behavior, peer comparison, number of observations, times of observation, length of observation interval, recording method, availability of participants, and use of technology. Each of these factors will now be considered.

Prioritizing Problem Behaviors

Since it would be too costly and time consuming to observe and change all problem behaviors of one student, the collaborative functional behavior assessment team must determine which of the behaviors are most significant at the present. This can be done by considering the benefit-to-cost ratio for the child, others within the classroom, or both. The benefit-to-cost ratio considers which behaviors, if changed, would provide the greatest benefit at the least cost (Hintze et al., 2002). With these considerations, the problem behaviors can be prioritized. Nelson and Hayes (1979) provide the following suggestions for prioritizing behavior: focus on changing the behavior that is the greatest problem for the person who identified the problem, focus on the behavior that may be easier to change, focus on the behaviors that will produce beneficial response generalization, and focus on the behaviors at the beginning of a larger response chain. In addition, Salvia and Ysseldyke (2004) suggest targeting behaviors that are harmful to the student (self-injurious) or others, stereotypic behaviors that go against cultural norms, normative behavior displayed in the wrong context, and desirable behavior that is absent. Even with these guidelines, prioritizing the problem behavior will require clinical judgment from highly trained practitioners (Nelson & Hayes).

Defining the Target Behavior

Before beginning any observation, the target behaviors must be carefully selected and very clearly defined. This definition can be clarified and refined with the information gathered from both parent and teacher interviews (Sterling-Turner et al., 2001). When selecting the target behaviors for an observation, it is essential that the

behaviors selected are flexible to change (McConaughy & Ritter, 2002). The behaviors to be observed must also be specific, objective, measurable, and codeable (McKenzie, 1991; Sterling-Turner et al.). This means that the behaviors must be seen or heard (McKenzie). If the definition of the problem behavior is too broad, it may be difficult to observe accurately. Likewise, if the definition of the problem behavior is too narrow, whole units, or events, of the behavior may be missed (Shapiro, 1996). Finally, definitions of the problem behavior should be mutually exclusive. This means that the criteria for one behavior should not also occur as a criterion for any other behavior (Bijou et al., 1968).

Peer Comparisons

There may be value in comparing the behavior of the target student to that of other students in the classroom. For example, during an observation, the target student may be off task 35% of the time. If observations of randomly selected peers were also conducted, it may be noticed that the peers are actually off task 40% of the time. These important distinctions can only be seen when other students are observed in the same setting (McConaughy & Ritter, 2002). Such peer comparisons will indicate the degree to which the student's behavior differs from what is expected of them and their peers (Shapiro, 1996).

Number of Observations

Practitioners must remember that students' behavior varies from day to day and time to time. Therefore, it is important to observe a child across different days and times, and the data gathered from these multiple observations can be averaged across sessions

(McConaughy & Ritter, 2002; Pellegrini, 2001). McConaughy and Ritter suggest observing students for 10 to 20 minutes over several days instead of simply observing the child for a long period during a single day. Others suggest that a minimum of 3 observations should be conducted so that the observer reduces the chance of the problem behavior not occurring during the observation sessions (Lentz & Shapiro, 1986; Sterling-Turner et al., 2001). Still others suggest observing until 10 to 20 instances of the problem behavior have been seen (O'Neill et al., 1997). Regardless of the number of observations, the practitioner must be confident that they have gathered enough data to clearly see any patterns between the problem behavior and instructional, social, or physical factors (O'Neill et al.). Clinical judgment must be used when deciding how many observations to conduct (Shapiro).

Observation Times

Practitioners must also decide at what times they should observe the student. O'Neill and colleagues (1997) suggest as many observations as possible across a variety of times and settings. These extra observations will clarify when and where the behaviors do and do not arise. Harrower and colleagues (1999) recommend that the student should be observed in the settings and during the times when the target behavior is most likely to occur. For example, if a student only throws their chair in the afternoon, then he should be observed during the afternoon. Direct observations at the time when the behavior is most likely to occur will provide the most information about the contexts and antecedents that accompany a problem behavior, the intensity and duration of the behavior, and what consequences occur after the behavior (Horner & Carr, 1997). This

will also minimize the risk of the target behavior not happening during the observation session (Sterling-Turner et al., 2001). If possible, an observation should last for the entire academic period (Lentz & Shapiro, 1986).

Observation Intervals

Yet another variable to consider prior to conducting an observation is the length of time devoted to each observation interval. When using systematic time sampling procedures, accurate data collection is dependent upon small observations intervals because as the observation interval increases, the probability of introducing error into the observation increases (Repp et al., 1988; Zinner, Hindahl, & Schwibbe, 1997). It is often recommend that intervals of 15 to 30 seconds are used (Edwards et al., 1991; O'Neill et al., 1997; Saudargas & Zanolli,1990; Shapiro, 1996). When momentary time sampling is used, the length of the interval must be shorter than the duration of the shortest behavior being observed and the shortest interresponse time (Van Acker et al., 1991).

Recording Procedures

Prior to an observation, the observer must decide what naturalistic or systematic observation procedure is most appropriate for the specific situation. When a systematic observation method is chosen, the practitioner must also decide to use either a continuous or noncontinuous recording procedure. Continuous recording methods count the number of times a behavior occurs within the observation session or the length of time during which the behavior was observed (McConaughy & Ritter, 2002). Continuous recording methods include frequency, event, and duration methods (Murphy & Harrop, 1994). These continuous methods are most useful and accurate when the target behavior has

clearly defined beginnings and ends and appear only briefly. In addition, continuous recording is best used when the behaviors have only low to moderate rates of occurrence (McConaughy & Ritter).

Noncontinuous recording methods allow for small intervals in which the observer can record the data from the previous interval before the following interval begins. Momentary time sampling and partial interval recording are the most commonly used forms of non-continuous recording (Murphy & Harrop). However, partial interval recording can be continuous or non-continuous. It is continuous when there is no time for recording and observation intervals are consecutive, but partial interval recording is non-continuous when a distinct recording period of a few seconds falls between the end of one interval and the beginning of the next (Murphy & Harrop). When partial interval recording is conducted continuously, the observer may miss a behavior when they look away to record data (Murphy & Harrop). Non-continuous partial interval recording acts as a control for observer inattention while the observer is recording the behavior of the last interval (Bijou et al., 1968; Murphy & Harrop). This control can in turn increase the reliability of the observation (Bijou et al.).

Availability of Participants

Another variable to consider when preparing to conduct an observation is the availability of the individuals that are involved. Determine who will collect the data and who will use the information gathered from the observation (Wheeler, 1993). The availability of the teacher is essential to conducting an observation smoothly (Sterling-Turner et al., 2001). By meeting with the teacher before the observation, the observer

can become familiar with the classroom procedures, schedule, and layout. At this time, the teacher can describe what the student will be doing during the observation and direct the observer where to sit so that they will remain unobtrusive yet be sitting with a clear view and within voice range of the student (Shapiro, 1996).

Use of Technology in Observations

A final factor to consider prior to any observation is the use of technology. Several studies now utilize the technology of hand-held computers in collecting and analyzing observational data. The use of such technology allows the observer to collect information about multiple target behaviors simultaneously (Moore, 1998). In addition, these devices have internal clocks that allow for real time recording as these behaviors occur. When an observer is going to use a hand-held computer, target behaviors must be entered into the device and assigned a specific key that will code the behavior. When the behavior begins, the observer presses the key, and when the behavior ends, the observer presses the key a second time. Such technology allows observers to do multiple things at once. For example, computers can organize information about the onset, offset, and sequential antecedents and consequences of the behaviors observed. In addition, the observer can summarize the frequency, rate, average duration, and conditional probability of the target behavior (Van Acker et al., 1991). These computers minimize the possibility of error in sampling methods and are very accurate. Another advantage of these computers is that the observer does not have to stop watching the child while coding the behavior (Bijou et al., 1968; Van Acker et al.). Unfortunately this technology is very expensive and requires more intensive training than hand scoring methods do.

Therefore, hand-held computers are generally impractical for use in today's schools (Van Acker et al.).

Some technological tools that are not as expensive can be employed to aid in the collection of accurate observational data. Auditory beeps can be used to signal the exact end of each interval. Although hand-held computers can be programmed to provide these signals, a simple tape recording can also be used. Once the observer has determined which interval length is the most appropriate for their observation, they can record a beep or voice message onto a cassette tape at the beginning of each interval (Shapiro, 1996). Voice messages provide cues just before the observation interval begins, but these tapes can be difficult to make accurately. On the other hand, beeps recorded by a computer program are less time consuming to make and provide more accurate measures of observation intervals. Unfortunately, this type of tape does not indicate what observation interval the observer is currently collecting data for (Shapiro). Regardless of the type of tape used, this method ensures that the interval lengths remain consistent and exact, and pre-taped intervals free the observer from the distraction of having to look away from the student so that they can watch their stopwatch (Shapiro). The auditory tone should be listened to with the use of earphones because the presence of a tone in the classroom could significantly affect the behavior that the child displays during the observation (Murphy & Harrop, 1994; Van Acker et al., 1991).

Technical Properties of Observations

Reliability and validity are crucial to conducting observations that accurately reflect the target behavior and provide data that can link the functional behavior

assessment to effective interventions. In the following section, potential sources of error that may compromise reliability and validity will be discussed, and steps that can be taken to minimize these threats will be outlined.

Reliability of Observations

Reliability is the consistency with which a behavior is observed. Specifically, interrater reliability is the agreement of observed behavior by multiple observers (McKenzie, 1991). Interrater reliability can be calculated by dividing the number of agreements by the number of agreements plus disagreements (Bijou et al., 1968; Zeren & Makosky, 1986). Reliability in observations may be affected by the comprehensiveness and specificity of the definitions used in the observational code, the training of the observers, or the method that is used to calculate reliability (Bijou et al.). In studies involving the training of observers, time sampling was found to be the most reliable observation method, and frequency recording was found to be the second most reliable observation method (Zeren & Makosky). Noncontinuous recording procedures decrease the threat to reliability because observers are less likely to miss a behavior when time to record data is built into the observational procedure (Bijou et al.). The reliability of an observation can also be improved by increasing the number of observation intervals (Shapiro, 1996).

Validity of Observations

Validity is the degree to which an observational instrument measures what it claims to measure (McKenzie, 1991). Although observers generally assume that they are collecting accurate and unbiased data, errors in observation can potentially arise from

several sources and threaten the validity of the observation (Repp et al., 1988). These sources of error may include: observer reactivity, observer drift, observer expectancy,

Observer reactivity. Cohen (2000) reminds us that, "we do not enter the field as neutral or passive observers; rather we carry theoretical and emotional baggage that can color and influence our work" (p. 319). A good observer will recognize that their mere presence will influence those whom they are observing (Cohen). This potential source of error is called observer reactivity (Asmus et al., 2002). Reactivity occurs because teachers' and students' behaviors can be influenced by the mere presence of the observer in the classroom (Gittelsohn, Shankar, West, Ram, & Gnywali, 1997). When a child knows that they are being observed (reactivity) and changes their behavior, the validity of the observation is threatened (McConaughy & Ritter, 2002; Gittelsohn et al.; Repp et al, 1988). Research has demonstrated that a child's behavior can increase, decrease, vary more, or not be significantly affected at all (Repp et al; Zeren & Makosky, 1986). Pelligrini (2001) found that the presence of an adult observer inhibited the play and oral language of children between the ages of 3 and 6 years old. When being observed, teachers may provide more positive feedback than is normally provided. Even when observations are recorded by audio or videotape, the known presence of these devices can also cause reactivity effects in an observation (Repp et al.). To minimize observer reactivity effects, the observer should be someone who has spent prolonged amounts of time in the child's classroom or is unknown to the child (Pellegrini). Reactivity decreases as observation sessions continue in time or over a number of days (Gittlesohn et al.). Observers must learn to be unobtrusive while in the classroom so that they can

minimize the effect that their presence has on classroom behavior (McKenzie, 1991; Shapiro, 1996; Sterling-Turner et al., 2001).

Observer drift. Another source of error can be found in observer drift (Lentz & Shapiro, 1986). Observer drift occurs when the observer gradually changes the definition of the target behavior being observed. Error such as this can lead to inaccurate discrepancies in how the target behavior is recorded during the baseline phase and the intervention-monitoring phase. To minimize the observer drift threat, observers should frequently review the definition of the target behavior (Repp et al., 1988).

Observer expectancy. Expectancy can also bias observations. Prior to collecting any data in the classroom, observers may know several things about the student that they are going to observe. An observer may know the child's gender, the typical behavior of child's peers, and what the behavior of concern is. In addition, the observer may have already interviewed the teacher and parents and begun to develop hypotheses about the target behavior. Even when the observer is well trained, such prior knowledge can unconsciously cause the observer to hold expectations about the child's behavior and the function that it is serving (Repp et al., 1988). In addition to an observer's expectations, the consequences of a behavior may further bias the observation. For example, when a child is rewarded, the observer may simply expect that they were acting appropriately. When an observer holds this expectation, they will be in danger of missing the inappropriate behavior that the teacher also did not see (Repp et al, 1988). Observers naturally want to find patterns and make inferences from their data while seeking to confirm their hypotheses. With this approach observers are in danger of biasing their

data because they are looking to confirm what they expect (Hintze et al., 2002). Frequent review of the definition of the problem behavior and collection of interobserver agreement data can minimize the threat of observer expectancy (Sterling-Turner et al., 2001).

Observation recording procedure. The actual observation method and recording procedure that the observer selects may also allow error to enter into an observation. As previously described different recording procedures will cause an observer to estimate the frequency and duration of the behavior quite differently (Zinner et al., 1997). For example, partial interval recording tends to overestimate behavior, whole interval recording underestimates behavior, and momentary time sampling randomly overestimates and underestimates behavior. Other factors of the recording procedure that can affect observation accuracy are the number of behaviors to be observed, the complexity of behaviors to be observed, and the length of the observational session (Van Acker et al., 1991). Researchers suggest that smaller observation intervals be used because they provide more accurate counts of behavior (Repp et al., 1988). Decisions about which observation procedure to use should be based on information gathered from the teacher interview and any preliminary naturalistic observations and sound clinical judgment (Elliott et al., 2002).

Observer and setting characteristics. Many observer characteristics that have been found to affect observation accuracy. These characteristics include observer training, gender, and experience conducting observations (Van Acker et al., 1991). Setting characteristics that may affect observation accuracy include number and

characteristics of students that are observed, frequency of target behavior, and the sequencing of the behaviors (Van Acker et al.).

Linking Observations to Interventions

There is no doubt that naturalistic and systematic observation procedures are essential in data collection for functional behavior assessment. After considering the unique disadvantages and advantages of conducting observations, attention will be turned to the use of observations with interview data. Specific recommendations will be made regarding the observation of the instructional, social, and physical domains, and the contribution of the present research will be highlighted.

Disadvantages of Observation

Many argue that observation is both time consuming and expensive (Fox et al., 2000; Pellegrini, 2001). Observation is considered expensive because of the cost of necessary training and paying human observers (Fox et al.; McKenzie, 1991). Extensive training is necessary to become proficient at conducting observations as well as analyzing and utilizing the information gained from direct observations (Shapiro, 1996). For example, an observer must know how to detect patterns in behaviors and graph collected data (Fox et al.). In addition, observation may be intrusive for teachers and students, and highly problematic behaviors that occur at very low frequencies may not be observable (Asmus et al., 2002).

Advantages of Observation

Observation has many advantages that other forms of assessment do not. For instance, direct observation in natural settings collects information about actual human

behavior instead of contrived behavior in a clinical setting or a biased report of behavior gathered through a parent or teacher interview (Gittelsohn et al., 1997). Observations are also flexible and can be conducted to meet the specific needs of each unique assessment situation (Hintze et al., 2002). Finally, observations can continue to be used to assess the effectiveness of the interventions that are put into place as a result of the functional behavior assessment (Fox et al., 2000).

Use of Interviews with Observation

When conducting a functional behavior assessment, a variety of assessment tools should be used because a single instrument will not be able to capture all important factors of the target behavior (Cohen, 2000; Wheeler, 1993). When multiple assessment methods are used, information gathered can be combined for verification and data triangulation (Wheeler). Practitioners must conduct parent, teacher, and student interviews to supplement the data gathered through direct observation. It has been suggested that observations should be conducted right after the teacher interview so that the observer knows what target behaviors are of most concern and right before the student interview so that the observer has specific class content to discuss with the student (Lentz & Shapiro, 1986). Observing the child just after interviewing the parents and teacher will better prepare the practitioner to confirm or disconfirm the information gathered from the interview and uncover factors that were not raised in the interviews (Horner & Carr, 1997). Observing the child prior to interviewing them will help to maintain the validity of the observation and minimize the risk of observer reactivity. When combined with interviews, observations will validate and clarify the hypotheses

that have been developed, confirm or disconfirm that problem behaviors are occurring as they have been reported by teachers and parents, and highlight new behaviors or instructional, social, and physical factors that may be contributing to the problem (O'Neill et al., 1997).

Observation for Instructional Fit

Ysseldyke and Christenson (1996) state that learning does not occur in a vacuum. Within the classroom, any number of variables can initiate and maintain problem behaviors. Instructional variables that may contribute to problem behavior include: predictability of schedule, task difficulty, number of opportunities for students to make choices, level of assistance given to the student, manner by which instruction is given, clarity of directions provided for assigned activities, mismatch between student ability and instructional expectations, opportunities for the student to communicate, length of time given to complete activities, student enjoyment of required activities, and the usefulness of the activity that is perceived by the student (Kern et al., 1994; Foster-Johnson & Dunlap, 1993). Lentz and Shapiro (1986) add that the amount of time devoted to instruction and academic work, amount of time to transition between activities, classroom management methods, teacher prompts to gain student attention, pace of instruction, immediate written or verbal feedback, response elicitation, descriptive praise, procedure used to correct errors, and the opportunities to respond may be related to student behavior. The consistency or irregularity of a student's activity level may serve as an indicator of the tasks that the student enjoys or finds difficult (Greenspan & Greenspan, 2003). Although a student may appear to be on task, their work may or

may not be completed correctly. Therefore, an observer should also examine the work that the student completed during the time of the observation (Lentz & Shapiro, 1986). The observer must consider the instructional factors that may immediately be affecting student behavior, as well as those factors that may have occurred before or after the work period. Finally, the observer must consider temporally removed factors that may influence the student's work, such as the amount of time a teacher has to plan (Lentz & Shapiro, 1986).

Observation for Social Variables

Pigford (1989) has stated, "Effective teaching is a result of positive interactions between the teacher and student. Failure to focus on that interaction results in assessments that have little if any value" (p. 82). Observers must not only consider the teacher's actions but also the student's reaction in the natural setting (Pigford; Shapiro, 1996). Factors such as the presence and interactions of the student with other classmates, teacher attention, and proximity of teacher may also influence problem behaviors (Foster-Johnson & Dunlap, 1993). An observer must note the presence or absence of specific classmates, order and amount of social activities permitted, and the social structures established within the classroom (Horner & Carr, 1997). Teacher contact during instruction and seatwork must be considered (Lentz & Shapiro, 1986). The size of the groups that the student works in may influence their performance and behavior by influencing the frequency and amount of teacher and peer contacts (Lentz & Shapiro). Observation of the distance that a student maintains from their teacher or peers when interacting with them may also provide data about their social development (Greenspan

& Greenspan, 2003). Finally, Ysseldyke and Christenson (1996) note that an observer must consider the following social factors: the number of times the student is called upon by the teacher, peer initiated interaction with the student, seating arrangement, the presence of teasing, eye contact between teacher and student or student and peers, classroom support of individual differences, encouragement of student opinions and concerns, and student accountability for their behaviors, work, and use of time.

Observation for Physical Factors

Too often school psychologists look for the cause of problem behaviors within the student (Lentz & Shapiro, 1986). However, Nelson and Hayes (1979) state, "behavior is the result of an interaction between the current situation and individual differences" (p. 8). In addition, a 1982 report from the Panel on Selection and Placement of Students in Programs for the Mentally Retarded (as cited in Shapiro & Ager, 1992) concluded that an accurate assessment of the learning environment is as important as assessment of the student is. Physical factors that influence student behavior may include: noise level, uncomfortable temperature, overstimulation, understimulation, poor seating arrangement, and frequent disruptions (Foster-Johnson & Dunlap, 1993). Humidity and comfort of clothing may also play an important role (Horner & Carr, 1997). Ysseldyke and Christenson (1996) highlight several physical factors that may occur at the district and within-school levels. For example, one must note the teacher to student ratio, amount of homework assigned, emphasis on test-taking, and attendance. Within-school physical conditions may include class size, discipline problems within the school climate, leadership roles, cooperativeness in the environment, collaboration between staff

members, degree of structure, clarity of class rules and procedures, visual cues of class rules and procedures in the classroom, physical arrangement of the classroom, amount of personal space available to the student, focus on academics, visual reminders of what to do when work is finished, access to needed materials, organization of the classroom, and expectations (Ysseldyke & Christenson). Clearly, observers must be able to record both the behaviors and the environment in which the behaviors are occurring (McConaughy & Ritter, 2002).

Observation for Non-School Factors

Finally, it is important to observe for non-school factors that may be influencing a student's problem behaviors. Although these factors may not be directly observed, one may observe for indirect signs of sickness, allergies, medication side effects, fatigue, hunger, thirst, or a heightened state of arousal due to fights, missing the bus, familial situations, or a disruptive routine (Foster-Johnson & Dunlap, 1993). Horner and Carr (1997) add that constipation, sleep deprivation, and middle ear infections are important factors to consider.

Contribution of the Present Research

Functional behavior assessments shift the focus off of the child and onto the environment. The problem behaviors are not seen as something negative "within" the child. Rather, these behaviors are seen as the results of challenging environmental events (Horner & Carr, 1997). Therefore, the interventions that are arrived at through the process of the functional behavior assessment do not emphasize "managing" or "controlling" the student. Instead, these interventions seek to change the instructional,

social, and physical factors that initiate or maintain the problem behavior and provide students with skills that will be effective tools for handling the new environment (Horner & Carr). The quality of a practitioner's observation is dependent upon the usefulness of the observation in understanding the problem behavior and in developing effective interventions (Nelson & Hayes, 1979). However, no research has been conducted to determine how assessment information, specifically that gathered through observation, can be closely tied to interventions (Shapiro & Ager, 1992). The present research will develop, test, and validate an observational model that will enable the practitioner to more clearly link observational data to effective interventions.

CHAPTER 3

METHODS

Introduction

The case study is an empirical inquiry investigating a contemporary process within its real-life context (Yin, 2003). This research approach involves multiple sources of evidence, which will converge to address the research question: "The essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what result" (Schramm, 1971, p. 12 as cited in Yin). A single-case research design was chosen since the individual case will represent a "critical" and "representative" case requiring functional behavioral assessment and behavior intervention planning. The single case will also be revelatory in investigating the link between functional behavior assessment and planning interventions for behavioral improvement.

Procedures

After reviewing the current research on functional behavior assessment, it became clear that research must begin to examine how to link assessment to the planning and implementation of empirically based interventions. A case study was conducted to address the following research question: Will a new model of observation and functional behavior assessment effectively link assessment data to research-based interventions?

Sample

The sample for this study was a fifth-grade student from the Hawthorne Elementary School in Cedar Falls, Iowa. This 11-year-old, Caucasian, male student was

referred to Support Services by his primary teacher who expressed concern regarding his ability to work cooperatively with other students in his classroom.

Instrumentation

Five methods of data collection were incorporated. First, the student's cumulative file was examined. Second, an interview protocol was used to conduct functional behavior assessment interviews with the referred student, his mother, and two classroom teachers. This instrument was designed to identify variables in the instructional, social, or physical environment hypothesized to influence the behavior of concern. Third, an observation form was used to collect observational data concerning the problem behavior. The observation procedure was designed to confirm the variables identified in the interviews as influencing problem behavior. Fourth, participant-observation was included as the student's support team met to develop a behavioral intervention plan. Using a standardized intervention format, the support team developed a behavior intervention plan, which included a hypothesis, a goal, baseline data, selected interventions, and a progress monitoring plan. Finally, the progress monitoring data was to serve as a form of documentary, descriptive data gathered throughout the study.

Data Collection

Data collection began in the April of 2005. Once the student was referred to Support Services, interviews were conducted. First, the teachers, parent, and student were interviewed. Each interview lasted for approximately 30 to 45 minutes. The interviews were semi-structured, and questions regarding instructional, social, physical, and non-school factors were taken from a standardized interview protocol. At the time of

the teacher interviews, the teachers were asked to continue to gather data using a scatterplot. See Appendix A for an example of the teacher interview, Appendix B for the parent interview, and Appendix C for the student interview forms. Appendix D contains an example of the scatterplot that was used.

Following the interviews, behavioral observations were conducted. First, a narrative observation was conducted in order to develop a better understanding of the antecedents and consequences that were maintaining the problem behavior. Then three systematic observations were conducted across the times and settings in which the student displayed the problem behaviors. These systematic observations were at least fifteen minutes in length. All observation data was summarized, and this summary was aimed at confirming or disconfirming the information that had been gathered through the interviews. In addition, evidence of instructional, social, and physical factors was clarified. See Appendix E for an example of the observation form to be used.

Next, the support team met, using interview and observational data, and developed the behavioral intervention plan. As a participant-observer of the support team, the researcher assisted in the summarization of data and the development of the behavioral intervention plan. A standardized intervention planning tool was used to assist the support team in developing appropriate interventions, which included pre- and post-teaching and coaching. The support team also discussed how to monitor the student's progress throughout the implementation of these interventions. The team decided that progress monitoring data was to be collected by the primary investigator three times per week in the setting in which the problem behavior was most often

demonstrated. Duration and frequency recordings would be used to measure the amount of time that the student worked cooperatively with peers in a small group. However, the interventions were unable to be implemented because the problem behaviors decreased and the school year ended. See Appendix F for a completed example of the data summarization form and Appendix G for the standardized intervention planning tool.

Data Analysis

The descriptive data from the progress monitoring document was to serve as the critical source for evaluating the case study. The support team decided to graph the amount of time that student worked cooperatively within a group and the number of times that the student needed to receive coaching during the cooperative group work. Specifically, increases in the amount of cooperative work time and simultaneous decreases in the number of coaching sessions received during cooperative group work would validate the functional behavior assessment and behavior intervention plan model. Progress monitoring data was not collected, and data was not analyzed due to a decrease in problem behaviors and the end of the school year.

Summary

This research sought to determine if a new model of observation and functional behavior assessment effectively linked assessment data to research-based interventions. A single case study was conducted with a fifth-grade student at the Hawthorne Elementary School who was referred to Support Services because he had difficulty working cooperatively with peers during class. Data collection began in April of 2005 and was to include: examination of archival records; student, parent, and teacher

interviews; behavioral observations; participant-observation to develop a behavioral intervention plan; and progress monitoring throughout the study. Due to a decrease in problem behavior and the end of the school year, the behavior intervention plan was not implemented, and progress monitoring data was not collected.

CHAPER 4

RESULTS

Case Study Referral

Functional behavior assessment is useful for gathering data about a student's problem behavior and developing positive behavioral interventions (Foster-Johnson & Dunlap, 1993; Horner & Carr, 1997). However, little research has demonstrated how to effectively link functional behavior assessment data to a behavioral intervention plan (Shapiro & Ager, 1992). As a result, a new model of functional behavior assessment was developed by Dr. Susan Etscheidt, and a case study was conducted to examine the effectiveness of this model. The present case study was conducted between April and June of 2005 when a fifth grade boy, who will be referred to as Brandon, was referred by his teacher because he was having difficulty working cooperatively with his peers in a small group setting.

Functional Behavior Assessment Data

Upon receiving this referral in April of 2005, data collection began for the functional behavior assessment. First, a file review was completed, and then two teachers, the student's mother, and the student himself were interviewed using the model's interview protocol. Next, both teachers completed a scatterplot, and the primary investigator conducted four observations using the model's observation form. The data that was gathered throughout this process is presented in further detail below.

File Review

According to his file, 11 year-old Brandon is Caucasian. He is currently a fifth grader who is completing his first year at Hawthorne Elementary School, a small urban school in a Midwestern state. Prior to entering this school, Brandon has attended two other schools. Most recently he spent three years at a public school in a neighboring district. Brandon's grades have consistently remained in the A-B range across all academic areas throughout his schooling, and he has never been referred for academic or behavioral support services. Brandon lives with his brother, who is 2 years older, as well as his biological mother and father. Brandon has missed only four days of school this year. There is no evidence of past concerns in his file.

Teacher Interviews

Both of Brandon's teachers, Mrs. Jackson and Mrs. Chevrier, were interviewed. The purpose of these interviews was to operationally define the problem behavior, investigate the instructional, social, physical, and non-school antecedents and consequences that may influence the behavior, and begin the development of possible hypotheses regarding Brandon's inappropriate behaviors. The information that was gathered during these interviews is summarized below.

Primary Teacher.

Brandon spends most of the school day with Mrs. Jackson, his primary teacher. He checks in with Mrs. Jackson for homeroom each morning. He also works with this teacher each afternoon for social studies, reading, and language arts. Mrs. Jackson was interviewed on April 29, 2005.

Operational definition of the problem behavior. Brandon's primary teacher, Mrs. Jackson, initially referred him for difficulty working with peers in a small group setting. Mrs. Jackson operationally defined Brandon's problem behavior as verbally defying directions, refusing to work, sitting with his arms crossed while watching the other members of the group work, and taking peers' supplies when asked to work in a cooperative group on an academic task. Mrs. Jackson estimated that Brandon displayed this behavior 90% of the time that he was working in a group, and the behaviors persisted as long as she was not directly working with his group. It was reported that this behavior occurred most commonly in social studies, a class where Brandon was frequently required to work in a cooperative group. Mrs. Jackson also noted that she has not seen Brandon's problem behaviors on the playground or during other unstructured social interactions.

Instructional factors. When describing the instructional factors that may influence Brandon's problem behaviors, Mrs. Jackson described Brandon as an average to low-average ability student who is easily distracted. He often fidgets with small objects during whole-class instruction, and the teacher frequently redirects him when he is working independently. However, Brandon's behaviors do not become problematic until he is asked to form a group of four to five students to work cooperatively on an academic task, regardless of academic area of study. When asked to describe a typical small group work period, Mrs. Jackson said that Brandon consistently demonstrates the target behaviors within ten to fifteen minutes of starting the group. At that time, Brandon's peers will tell the teacher that Brandon is not doing his work, and the teacher

will return to the group. Usually, the teacher talks to Brandon about his responsibility to the group. Brandon is able to rejoin the group 50% of the time. The rest of the time, Mrs. Jackson removes Brandon from the group, and he is required to complete the assignment alone at a table in the back of the classroom. When removed from the group, Brandon works diligently and completes all of his assignments as directed. Mrs. Jackson was unable to clearly identify any factors that would predict a good work group period for Brandon.

Social factors. Mrs. Jackson described Brandon as socially immature, and she questioned his ability to understand and display behaviors that encourage positive social interactions. According to Mrs. Jackson, Brandon has had a difficult transition as a new student in the school. He has been teased by his peers throughout the year, and he did not start to make friends in his class until February. Although Mrs. Jackson was unable to describe anything that may predict a good or bad social interaction for Brandon, she expressed concern that his inability to work well within a group has caused his peers to avoid working with him. Brandon always starts the school day off well by smiling and greeting his teachers and peers, and he frequently talks with the peers that sit near his desk when he is supposed to be working independently. However, when he is asked to work cooperatively with other students in a group, he becomes defiant and refuses to engage his peers. When his problem behaviors begin, the majority of Brandon's peers tell on him. Only four of his peers ignore his behavior. Although Brandon is receiving increased peer attention from his behaviors, Mrs. Jackson does not believe that he is

seeking this attention due to his tendency to become easily embarrassed and avoid peer attention.

Physical factors. Currently, Brandon sits in the back of his classroom. However, he has spent the majority of the school year in the center of the front row. Mrs. Jackson stated that Brandon is talkative with his peers, easily distracted, and refuses to participate in cooperative groups regardless of where he sits in the classroom. She believes that Brandon works best when he is allowed to complete work alone.

Non-school factors. Mrs. Jackson stated that she has had occasional phone contact with Brandon's parents throughout the school year. She has only contacted Brandon's mother when he has had behavioral problems in the classroom, and at the time of those contacts, Brandon's mother was very supportive. Mrs. Jackson believes several non-school factors have affected Brandon this year. These factors include moving twice, being a new student to the school, and the death of his grandfather in December. See Appendix H for complete notes on Mrs. Jackson's interview.

Secondary Teacher.

Mrs. Chevrier is Brandon's secondary teacher. Brandon spends the morning with Mrs. Chevrier, and she teaches his math and science classes. Mrs. Chevrier was interviewed on May 2, 2005.

Operational definition of the problem behavior. Mrs. Chevrier confirmed that when Brandon is asked to work in a cooperative group, he will verbally defy directions, refuse to work, and sit with his arms crossed while watching the other members of the group. She stated that this behavior occurs 75 to 80 percent of the time that Brandon is

working in a small group, but these behaviors are not present on the playground or in the lunchroom. Mrs. Chevrier added that Brandon's problem behaviors continue until an adult intervenes and is able to redirect him or until he is removed from the group. She sees these behaviors approximately three times each week in both science and math.

Instructional factors. Mrs. Chevrier described Brandon as a student with average to low-average ability across academic areas. When in whole-class instruction, Brandon frequently asks questions. He also fidgets with small objects at his desk and talks to his peers when he is supposed to be working independently. Mrs. Chevrier has only seen Brandon work well in a cooperative group four times throughout the school year, but she could not identify anything that would have predicted these interactions to be positive instructional periods for Brandon. When asked to describe a typical small group interaction for Brandon, Mrs. Chevrier said that the problem behavior is visible after 10 minutes of cooperative group work. At this time, Brandon's peers will tell on him, and Mrs. Chevrier will return to the cooperative group and talk to Brandon for 5 to 7 minutes about his role within the group. She believes that 50% of the time this is successful. However, the other 50% of the time, Brandon is removed from the cooperative group, and he is required to complete his assignment independently at a table in the back of the room. When this occurs, Brandon frequently watches the work that his cooperative group is doing, and he works to complete his task without further behavioral problems.

Social factors. Although Mrs. Chevrier described Brandon as socially immature, she noted that he has begun to develop a few friendships this spring. Mrs. Chevrier believes that Brandon has been teased by his peers throughout the year, and she stated

that Brandon typically holds a grudge. She has occasionally observed him working more cooperatively with peers that have not teased him. However, this trend is inconsistent. Typically, Brandon has problems working with all of his peers regardless of their previous social exchanges. Mrs. Chevrier has observed Brandon's peers avoiding social interactions with him after he has had problems working cooperatively within the group. Finally, Mrs. Chevrier believes that Brandon may be more successful if he works with fewer students and if he works with very mature and patient peers.

Physical factors. According to Mrs. Chevrier, Brandon currently sits in the back of the classroom. However, he spent most of the year sitting in the center of the front row. Mrs. Chevrier feels that Brandon works most successfully when he has plenty of workspace, and she feels that he works least successfully when his work area is touching that of a peer. However, Brandon is easily distractible regardless of his location in the classroom.

Non-school factors. Mrs. Chevrier stated that she has only had contact with Brandon's mother during parent-teacher conferences. She was not aware of any non-school factors or concerns that may be influencing Brandon's behavior. See Appendix I for complete notes on Mrs. Chevrier's interview.

Possible Hypotheses.

As a result of the interviews with Mrs. Jackson and Mrs. Chevrier, several possible hypotheses were developed regarding the function of Brandon's problem behavior. First, it was hypothesized that Brandon displays the target behavior because he lacks the social skills needed to deal effectively with group members when completing an

academic task. Another hypothesis was that Brandon displays the target behavior in order to avoid working with peers. Finally, it was hypothesized that Brandon displays the target behavior in order to gain the peer attention that he has been unable to get in a more appropriate manner as a new student.

Parent Interview

The primary investigator interviewed Brandon's mother on April 28, 2005. This interview was designed to gain a better understanding of the instructional, social, and non-school factors that may be contributing to Brandon's problem behavior. In addition, this data was used to further develop and refine possible hypotheses.

Instructional factors. Brandon's mother, Mrs. Anderson, stated that although her son does not talk about school at home she does not have any reason to believe that he is unhappy at his school. According to his mother, Brandon knows that he is expected to get A's, B's, and C's in all of his classes. Mrs. Anderson stated that she has occasionally talked with her son's teachers on the phone, but she has only received one written behavioral report due to Brandon's disrespectful behaviors at school. Brandon's mother reported that she is concerned about his current behavior problems because he has not had problems working cooperatively with peers at any of his past schools. Mrs. Anderson reported that Brandon works with a tutor at home to complete his homework. Finally, Mrs. Anderson believes that her son has more difficulty with peer interactions at school than he does at home because of the structure and the academic demands that are placed on him.

Social factors. Mrs. Anderson describes her son, Brandon, as socially immature and easily embarrassed. She added that Brandon does not like to do anything to draw attention to himself. Although he has always had many friends in the past, these friends have always been two grades younger than Brandon. According to Mrs. Anderson, Brandon has been teased at his current school and has had difficulty being the new student in his class. Brandon has invited one friend to play at his house this year. When that friend came over to play, Brandon stayed inside and played while his peer went outside to play. In his free time, Brandon likes to play on the computer.

Non-school factors. Mrs. Anderson confirmed that her son lives with his biological mother, father, and brother. According to his mother, Brandon frequently fights with his brother, who is 2 years older. Mrs. Anderson described her son's normal daily routine, and added that although her son can be stubborn, he gets over conflict with others quickly. Finally, Mrs. Anderson expressed concern over the several drastic changes that have occurred in her son's life throughout the school year. These changes include moving twice, attending a new school, and experiencing the death of his grandfather. Mrs. Anderson believes the death of Brandon's grandfather was particularly traumatic because of the long-term care that he needed. Mrs. Anderson spent two weeks taking care of the Brandon's grandfather in another state, and then she returned home for one week to see Brandon. This pattern continued throughout the first half of the school year until the Brandon's grandfather died at Christmas time. See Appendix J for complete notes on Mrs. Anderson's interview.

Possible hypotheses. After comparing the data gathered through the teacher and parent interviews, the possible hypotheses about the function of Brandon's behavior began to be refined. First, it was hypothesized that Brandon displays the target behavior because he lacks the social skills needed to deal effectively with group members when completing an academic task. Another hypothesis was that Brandon displays the target behavior in order to avoid working with peers. According to the data, both of these hypotheses remain plausible. Finally, it was hypothesized that Brandon displays the target behavior in order to gain the peer attention that he has been unable to get in a more appropriate manner as a new student. However, both teachers and the student's mother feel that Brandon is very easily embarrassed and that he regularly avoids drawing attention to himself. Therefore, this hypothesis was eliminated.

Student Interview

Brandon himself was interviewed on April 29, 2005. This interview was similar in format to the previous interviews, and it sought to gain insight into the instructional, social, physical, and non-school antecedents and consequences that may be influencing Brandon's problem behaviors. This data was also used to continue to refine the hypotheses about the function of Brandon's target behaviors.

Instructional factors. Brandon said that none of his work was too easy or hard for him. He stated that he does not ask for help, and he tends to get into more trouble in the afternoon than in the morning. Brandon likes to read books, but he does not like to be told what books he has to read. When asked to describe a typical period of small group

work, Brandon stated that he ignores directions until his peers tell on him. When they tell on him, the teacher comes over to the group and tells him that he has to work alone.

Social factors. When asked about his social interactions, Brandon said that he did not have friends at the beginning of the school year because other students were teasing him. However, he has begun to make friends more recently. Brandon said that he does get in trouble at school for talking to his friends when he is supposed to be working, but other students do not get in trouble for the same behaviors. Brandon also added that sometimes he gets in trouble for not working well with peers in groups. When questioned further about his work with groups, Brandon added that he knows other students do not like to work with him because he "messes the group up." Brandon stated that he will argue, take the supplies, and ignore the directions on purpose so that his peers will tell on him and he will get to work alone. Brandon said that he feels sad when he gets into trouble for not working well with others, but at the same time, he is happy because he gets to work alone. Finally, Brandon added that his plan to get out of the group works every time.

Physical factors. Brandon reported that he sits near four of his friends, and he regularly talks to these friends when he should be working and learning. He stated that sometimes he talks to these friends so much that he is unable to get his work done. Brandon feels that he works best when he is alone. Specifically, he said that he likes to work at his desk or by the window. Brandon also said that he least likes to work at a table with his peers.

Non-school factors. Brandon did not identify any non-school factors that may be influencing his problem behavior. When describing the consequences of his problem behaviors at school, Brandon stated that his mom will talk to him about how he should behave, but then he is not punished at home if he gets in trouble at school for not working well with his peers. See Appendix K for complete notes on Brandon's interview.

Possible hypotheses. After comparing the data gathered through the teacher, parent, and student interviews, the possible hypotheses were again refined. First, it was hypothesized that Brandon displays the target behavior because he lacks the social skills needed to deal effectively with group members when completing an academic task. Another hypothesis was that Brandon displays the target behavior in order to avoid working with peers. According to the interview data, these hypotheses remain plausible. However neither of these hypotheses can be singled out as more accurate than the other. Therefore, they were combined into the following all-encompassing hypothesis: When Brandon is asked to work with a small group of peers on an academic task in a cooperative learning group, he will refuse to participate, disobey instructions, and take peer's supplies in order to escape working instructionally with peers and to gain social control of the situation.

Scatterplot

At the time of both teacher interviews, Mrs. Jackson and Mrs. Chevrier were asked to complete a scatterplot of Brandon's behavior. This scatterplot was designed to assess the intensity and frequency of Brandon's problem behaviors during cooperative group activities across the school day and in multiple academic settings. However,

neither teacher collected or recorded this data on the scatterplot. Therefore, this assessment tool did not provide information that was helpful in understanding Brandon's problem behaviors.

Observations

Observations of Brandon's behavior began on April 29, 2005. Both anecdotal and direct systematic observations were conducted in order to confirm or disconfirm the data that was gathered through the interview process. In addition, these observations sought to gather further evidence for the instructional, social, and physical factors that may be contributing to and maintaining Brandon's target behaviors. After examining the data that was gathered through the observations, the data will again be used to refine the hypotheses about Brandon's behavior.

Anecdotal Observation.

First, an anecdotal observation was conducted on April 29, 2005 so that the primary investigator could more clearly understand Brandon's behavior. Specifically, the antecedents and consequences of the target behavior were observed, and the instructional, social, and physical factors that were influential were recorded.

Narrative account of the observation. At the beginning of the observation, the class was transitioning into their spelling test. During his transition, Brandon did not interact with his peers. Rather, he took out his supplies and began tapping his pencils on his desk. He continued to tap his pencils and pick at his eraser while taking his test.

After his spelling test, Brandon talked quietly to the girl sitting next to him. He turned around and waved at the observer. Then he got out his math book. Brandon

continued to talk to the girl who was sitting next to him as the teacher looked at their math homework. The teacher said, "Brandon, she can do her own work." Brandon continued to talk to the peers on either side of his desk as the teacher checked other students' work.

Brandon quietly looked at his math book while the teacher read the correct answers. As the teacher announced the next math assignment, Brandon stared at the floor until the girl who sat next to him wrote in his math book. Brandon looked at his peer and they both began laughing quietly. Finally, Brandon wrote his math assignment into his planner.

The teacher began to give students directions about the science project for the day. Brandon talked to his neighbor as the teacher gave the directions. When the teacher asked the class to form groups of three or four, Brandon asked if he could be in a group of two. The teacher said, "Yes."

When the students began to form small groups, a peer asked Brandon to be in his group. After Brandon said yes, the peer went and asked two other boys to be in their group. In response, Brandon said, "No! We need to be a group of two! There is less to argue about with two." The peer responded, "but four minds are better than two." Without further response, Brandon led his peers to a spot in the back of the room. The teacher told Brandon that they were in another group's space and that he would need to move. Brandon then began rearranging desks in the room to create more space. The teacher told him that this was not allowed and that he was holding up the rest of the class. Brandon told his group to move to a new location across the room.

When the teacher gave Brandon's group a large stack of paper, she reminded them that they were to work together to build a structure that would hold the most weight possible. Immediately, Brandon began complaining that another student had more paper than he did. Then he stole the peer's supplies. In response, the peer stole Brandon's pencil. Both peers continued to stare at each other, and Brandon threatened to rip the paper. The peer responded and said that he would break Brandon's pencil. Next, Brandon held the paper out of reach of the peer and began taunting the peer to get the paper. Finally, the teacher returned to the group and told them that they need to begin working.

Initially, Brandon sat and watched as his peers began to build. Then he quietly began to build his own structure, separate from that of his peers. He continued to work by himself, folding paper, as he said, "Let's all make our own. I already am. Then we can connect them later." All other groups were working together to build one structure during this time. When a group member accidentally bumped Brandon's structure, he yelled, "Stop!" Brandon continued to work independently with little interaction with his peers. He never connected his structure to that of his peers. Instead, he told a peer that his structure was better than theirs was. Brandon's peers ignored this comment. Later, one peer said, "I'll just attach Brandon's to ours." Brandon responded by saying, "I'm just going to work on my own", and he continued to work intently engaged in his own project until the teacher told the students to stop and to return to the large group to talk about what they had done. Brandon talked with a peer as he returned to his seat.

Instructional, social, and physical antecedents observed. Instructionally, Brandon followed directions and completed work during large group instruction. However, when Brandon was required to work in a small, cooperative group, he began to defy directions, take others' supplies, taunt peers, and disrupt the work of others. Brandon was able to complete his portion of the work and meet instructional demands even though he did so individually. This observation suggested that the instructional antecedent was the expectation that Brandon work cooperatively within a small group.

Socially, Brandon talked with his peers during both large and small group instruction. During large group instruction, Brandon smiled and laughed as he talked with his neighbors instead of listening to directions. Whereas, in small group work, Brandon refused to work with the same peers, taunted peers, and disrupted others' work. Social antecedents may include a lack of social skills needed to work cooperatively with others when faced with an academic task, a lack of appropriate means to gain social control during an academically demanding task, and a personal preference to work alone.

When considering the physical domain of the classroom, Brandon did not refuse to follow directions or interact positively with peers while he was seated at his desk, which was not touching the work space of another peer. However, when Brandon's workspace was joined with that of three other students, he began to display the inappropriate behaviors. This data suggests that a physical factor that may contribute to the problem behavior is Brandon's proximity to other students when working on an academic task.

Consequences of behaviors. Although Brandon did not work cooperatively with his small group, his peers did not tell on him. Rather, Brandon's peers ignored his behaviors and allowed him to work alone for the entire observation period. Brandon's isolation from the group, efforts to work individually, and attempts to take peers' supplies did not result in negative peer or teacher attention. Instead, Brandon was simply allowed to complete his work alone while receiving no negative consequences. See Appendix L for completed Observation Summary Form.

Systematic Observations.

After the anecdotal observation was conducted, Brandon was observed three more times. These observations sought to compare Brandon's behavior during individual work and work in a small, cooperative group. In addition, the data that was gathered during these observations can be used as a baseline measure of Brandon's behavior prior to the implementation of an intervention. Each observation was conducted using momentary time sampling procedures. Brandon's behavior was observed in 30-second intervals across a period of 15 minutes. Specifically, Brandon's cooperative peer interactions and on-task behavior were observed. Results are as follows.

Time sampling 1. Brandon was observed during large group time in his classroom on May 2, 2005. During this time, the teacher was talking to the class about an upcoming group project. She defined roles and expectations of the group members. Brandon actively participated three times during the observation. Specifically, he raised his hand and asked the teacher if he would have to work with a partner for his project. Brandon continued to remain attentive to the teacher instruction for 71% of the

observation period, and he did not display any of the target behaviors. Brandon's peers were attentive for 83% of the observation period. He did not verbally defy directions, refuse to participate, or take peers' supplies.

Time sampling 2. Brandon was observed during small group time in his literature classroom on May 2, 2005. During this time, Brandon was working with three other students to create a circle poem. Brandon worked independently for 62% of the observation period. He interacted with peers frequently. However, only 5% of his talk with his peers was related to the task. He inappropriately talked with peers 36% of the time. Brandon's peers cooperatively worked on-task for 68% of the observation session. During this observation, Brandon yelled at a peer for sitting in his seat. This verbalization interrupted teacher directions. The teacher prompted him to stop inappropriate talking three times before he complied.

Time sampling 3. Finally, Brandon was observed during large group time in his social studies class on May 5, 2005. During this time, Brandon was supposed to be listening to teacher directions, and then completing steps to a large project as instructed. Brandon appropriately listened to the teacher and independently worked on his project for 46% of the observation. However, Brandon spent 28% of this observation talking to his neighbor, and he was inattentive or inappropriately working on his project 18% of the time. When inappropriately working, Brandon was drawing and erasing extra lines on his page after his teacher instructed him not to do so. Brandon's peers listened and worked appropriately for 79% of the observation period.

Possible Hypotheses.

After comparing the data gathered through the teacher, parent, and student interviews, it was hypothesized that when Brandon is asked to work on an academic task in a cooperative learning group, he will refuse to participate, disobey instructions, and take peer's supplies in order to escape working instructionally with peers and to gain social control of the situation. When considering the observation data, this hypothesis continued to be highly relevant because the observations confirmed several factors that were highlighted during the interview process. Specifically, observations suggested that Brandon may lack the social skills needed to work cooperatively with peers during an academic task. Observations also confirmed Brandon's strong preference to work alone, and the observed consequences of Brandon's behavior appeared to be highly effective for him. His disruptive and defiant behaviors during the group were highly functional in that they allowed Brandon to work alone without drawing excessive attention to himself. Since both his teacher and peers ignored his behaviors, it can further be concluded that Brandon's behaviors are not an attempt to gain attention from others. In light of this data, the hypothesis that was developed as a result of the interview process has been confirmed through direct observation and remains the most likely explanation of Brandon's behavior at this time.

Data Summarization and Hypothesis

After the interview and observation data was collected, the primary investigator collaborated with Brandon's teachers and mother to summarize the assessment data and develop a hypothesis. During this meeting, which occurred on May 5, 2005, the data that

provided evidence of instructional, social, physical, and non-school antecedents that may contribute to Brandon's problem behaviors were outlined. Furthermore, the consequences of his behavior were clearly defined. Finally, it was hypothesized that when Brandon is asked to work with a small group of peers on an academic task in a cooperative learning group, he will refuse to participate, disobey instructions, and take peer's supplies in order to escape working instructionally with peers and to gain social control of the situation. See Appendix F for the completed functional behavior assessment data summarization and hypothesis form.

Behavior Intervention Plan

During the data summarization meeting, the primary investigator, teacher, and Brandon's mother began to discuss possible research-based interventions that would effectively alter the instructional and social antecedents that initiate the target behavior and the consequences that maintain it. The model's intervention form was used to help the planning team formulate intervention ideas based upon the problem behavior's instructional, social, and physical antecedents, as well as the function and consequences of the behavior. All individuals at the planning meeting agreed upon an intervention. It was decided that the primary investigator would address Brandon's possible lack of social skills needed to work well with others through social skills coaching. Specifically, this coaching would occur in the classroom during cooperative group work. In order to do so, the primary investigator would observe Brandon as he worked cooperatively within a group. When he began to verbally defy directions, take others' supplies, refuse to work, or work independently, the primary investigator would remove him from the

group and give him immediate feedback on his behavior. In addition, alternative appropriate behaviors would be discussed. Lane and his colleagues found that social skills coaching is an effective means of improving the positive social skills of elementary students and decreasing their disruptive behaviors in the classroom (2003).

In addition to coaching, it was decided that Brandon's desire to avoid working with others would be addressed through pre- and post-teaching. Pre-teaching would be conducted by the primary investigator for 5 minutes before Brandon was required to work in a collaborative group. This pre-teaching would emphasize the behaviors and role that Brandon will be expected to complete during the group work. Much like pre-teaching, post-teaching would be conducted by the primary investigator for 5 minutes after Brandon was required to work in a collaborative group. This post-teaching time would be used to evaluate Brandon's behaviors during his time in the group and review the skills that he was unable to demonstrate during the cooperative group. Research has found that pre- and post-teaching strategies are highly effective when working with students who exhibit problem behaviors in order to avoid an undesired task (Burke, Hagan-Burke, & Sugai, 2003).

Finally, a behavior intervention plan and progress monitoring procedures were agreed upon by the group members. It was decided that the interventions and the progress monitoring would be conducted by the primary investigator three times a week for the remainder of the school year. Intervention effectiveness would be monitored by measuring the amount of time that Brandon appropriately works within a cooperative group and by counting the number of times that Brandon has to be removed from the

group for coaching. See Appendix G for the Duncan Intervention Option Tool and Appendix M for the complete behavior intervention plan.

Intervention Implementation

Both fifth grade teachers, Brandon's mother, and the primary investigator agreed to implement coaching and pre- and post-teaching strategies. However, these interventions were unable to be implemented. Intervention implementation was difficult because the school year ended and the teachers were unable to communicate when Brandon would be working in a cooperative group during the last three weeks of the school year. Brandon's teacher's also reported that his problem behaviors decreased as the school year came to an end.

Progress Monitoring Data

At baseline, Brandon appropriately participated with peers 5% of the time that he was required to work cooperatively with a small group of peers. Due to decreases in problem behavior, a lack of communication regarding when Brandon would be working in a cooperative group, and the end of the school year, progress monitoring data was not collected.

Summary

Brandon, a fifth grade student, was referred to participate in the present study because he was unable to work cooperatively with peers in a small group. Data was gathered using a new model of functional behavior assessment that sought to directly link assessment data to intervention planning in the instructional, social, physical, and non-school domains. First, two fifth grade teachers and Brandon's mother were interviewed.

Next, an anecdotal observation was conducted to gather direct evidence of behavioral antecedents and consequences, as well as to confirm or disconfirm the information what was gathered through the interview process. Finally, Brandon was interviewed and three direct systematic observations were conducted to gather baseline data. Once all data was gathered and analyzed, it was hypothesized that when Brandon is asked to work with a small group of peers on an academic task in a cooperative learning group, he will refuse to participate, disobey instructions, and take peer's supplies in order to escape working instructionally with peers and to gain social control of the situation. The intervention planning team, which consisted of Brandon's primary teacher, his mother, and the primary investigator, met to review the data and develop an intervention. It was decided that coaching, as well as pre- and post-teaching strategies, would be used to build the social skills that Brandon needed to work cooperatively within a group and to provide immediate feedback on his performance. However, due to decreases in problem behavior, a lack of communication regarding when Brandon would be working in a cooperative group, and the end of the school year, the interventions were never implemented, and Brandon's progress was unable to be monitored. As a result, the primary investigator was unable to evaluate the accuracy of the hypothesis regarding Brandon's behavior. Although the model of functional behavior assessment that was used allowed the investigator to gather a large amount of data regarding the antecedents, consequences, and functions of Brandon's problem behavior, further research is needed to determine the effectiveness of this model.

CHAPTER 5

DISCUSSION

Conclusions

Several conclusions can be drawn from this functional behavior assessment case study as well as from the implementation of the model of functional behavior assessment that was created for this case. Furthermore, several conclusions can be drawn when comparing this case study to the current available body of research. Each of these conclusions will be considered in turn.

Conclusions of the Functional Behavior Assessment Case Study

Many researchers have demonstrated that functional behavior assessment is an effective means of gathering assessment data about the antecedents and consequences of a problem behavior and developing successful behavioral interventions that specifically address the function that the problem behavior serves (Foster-Johnson & Dunlap, 1993; Horner & Carr, 1997; Nelson et al., 1999; & Sugai, Horner, and Sprague, 1999). This study sought to expand upon this body of knowledge by exploring how to effectively link assessment data to behavior intervention planning. A case study was conducted to determine what instructional, social, physical, and non-school antecedents and consequences initiated and maintained the problem behaviors.

In this case study, Brandon was referred by his teacher because he verbally defied directions, refused to work, and took peers' supplies when he was asked to work in a cooperative group on an academic task. A variety of assessment tools were used to collect data because a single instrument would not have been able to capture all important

factors of the target behavior (Cohen, 2000; Wheeler, 1993). Data was gathered through two teacher interviews, a parent interview, a student interview, and several observations. The interviews were designed to gather data about the instructional, social, physical, and non-school factors that may be influencing the target behavior, and the observations were designed to clarify the hypotheses that were developed through the interviews, confirm or disconfirm that problem behaviors are occurring as they have been reported by teachers and parents, and highlight new behaviors or instructional, social, and physical factors that may be contributing to the problem (O'Neill et al., 1997).

When all data was gathered, a hypothesis regarding the function of Brandon's behavior was developed. A comparison of the interview and observation data suggested that Brandon may lack the social skills needed to work effectively with a small group of peers. It was determined that instructionally, Brandon was a student with average ability who was easily distracted by his peers. When asked to work in a cooperatively group, Brandon would disobey instructions or work independently until his peers would tell on him. Then the teacher would talk to him about his behavior, and 50% of the time, Brandon would be removed from the group and required to complete his work alone. Brandon stated that he demonstrated these behaviors on purpose because he prefers to work independently. Socially, Brandon has been teased throughout the school year and has had difficulty making friends. However, he does not have problems with peers on the playground or during lunch time. Physically, Brandon is easily distracted regardless of his seating location in the classroom. Brandon may work better when his workspace is not touching that of another peer. Brandon has also experienced several non-school

factors that may be contributing to his problems behaviors. He has moved twice during the school year, he is a new student to the school, and his grandfather recently died. As a result of this data, it was hypothesized that when Brandon is asked to work with a small group of peers on an academic task in a cooperative learning group, he will refuse to participate, disobey instructions, and take peer's supplies in order to escape working instructionally with peers and to gain social control of the situation.

Based upon this hypothesis, the teacher, parent, and primary investigator collaboratively met to develop a behavior intervention plan. All agreed that pre- and post-teaching strategies, as well as coaching, would be used to teach Brandon the social skills needed to work cooperatively in a group and to provide immediate feedback as he attempts to put these skills into practice. The team collaboratively determined that these research-based interventions would be conducted three times per week and progress monitoring data would be collected at the same time.

Due to limited collaboration and the end of the school year, the interventions were not able to be carried out, nor was Brandon's progress able to be monitored. Past research has demonstrated the importance of working as a collaborative team to develop and implement the most effective interventions (Kern et al., 1994; Umbreit, 1995). The present case study has also verified that functional behavior assessment can lead to the development of hypothesis-driven interventions that emphasize skill building instead of punishment and increase the prospect of positive intervention results (Blaskeslee, Sugai, & Gruba, 1994; Nelson et al., 1999). However, this case was unable to determine the effectiveness of these interventions.

Conclusions of the Model Used

The current case study sought to closely link functional behavior assessment data to behavioral intervention planning through the implementation of a new model. In order to do so, interview and observation data regarding the instructional, social, physical, and non-school antecedents and behavioral consequences were gathered. Narrative and direct systematic observation procedures were used to validate and clarify the hypotheses, confirm or disconfirm that problem behaviors are occurring as they have been reported, and highlight the instructional, social, and physical factors that may be contributing to the problem behaviors (O'Neill et al., 1997). In addition, scatterplots, which were completed by the referring teachers, were used to provide a visual picture of the problem behaviors as they were occurring (Gable, 1996; Touchette, MacDonald, & Langer, 1985). Nelson and Hayes have argued that the quality of a practitioner's observation is dependent upon the usefulness of the observation in understanding the problem behavior and in developing effective interventions (1979). The usefulness of the observation model that was implemented during the present case study will now be considered in further detail. Specifically, the effectiveness of the observation procedures, the use of the scatterplot, and the synthesis of observation data across the instructional, social, and physical domains will be examined.

Observation Procedures.

Narrative observations. Narrative observations allow the observer to directly gather data about the context of a situation that provides a stimulus, or antecedent, that causes a behavior to occur and consequences that maintain the behavior (Bijou et al.,

1968; Olympia et al., 2002). Each observation identifies the circumstances that were antecedent to the problem behavior and the consequences of that behavior (Ellingson et al., 1999; Foster-Johnson & Dunlap, 1993; Olympia et al.). The narrative observations that were conducted during the present case study did confirm and disconfirm the data that was gathered through the interview process, and the observation data was useful in developing and refining possible hypotheses about the problem behaviors. For example, all interview data regarding the instructional, social, and physical antecedents of Brandon's behavior were confirmed through the narrative observations that followed. Since all data pointed to the same antecedents and consequences, the researcher was easily able to understand the function of the behavior and develop a hypothesis.

However, the interview data that is gathered during other functional behavior assessments may not be completely confirmed by the data that was collected through narrative observations. For example, when interviewed, teachers may report that off-task behaviors, such as the tapping of fingers and toes, are consistently addressed. The narrative observation may then find that these types of behaviors are actually ignored a vast majority of the time. Since there is a discrepancy in data, the researcher will able to conduct more observations. In so doing, the researcher will able to better understand the consequences that immediately follow the problem behavior in a natural setting and refine the hypothesis appropriately.

Finally, in a third case, interview data can be both confirmed and disconfirmed through narrative observations. The observations may allow the researcher to clearly view the problem behavior and to confirm the referral teacher's operational definition of

the behaviors. However, this same observation may allow the researcher to disconfirm the teacher's reports regarding the consequences of the problem behavior. Although the teacher may report that the student is disciplined and held accountable for their behavior and work completion, the observation may disconfirm this report. Rather, the teacher may be ignoring the student's behaviors. These cases clearly demonstrate how observations of the problem behavior in the natural environment allow interview data to be confirmed or disconfirmed so that the hypotheses regarding the problem behavior can be accurately refined (McConaughy & Ritter, 2002).

Direct systematic observations. Overall, direct systematic observations are flexible and can be conducted to meet the specific needs of each unique assessment situation (Hintze et al., 2002). Furthermore, these observations are useful in gathering baseline data, and they can continue to be used to assess the effectiveness of the interventions that are put into place as a result of the functional behavior assessment (Fox et al., 2000). The present case study clearly demonstrates the adaptability and the usefulness of such direct systematic observation procedures. In this case study, momentary time sampling was used to calculate the amount of time that a student was actively engaged in a small cooperative group that was working on an academic task. Other functional behavior assessments may utilize momentary time sampling, duration recording, and frequency counts to gather data about academic engaged time, off-task behaviors, and assignment completion. In each of these cases, observations can be flexibly used to observe the problem behavior and gather appropriate baseline measures.

Then the systematic observation techniques can continue to be used throughout the intervention implementation in order to monitor the students' progress across time.

During the case study that was conducted, the researchers used professional judgment to determine what types of direct systematic observation to use. Similarly, the researcher created protocol forms on which to collect data. This freedom was designed to allow the researcher to use observations flexibly to meet the needs of each unique situation (Hintze et al., 2002). However, this freedom has made it difficult to consistently record and analyze the results of these observations across settings and cases. Therefore, the creation of a set of direct observation protocols may be useful in data collection for future functional behavior assessments. Perhaps one observation protocol could contain a space to record the target behaviors being observed and space to record the presence or absence of each behavior across an appropriate set of time sampling intervals. Another protocol could provide space for the researcher to record the target behaviors being observed and space to record the frequency or duration of these behaviors during several different observational sessions. These protocols will help the researcher to more clearly and specifically set up an observational format while, at the same time, allowing the researcher to flexibly adapt the observation to meet the needs of specific behaviors (Hintze et al.). This flexibility may mean the observer is able to determine the type of observation conducted, the length of the observation interval, the number of observation intervals, and the number and types of behaviors that are observed (Bijou et al., 1968; Shapiro, 1996). Use of these forms will also encourage the researcher to frequently review the definition of the target behaviors to observe (Repp et al., 1988). Overall, these

forms may encourage the researcher to intentionally account for factors that may improve the reliability and validity of their observations (Bijou et al.; Shapiro; Repp et al.).

The Use of the Scatterplot.

The scatterplot was designed to provide a visual picture of when and to what intensity the problem behavior is occurring. Through this visual picture, patterns across time may be seen and the relationship between the behavior and physical variables may become clearer, thus leading to the development of logical hypotheses about setting events and antecedents (Gable, 1996; Touchette et al., 1985). However, the current case study demonstrated that this information cannot be gathered without collaboration between the teachers and the data collector (Kern et al., 1994; Umbreit, 1995). In Brandon's case, teachers did not complete the scatterplots as requested. The teachers each responded that they did not have time to complete the scatterplot because they have to work with many other children at the same time. While the data gatherer must recognize and appreciate the multiple tasks and demands that teachers face, teachers must work collaboratively with the researcher in order to gather the most useful data for the student.

However, scatterplots have proved to be a useful tool in gathering information about trends in the occurrence of a problem behavior across time (Gable, 1996; Touchette et al., 1985). When completed the scatterplot can help the researcher to more fully understand when and where the problem behavior is occurring. In turn, this may reveal more information about the instructional, social, and physical antecedents to the problem behavior (Gable, 1996; Touchette et al., 1985). Therefore, researchers must work to

complete a scatterplot with teachers during the interview and attempt to collaborate with the teacher to complete another scatterplot over a series of days or weeks.

Synthesis of Observation Data Across the Domains.

The case study that was conducted validated the importance of observing for antecedents and consequences within the instructional, social, and physical domains that may contribute to the problem behavior. When observations were conducted, evidence of these variables was gathered. After considering the instructional, social, and physical variables that were pertinent in the current case study, the process that was used to evaluate these variables will be examined.

Instructional domain. Based upon the case study that was conducted, several variables were found to be useful in understanding the instructional factors that contribute to the problem behaviors. These variables include opportunities for student choice, level of assistance given to the student, and enjoyment of required activities (Foster-Johnson & Dunlap, 1993; Kern et al., 1994). The case study also found the following variables useful in understanding the instructional domain: task difficulty, manner in which instruction is given, length of time given to complete activities, student enjoyment of required activities, the perceived usefulness of the activity, classroom management techniques used, response elicitation, and the amount of time a student is academically engaged (Foster-Johnson & Dunlap; Kern et al.; Lentz & Shapiro, 1986).

Social domain. The case study also demonstrated that it is important to observe for several social factors may be contributing to the problem behavior. Some of these factors include the presence and interactions with both peers and teachers, teacher

attention, proximity to the teacher, teacher contact during instruction and seatwork, size of the group the student is working in, peer initiated interactions, the presence of teasing, amount of social activities permitted, encouragement of student opinions and concerns, and student accountability for their behaviors, work, and use of time (Foster-Johnson & Dunlap, 1993; Horner & Carr, 1997; Lentz & Shapiro, 1986; Ysseldyke & Christenson, 1996). Finally, just as Greenspan and Greenspan suggest, observations may be useful in understanding the social development of the student (2003).

Physical domain. Physical factors about the make-up of the classroom may also provide useful observational data about the variables that may be initiating and maintaining the problem behaviors. The current case study found that physical factors may include seating arrangement, number of disruptions, class size, clarity of rules, visual cues that remind students of expectations, physical arrangement of the classroom, amount of personal space available to the student, and access to needed materials (Foster-Johnson & Dunlap, 1993; Ysseldyke & Christenson, 1996). Other relevant physical factors include the organization of the classroom, over or under stimulation, and the amount of homework that is assigned (Foster-Johnson & Dunlap; Ysseldyke & Christenson)

Evaluation of antecedents and consequences. Evidence of the instructional, social, and physical domains was compiled using the observation summary form. This form encouraged the researcher to gather observational evidence of the instructional, social, and physical antecedents and the consequences of the problem behavior. While the researcher found this form challenging to complete, it allowed them to confirm or

disconfirm what was stated during the interview process and to observe instructional, social, and physical factors that had not been considered previously. This form allowed the researcher to accurately compile and compare data that was gathered through several observation sessions, and it encouraged the researcher to spend time deciphering between the antecedents, consequences, and functions of the target behavior. Completing the observation summary form was crucial to understanding influential variables in the instructional, social, and physical domains and to further refining the hypotheses that were developed as a result of the interview process. See Appendix E for an example of the observation summary form.

Conclusions of Present Study and Available Literature

When properly conducted, functional behavior assessments can reveal large amounts of information about problem behaviors that have been unresponsive to the usual general education interventions (Sugai, Lewis-Palmer, & Hagan, 1998). Brandon's case has demonstrated that a functional behavior assessment results in a clear and complete description of the problem behavior, a thorough recognition of what instructional, social, physical, and non-school variables will most likely predict when the problem behavior will or will not occur, and an understanding of what function the problem behavior serves for the student. In addition, this functional behavior assessment provided indirect interview data and direct observation data that coincided and were used to develop a hypothesis, which summarized the problem behavior, the variables under which the behavior occurs, and the consequences that maintained the behavior (Sugai et al., 1998).

The current case study has demonstrated the importance of collaboration in working to complete the functional behavior assessment data collection and behavioral intervention planning (Kern et al., 1994; Umbreit, 1995). Just as past research has demonstrated that collaborative efforts have resulted in interventions that are practical and reasonable, the success of the present case was dependent upon collaboration (Kern et al.; Umbreit). Although data collection and intervention design occurred collaboratively, intervention implementation lacked the same collaborative efforts. Therefore, Brandon's intervention was unable to be implemented, and his progress was unable to be monitored. Research has typically found that when teachers are included in the assessment process, interventions that teachers are capable of and willing to implement are collectively decided upon. Furthermore, when teachers are involved in the assessment process, they are more likely to continue to implement the interventions long-term, and they report being happy with the intervention results overall (Kern et al.; Umbreit). Unfortunately, such collaboration was limited during the intervention implementation phase of the present case study.

As a result of Brandon's case study, it can be concluded that both narrative and direct systematic observation procedures are needed to confirm and disconfirm interview data, as well as to refine hypotheses (Cohen, 2000; Wheeler, 1993;). Furthermore, these observations allow the researcher to directly view the instructional, social, and physical antecedents and consequences of the target behavior. This information can be carefully and effectively analyzed through the use of the observation summary form, but the development of systematic observation protocols may encourage future researchers to

appropriately and flexibly use observations while minimizing threats to reliability and validity (Bijou et al., 1968; Repp et al., 1988; Shapiro, 1996).

Implications for the Field of School Psychology

Based upon these conclusions, school psychologists must understand that functional behavior assessment is a very useful means of gathering data and developing effective behavioral intervention plans. The current study contributes to a large body of research which demonstrates that the benefits of functional behavior assessment far out-weigh the time consuming nature of this assessment process (Harrower, Fox, Dunlap, & Kincaid, 1999; Horner & Carr, 1997). This study expounds upon past research, which demonstrates that when a functional behavior assessment is conducted with integrity, collaboration, and a comprehensive model, the student can begin to develop the skills that they may lack and exhibit positive behavioral changes in the classroom (Harrower et al., 1999; Kern et al., 1994; Umbreit, 1995).

As the field of school psychology continues to emphasize the importance of linking assessment data to intervention planning, the functional behavior assessment will continue to develop as a highly effective tool. However, throughout this process, school psychologists must consciously consider how to link their assessment data tightly to the development and implementation of research-based interventions (Horner & Carr, 1997). Therefore, school psychologists must begin to examine the evidence of instructional, social, physical, and non-school factors that may be influencing a student's problem behavior. By carefully gathering evidence through both the interview and observation phases of a functional behavior assessment, a school psychologist will be better equipped

to understand the antecedents and consequences that initiate and maintain the problem behavior. In turn, they will be more prepared to develop interventions that are specifically targeted at addressing these behavioral antecedents and consequences (Horner & Carr).

Finally, the school psychologist must recognize that functional behavior assessment is a difficult process. It is not simply a list of questions to ask or a list of steps to follow. Rather, functional behavior assessment is a collaborative data gathering process that should be used to drive intervention planning. Functional behavior assessment is best done when a team of teachers, parents, school psychologists, social workers, and consultants can work together, with the student, to more clearly understand why the problem behaviors occur and what factors can be manipulated in order to teach the student more appropriate behavioral responses or to make the problem behavior ineffective (Kern et al., 1994; Umbreit, 1995).

Implications for Future Research

This case study has demonstrated the need to begin to expand the research conducted on functional behavior assessment. Further research must be done to validate the use of the model of functional behavior assessment that was used in this case study. The current case study has just begun to examine the effectiveness of this model, and future research must expand on this in order to more fully determine how this model allows practitioners to link assessment data to intervention planning. Future research regarding this model of functional behavior assessment must also examine the usefulness of developing several systematic observation protocols, which can be used to flexibly

adapt time sampling, frequency, and duration recording procedures to the unique observational needs of multiple problem behaviors.

Second, future research must seek to demonstrate the long-term effectiveness of the interventions that are developed while using the current model of functional behavior assessment. Due to time constraints and little collaboration, there is limited data regarding the effectiveness of the coaching and pre-teaching intervention strategies that were used to address Brandon's problem behaviors. In the future, researchers must continue to collect progress monitoring data longitudinally to fully evaluate the effectiveness of the research-based interventions that result from functional behavior assessments.

Finally, further research must seek to determine the most effective means of linking functional behavior assessment data to the behavioral intervention plans that are developed. This case specifically sought to link assessment data in the areas of instructional, social, physical, and non-school factors to the interventions that were developed. Researchers must continue to directly link the interview and observation data to the behavioral intervention plan, and future intervention planning should be closely connected to and driven by the process of assessment and data collection.

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APPENDIX A

TEACHER INTERVIEW FORM

Student: _____ Date: _____

Teacher: _____ Interviewer: _____

The information I gather from you today will help us develop interventions that are more effective for this student. The interview should take about 30 minutes. Thank you for making time to meet.

Description of Problem Behavior:

Topography:

Frequency:

Duration:

Intensity:	1 (low)	2	3	4	5 (high)

Indicate with a check (√) the days and times the student typically demonstrates the target behavior.

	Monday	Tuesday	Wednesday	Thursday	Friday
Before School					
Morning Session					
Recess					
Morning Session					
Lunch					
Afternoon Session					
Recess					
Afternoon Session					
After School					

Art					
Music					
Gym					
Transition Times					
To and From School					

Behavior Influences

Instructional Domain

1. Describe the student's achievement in reading, math, writing, etc.
2. What are the student's academic strengths? Weaknesses?
3. How does the student's performance compare with others in class?
4. Describe what is happening instructionally when the behavior occurs.
5. Describe what the student is expected to be doing at this time.
6. If different from the student, describe what other classmates expected to be doing at this time.
7. Describe how the student works independently.
8. Describe how the student works with classmates.
9. Looking at the scatterplot we completed earlier, is there anything different about instruction at times that the behavior occurs?

Social Domain

1. Describe who and what is near the student's seat.
2. Do either who or what is near the student seem to predict the target behavior?
3. Describe the student's interactions with classmates before the behavior happens.
4. Are classmates involved before the student demonstrates the target behavior?
5. Are classmates involved when the student demonstrates the target behavior?
6. Describe the student's relationships with other students in class.
7. Does the student have friends in class?
8. How does the target behavior affect the student's relationships with classmates?
9. Looking at the scatterplot we completed earlier, is there anything different about the student's social interactions at times that the behavior occurs?

Physical Domain

1. Describe the arrangement of your classroom.
2. Describe where the student sits in the classroom.
3. Describe the area around the student (i.e., overhead projector, windows, bulletin boards).
4. Is the student easily distractible in class? Describe.

5. Looking at the scatterplot we completed earlier, is there anything different about the classroom environment at times that the behavior occurs?

Non-School Domain

1. Describe your contacts with the student's parents/guardians.
2. Describe what you know about the relationship between the student and parent/guardian.
3. Is there anything you believe to be significant happening in the student's life outside of school?
4. Has the student experienced any significant life changes (i.e., death in family, divorce, move)?
5. Is the student currently taking any medications? Name of medication? Reason for taking it?
6. Has the student taken medication in the past? Name of medication? Reason for taking it?

Antecedents & Consequences

1. What would seem to predict a "good" instructional period?
2. What would seem to predict a "poor" instructional period?
3. What would seem to predict "good" social interactions?
4. What would seem to predict "poor" social interactions?
5. What classroom arrangement best supports this student's behavior?
6. What classroom arrangement is most difficult for this student to handle?
7. Are classmates involved after the student demonstrates the target behavior?
8. Describe your response when the behavior occurs.
9. Describe the response of other students who are present when the behavior occurs.
10. Describe the response of adults who are present when the behavior occurs (i.e., aides, parents, etc.).
11. Describe what happens if the student is removed from the classroom because of the behavior.
12. What happens if the student misses instructional time because of the behavior?
13. What happens if other students miss instructional time because of the behavior?
14. Describe the student's interactions with classmates before the behavior happens.

Purpose of Behavior

1. Describe the purpose(s) that this behavior may serve for this student.
2. What could the student "get" from this behavior?
3. What could the student "get out of" with this behavior?

Behavior Usefulness

1. How often does this behavior help the student "get something" or "get out of something"?
2. How long between the times the student demonstrates the behavior and the time that he/she "gets" or "gets out of" something? Immediately? Several minutes? Longer?

Behavior Strengths

1. Does the student have an appropriate behavior that serves the same purpose as the target behavior?
2. How often does the student demonstrate this behavior unprompted?
3. When and where does the student demonstrate this behavior?

Teacher Interview Summary

Instructional Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

Social Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

Physical Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

Non-School Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

Operational Definition of Target Behavior: _____

_____

_____

_____

APPENDIX B

PARENT INTERVIEW FORM

Student: _____ Date: _____

Parent: _____ Interviewer: _____

I'd like to talk to you about your child's experiences at school and home. The more honest you are with me, the more I will be able to help. Nothing you tell me will get your child in trouble.

Operational Definition of Target Behavior (from teacher interview): _____

_____

_____

_____

Indicate with a check (√) when the child typically demonstrates the target behavior at home. Then for each day and time, describe the behavior in more detail.

	Monday	Tuesday	Wednesday	Thursday	Friday
Before School					
Between School & Dinner					
Dinner					
Between Dinner & Bedtime					
During Bedtime Routine					
Other Time (specify):					

Day	Time	Description: Where does behavior happen? Who is present? What is happening before, during, and after the behavior?

Behavior Influences

Instructional Domain

1. Describe your child's attitude towards school.
2. How does your student talk about school at home?
3. Describe your child's relationship with his/her teacher.
4. Describe your child's relationship with his/her peers.
5. Do you think your child understands what is expected of him/her academically?
6. Do you think your child understands what is expected of him/her behaviorally?
7. What types of activities do you think your child enjoys in school?
8. Describe your contacts with your child's teacher and school.
9. What are your expectations for your child at school?

Social Domain

1. How does your child get along with other children?
2. How does your child get along with adults?
3. Does your child have friends at school?
4. Does your child have friends other than school friends?
5. What does your child like to do after school and on weekends?

Non-School Domain

1. Who is in your family?
2. Who lives in your home?
3. Does the target behavior happen at home? Describe this behavior at home.
4. Have you noticed any changes in your child's behavior at home?
5. Have there been any life changes for your child (i.e., divorce, death, move, etc.)?
6. Is your child currently taking any medications? What is the medication and reason for taking it?
7. Has your child taken medication in the past? What was the medication and reason for taking it?
8. Describe your child's morning getting ready for school.
9. Describe your child's after school & evening time.
10. Describe homework time in your home.

Antecedents & Consequences

1. If you know that the target behavior has happened at school, what is your response at home?
2. What seems to predict a "good" behavior day at your home?
3. What seems to predict a "poor" behavior day at your home?
4. If the target behavior happens at home, how do you respond to it?

5. If the target behavior happens at home, how do other adults respond to it?
6. If the target behavior happens at home, how do siblings respond to it?

Purpose of Behavior

1. Describe the function(s) that this behavior may serve for your child.
2. What could your child "get" from this behavior?
3. What could your child "get out of" with this behavior?

Behavior Usefulness

1. How often does this behavior help your child "get something" or "get out of something"?
2. How long between the times your child demonstrates the behavior and the time that he/she "gets" or "gets out of" something? Immediately? Several minutes? Longer?

Behavior Strengths

1. Does your child do something else that is okay, that gets him/her to the same end as this behavior?
2. How often does your child demonstrate this behavior unprompted?
3. When and where does your child demonstrate this behavior?

Parent Interview Summary

Instructional Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

Social Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

Non-School Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

APPENDIX C

STUDENT INTERVIEW FORM

Student: _____ Date: _____

Teacher: _____ Interviewer: _____

Hi! I'd like to talk to you about school so I can help find ways to make school better for you. The more honest you are with me, the more I can help. Nothing you tell me will get you in trouble.

What do you do that usually gets you in trouble at school? (i.e., talking, fighting, unfinished work)

_____

_____

_____

What about _____ (describe target behavior from teacher interview in not reported above)? Do you ever get in trouble for this?

_____

_____

_____

Why do you think you get in trouble for _____ (target behavior)?

_____

_____

_____

What happens just before you get in trouble for _____ (target behavior)?

_____

_____

_____

What happens after you get in trouble for _____ (target behavior)?

_____

_____

_____

Indicate with a check (√) when the student reports getting in trouble for _____ (target behavior).

	Monday	Tuesday	Wednesday	Thursday	Friday

Before School					
Morning Session					
Recess					
Morning Session					
Lunch					
Afternoon Session					
Recess					
Afternoon Session					
After School					
Art					
Music					
Gym					
Hallway Times					
To and From School					

Draw me a picture of your classroom. In your picture, include your desk and your classmates' desks. Show me where the door is and where the windows are. Please put an X on your desk.

Give the student blank paper and a pencil. Encourage them to draw a detailed picture of their classroom.

Behavior Influences

Instructional

1. Is any of your schoolwork too hard for you? If so, what is too hard?
2. Is any of your schoolwork too easy for you? If so, what is too easy?
3. Do you get help in class if you ask for it appropriately?
4. Does your teacher notice when you do good work in class?
5. Do you ever feel that you don't have enough time to finish your work at school? When?
6. Do you ever feel that there is too much time to finish work at school? When?
7. Does it help you when your teacher helps you with your work?
8. Does it help you when a classmate helps you with your work?
9. What is your most favorite class? Why?
10. What is your least favorite class? Why?

Physical

(Use the student's drawing to have him/her show you, as well as tell you, answers to these questions.)

1. Show me your favorite place to work in your classroom.
2. Why is this your most favorite?
3. Show me your least favorite place to work in your classroom.
4. Why is this your least favorite?
5. Show me the place in the room where you get in trouble the most.
6. Show me the place in the room where you get in trouble the least.
7. Is there anything in your classroom that gets in your way when you're trying to learn?
8. Is there anything in your classroom that gets in your way of getting along with other kids in class?

Social

1. Do you have friends in class? Show me on your picture where they sit.
2. Are there kids in y our class who you don't like? Show me where they sit.
3. When you get in trouble, do other kids get in trouble too? Show me where they sit.
4. Are other kids bothered when you _____ in class?
5. Whom in your class do you think your behavior bug?
6. Do other kids bug you in class?

Non-School

1. What happens when you get in trouble at home?
2. Do you get in trouble for _____ at home?
3. What happens when you get in trouble for _____ at home?
4. Do you ever think about things that happen at home or in your neighborhood when you're at school?
5. Is it ever hard to focus on school because of stuff that's happening at home or in your neighborhood?

Antecedents & Consequences

1. What do your friends do when you _____?
2. What does your teacher do when you _____?
3. What do your parents/guardians do when you _____?
4. What happens at school just before you _____?
5. What happens at school just after you _____?
6. What happens at home just before you _____?
7. What happens at home just after you _____?
8. How do you feel after you get in trouble for _____?

Purpose of Behavior

1. What do you want to get when you _____?
2. What do you want to get out of when you _____?

Behavior Usefulness

1. How well is _____working for you?
2. Are you getting/getting out of what you want?

Behavior Strengths

1. Are there other things you can do besides _____ to get what you want without getting in trouble?
2. Tell me about these other things you can do.
3. What happens when you do these things?
4. Are there other things you can do besides _____ to get out of something without getting in trouble?
5. Tell me about these other things you can do.
6. What happens when you do these things?

Student Interview Summary

Instructional Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

Social Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

Physical Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

Non-School Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

APPENDIX D

TEACHER SCATTERPLOT FORM

Student: _____ Teacher: _____

Week(s) of: _____ Interval: 30 minutes _____ 60 minutes _____

Use the symbols below – no mark for low intensity, slash for medium intensity, darkened for high intensity – to describe student's demonstration of the target behavior during the selected interval time, either 30 or 60 minutes. Next to the boxes below, describe what the target behavior looks like at each intensity level.

☐ Low Intensity Behavior Description _____


Medium Intensity Behavior Description _____


High Intensity Behavior Description _____

Time of Day
Thirty Minute Intervals

	M	T	W	R	F	M	T	W	R	F
7:00										
7:30										
8:00										
8:30										
9:00										
9:30										
10:00										
10:30										
11:00										
11:30										
12:00										
12:30										
1:00										
1:30										
2:00										
2:30										
3:00										
3:30										
4:00										
4:30										
5:00										
5:30										

APPENDIX E

CLASSROOM OBSERVATION FORM

Student: _____ Date: _____

Teacher: _____ Location of observation: _____

Observer: _____ Start Time: _____ End Time: _____

Operational Definition of Target Behavior (from teacher interview):

_____

_____

_____

Use the space below for the narrative observation. Include all possible information pertaining to the antecedents and consequences of the target behavior, along with possible environmental influences.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

In addition to a Continuous Observation Log, the following observation methods should be considered as appropriate: event recording, duration recording, momentary time sampling. Data gathered from any additional observations should be included below.

Identify the antecedents and consequences for the observed target behavior, including observational data to support conclusions.

Observation Summary – Antecedents of Behavior:

Instructional Domain

Identify Antecedent	Describe observational evidence supporting the antecedent

Social Domain

Identify Antecedent	Describe observational evidence supporting the antecedent

Physical Domain

Identify Antecedent	Describe observational evidence supporting the antecedent

Observation Summary – Consequences of Behavior

Identify Consequence	Describe observational evidence supporting the antecedent

APPENDIX F

FBA DATA SUMMARY FORM

Definition of Target Behavior:

When asked to work in a cooperative group, Brandon will verbally defy directions, refuse to work (sit and watch with arms crossed), or take other's supplies.

Review all information gathered from scatterplots, interviews, and observations. Briefly summarize what is known across each of the domains: instructional, social, physical, and non-school.

Instructional:

Brandon is a student with average ability. He is easily distracted by supplies or peers around him. Brandon demonstrates problem behaviors when working in a cooperative group regardless of activity or group members. Brandon's peers will tell the teacher about his problem behaviors, and the teacher comes to talk to Brandon about his work in the group. Brandon is removed from the group 50% of the time, and he is then required to complete the work independently. Both Brandon and his teacher feel that he works better in the morning. Brandon stated that he is sad when he gets in trouble, but he likes to get kicked out of the group so that he can work alone. When observed in a small group situation, Brandon took a peers supplies, worked independently, and quietly watched when the group was trying to develop a cooperative plan. He then said that he was going to build his own structure instead of working with the group. However, Brandon did not demonstrate these behaviors when he was in large group instruction.

Social:

Brandon is new to school this year, and he has had difficulty making friends. Brandon reports that he has been teased this year. Although Brandon had many friends before coming to Hawthorne Elementary School, his friends were typically two years younger than himself. Teachers and parent report concern over Brandon's immaturity. When observed, many of Brandon's inattentive behaviors involved inappropriate peer interactions. During large group instruction, Brandon frequently talked to his neighbors. When in a small cooperative group, Brandon talked frequently to his group members. However, very few of these interactions were related to the assigned task. Rather, Brandon worked independently on the project while talking to the peers in his group. Both teachers report that Brandon has difficulty working with all students, not simply a group of select students. Brandon may lack the social skills needed to appropriately maintain social control when working with others, and as a result, he may display the problem behaviors when working with a cooperative group on an academic task.

Physical:

Brandon is easily distracted by the supplies and people near him regardless of where he sits in the classroom. One teacher reported that Brandon worked best when his work space was distanced from that of his peers and that he had the most problems when his work space touched that of his peers. Brandon reported that he liked to work alone at his desk or by the window the most and that he liked to work at a table with other students the least.

Non-School:

Brandon has moved twice during this school year. As a result, he has not developed friendships with other children in his neighborhood. According to his mother, he has only had one friend from school come over to play this year. Brandon's grandfather also died this past Christmas.

Target Behavior is *Most* Likely to Happen When: Brandon is required to work cooperatively with a small group of students during an academic task.

Target Behavior is *Least* Likely to Happen When: Brandon is allowed to freely interact with peers in an unstructured, non-academic task like recess. According to a teacher, Brandon's behaviors within a cooperative group are also decreased when the group is small and he is working with patient students.

Develop a hypothesis that describes the functional relationship between antecedents and consequences. The hypothesis should include: 1) antecedents (instructional, social, physical, non-school) associated with target behavior, 2) the target behavior, and 3) consequences associated with the target behavior.

Hypothesis:
When Brandon is asked to work with a small group of peers on an academic task in a cooperative learning group, he will refuse to participate, disobey instructions, and take peer's supplies in order to escape working instructionally with peers and to gain social control of the situation.

APPENDIX G

DUNCAN INTERVENTION OPTIONS TOOL

Intervention Domains

The Instructional Domain

Task Difficulty	Learning Style	Student Interest	Student Choice	Skill Deficits	Student Motivation
Shortening worksheets	**Academic strategy identification**	**Preferred activities**	**Student menus**	**Individualized instruction**	**Self-monitoring**

The Social Dimension

Student Seating & Grouping	Peer Provocation	Adult Interactions	Student's Social Skills	Student Motivation
Cooperative learning	**Second Step Violation Prevention Program**	**Student Problem-Solving**	**Social skill training**	**Reinforcement strategies**

The Physical Dimension

Auditory Influences	Visual Influences	Personal Kinesthetic Influences	Tactile Influences
Removal of background noise	**Assistive reading software**	**Brain Gym movement program**	**Lesson Plans Including Tactile Modality**

Consequences of Behavior

Gaining Attention From Teacher or Peers	Escaping or Avoiding a Task	Gaining Sensory Stimulation	Gaining Power or Control
Teacher attention to task engagement & ignoring tantrums	**Pre-teaching strategies**	**Hand-mouthing maintained by sensory reinforcers**	**Non-punitive response to student**

APPENDIX H

RESEARCHER NOTES ON MRS. JACKSON'S INTERVIEW

Teacher Interview – Mrs. Jackson (4/29/05)

Behavior Definition-When asked to work in a cooperative group, Brandon will verbally defy directions, refuse to work (sit and watch with arms crossed), or take other's supplies. This occurs 90% of the time he is working in a small group as well as in PE when there is some sort of competition. Problems with peers do not occur on the playground or during his free time. His behaviors will continue as long as an adult is not directly working with his small group. She sees this behavior regularly in language arts where he is not completing homework or participating in class. However, it happens MOST often in social studies (2:10-2:50). Social studies class is based on small group learning and cooperative projects. She has also received reports of similar behavior in music class.

Instructional Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Low-ave achievement in all areas. She doesn't know if he understands what's expected or if he makes all the connections that he needs to in his learning.
- Antecedents-small group, semi-structured work. The group meets to plan for 15 minutes, and by the end of that time, he is demonstrating target behaviors.
- Teacher has to help him complete work and remain focused and on-task when he is working independently. However, he is more likely to do what he is supposed to during this time. He does fidget and play with little toys and open and close his desk frequently.
- Social studies class contains lots of opportunities for small group work, and this time is more problematic for him
- Good/bad instructional time can be predicted based on individual or small group work time.
- Problems occur even if peers let him take the lead in planning the groups activity
- Antecedent-working in small group, Consequence-peers tell (4-5 ignore him) and teacher talks to him, sometimes asked to do work at back table where he is removed from peer interaction, but can still participate in instruction and complete all assignments. He never gets out of doing the work.

Social Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Sits near 4 friends that he talks to frequently
- Teacher has noticed nothing that predicts good or bad day. He always comes in and leaves on good note, he just falls apart when working with a group.
- Although he is developing a few friendships at the end of the year, his inability to work with others in a group is influencing him socially in other settings. Teacher

noticed kids just avoid him or don't want to interact with him in class or on the playground.

- Teacher can't predict good/bad social interactions
- Antecedent-working in small group, Consequence-peers tell and teacher talks to him, sometimes asked to do work at back table where he is removed from peer interaction, but can still participate in instruction and complete all assignments. He never gets out of doing the work.
- Purpose may be to get attention, although teacher has hard time imagining that he likes attention, does not get out of work
- Doesn't know of any positive behaviors that would get the same response, except that he may get positive attention when she praises him in class.
- Teacher thinks he more lacks the skills rather than being rewarded for his behavior
- Only 4-5 out of 24 students ignore his problem behavior

Physical Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Currently sits in the 2nd to last row. Spent most of the year in the front row right by the teacher. Problem behaviors happen regardless. He talks to peers no matter who he sits by.
- He is easily distracted by his materials, the things in his desk, and the people around him.
- No preferable physical setting
- Antecedent-working in small group, Consequence-peers tell and teacher talks to him, sometimes asked to do work at back table where he is removed from peer interaction, but can still participate in instruction and complete all assignments. He never gets out of doing the work. Just moved to different, isolated location.

Non-School Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Occasional phone contacts with parents. Mom is supportive and will follow through for a little bit, but then she does not continue to do what she says that she would (check planner etc)
- Student moved 2 times this year, he is new to school, and grandpa died just before Christmas

APPENDIX I

RESEARCHER NOTES ON MRS. CHEVRIER'S INTERVIEW

Teacher Interview – Chevrier (5/2/05)

Behavior Definition-When asked to work in a cooperative group, Brandon will verbally defy directions, refuse to work (sit and watch with arms crossed), or take other's supplies. This occurs 75% to 80% of the time he is working in a small group. Problems with peers do not occur on the playground or during his free time. His behaviors will continue until an adult intervenes and redirects Brandon or until he is removed from the group. She sees this behavior approximately 3 times a week in both math and science where small group activities are frequent.

Instructional Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Average to low-average ability in math and science, Academic strengths include fractions and creativity
- Brandon has more difficulty working with peers who have teased him in the past. He has recently built friendships, and he works better with these students.
- Brandon likes 1:1 attention therefore he asks frequent questions. He also fidgets with small objects/desk lid continuously throughout instruction
- Frequently talks with classmates who sit near him
- Does better in the morning
- Antecedent-small group cooperative work, consequences-students tell, teacher comes to speak to him and tries to work things out for 5-7 mins, if unsuccessful he is removed from the group and required to do work alone. 50% of the time he has to be removed from the group.
- When working alone, Brandon works well, but he will look/watch the other groups.
- He has worked very well 4 times this year in a group. Those times he was very energetic and liked to please. These times were with all different students.

Social Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Brandon will not have problem behaviors with peers before group interaction. However, as soon as he forms a group he will refuse to work. The other students try to include him and ask him for ideas, but he answers with a shrug.
- Student is immature, but he has begun to develop some friendships
- Peers get tired of working with him in a group so they avoid him
- Good social interactions occur with fewer students, and when he works with patient/more mature students.

Physical Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Currently sits in back, but has sat in front for most of the year. His current placement has been the most successful, the U shape seating was the least successful.
- He is easily distractible in class
- He does best when he has a large personal space to work in, worst when his work space touches that of another student

Non-School Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Only interacted with family during conferences-no problems/concerns that she is aware of

APPENDIX J

RESEARCHER NOTES ON PARENT INTERVIEW

Parent Interview (4/28/05)

Instructional Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Student doesn't say much about school/teacher. Doesn't seem to dislike it, just doesn't talk about it.
- Student used to have many friends in other schools, but not at Hawthorne Elementary School
- Mom doesn't know if student understands what is expected of him academically/behaviorally.
- Occasionally talks with teachers on the phone, got one bad report note sent home last week.
- Expects him to follow directions and get A, B, and C's
- Says he is teased at school. Even though he gets over things quickly at home, he doesn't do the same at school. He will hold grudge against kids that tease him and not work in a group with them. Recently lying about not bringing bathing suit to school because kids tease him about being chubby.
- Has tutor for help with homework
- Difficulties seem to be more related to school than peer interactions at home (possibly because of structure/expectations vs free time in which he can do what he wants)
- Antecedent-teasing, Consequence-avoid peers who tease him

Social Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- He has always had friends 2 grades younger than himself.
- Had tons of friends in his old school, but he has not had friends this year at his new school. Only 1 friend has come over to play.
- No difficulty getting along with other adults
- He has not made friends in his new neighborhood because they all go to CF schools. Sometimes plays with brother who is 2 years older.
- Likes to play computer/PS2 games alone on the weekends
- Cannot predict good or bad day because he always wakes up and starts day well.
- Function-maybe attention or to get his own way.
- Behavior strengths-He is sweet and will ask for hugs and things. He may get attention more appropriately through these behaviors. These sweet behaviors happen daily.
- Mom thinks he may lack skills/maturity

Non-School Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Mom, dad, older brother. No behavioral changes noticed
- Target behavior at home-sometimes has trouble playing with brother. He may have friends over. Friend will want to jump on trampoline, but student will stay inside and play on computer because he wants to do his own thing.
- Recent life events-2 moves, new school, grandpa died at Christmas
- Regular morning, evening and homework routines. No problems
- Antecedents-student is stubborn and does what he wants, Consequences-mom will talk to him about his behavior, he may be grounded, he sends himself to time out in his room (even though mom has never done this) and will come out when ready. He doesn't hold a grudge and will get over things soon on his own.
- Sibling responds by ignoring brother, doing his own thing.

APPENDIX K

RESEARCHER NOTES ON BRANDON'S INTERVIEW

Student Interview (4/29/05)

Instructional Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Gets in trouble more during afternoon classes. He said writer's workshop was when it would happen the most.
- No work is too hard or too easy for him, and he said that he does not ask for help.
- He knows he's done good work when he gets good grades.
- Favorite class-literature when he can pick his own book, least favorite-literature when teacher picks his book.
- Antecedents-small group/cooperative work, Consequence-peers tell, he gets talked to by teacher, kicked out of group, and does work on his own. Parents may or may not talk to him about it at home.
- Purpose-wants to get to work alone
- Usefulness-he used to get kicked out all the time, but not as much lately
- Doesn't know anything else that he could do to get the same result
- He feels sad when he gets in trouble, but happy because he gets to work alone

Social Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Gets in trouble for talking with peers. He didn't have peers at the beginning of the year, but he does now.
- Other kids do not get in trouble too when he does
- Working in groups used to be problematic because he didn't want to work with other kids. He purposefully argued, ignored directions, and took supplies so that the kids would tell on him and he would get to work alone. It worked every time.
- He knows the other kids don't like working with him because he messes the group up. He knows this because they tell on him.
- He named 3 kids that bug him in the class, and said that they tease him
- Influences-new to school, some kids tease him, not having friends
- Antecedents-working with peers in small group, consequences-peers tell on him, and he gets to work alone

Physical Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Talks with 3 girls and 1 boy that sit near him
- Likes to work by the window, at his desk, or at a table alone, does not like to work at a table with other kids. They talk to much so he can't get his work done.
- Other kids talking and his talking with his friends gets in the way when he is trying to learn

- Influence-talks to peers when inappropriate

Non-School Domain (influences, antecedents & consequences, purpose, usefulness, strengths)

- Nothing happens at home if he gets in trouble at school for not working well with peers. Maybe his mom will talk to him for a little bit about it.
- It is hard to concentrate at school because he is thinking about playing his PS2 games at home.

APPENDIX L

COMPLETED OBSERVATION SUMMARY FORM

Identify the antecedents and consequences for the observed target behavior, including observational data to support conclusions.

Observation Summary – Antecedents of Behavior:

Instructional Domain

Identify Antecedent	Describe observational evidence supporting the antecedent
Small group instruction	Didn't work with peers, no cooperation, disrupted work of peers, stole materials,
	Taunting peers, not following instructions
Independent work	Completed work without problem, obeyed rules, worked independently, talked
	and laughed with peers

Social Domain

Identify Antecedent	Describe observational evidence supporting the antecedent
Free to socialize	Talked and interacted positively with peers on his own
Expected to work	Disrupted group, even when working with the peers he got along well with in
collaboratively	other settings

Physical Domain

Identify Antecedent	Describe observational evidence supporting the antecedent
Working at desk	Completed work, talked and laughed with peers, followed directions to complete
	work alone
Work space combined	Disobeying instructions, stealing supplies, taunting peers, working alone instead
with that of peers	of on the group project

Observation Summary – Consequences of Behavior

Identify Consequence	Describe observational evidence supporting the antecedent
Working alone	Peers ignore his problem behavior, he was allowed to build his own structure,
	no response from teacher, did not receive extra attention for his behaviors

APPENDIX M

BEHAVIORAL INTERVENTION PLAN (BIP)

Student Name: Brandon

School: Hawthorne Elementary School **Grade:** 5

Target Behavior:	When asked to work in a cooperative group, Brandon will verbally defy directions, refuse to work (sit and watch with arms crossed), or take other's supplies.
Summary of Assessment Data	**Instructional:** Brandon is a student with average ability. He is easily distracted by supplies or peers around him. Brandon demonstrates problem behaviors when working in a cooperative group regardless of activity or group members. Brandon's peers will tell the teacher about his problem behaviors, and the teacher comes to talk to Brandon about his work in the group. Brandon is removed from the group 50% of the time, and he is then required to complete the work independently. Both Brandon and his teacher feel that he works better in the morning. Brandon stated that he is sad when he gets in trouble, but he likes to get kicked out of the group so that he can work alone. When observed in a small group situation, Brandon took a peer's supplies, worked independently, and quietly watched when the group was trying to develop a cooperative plan. He then said that he was going to build his own structure instead of working with the group. However, Brandon did not demonstrate these behaviors when he was in large group instruction. **Social:** Brandon is new to school this year, and he has had difficulty making friends. Brandon reports that he has been teased this year. Although Brandon had many friends before coming to Hawthorne Elementary School, his friends were typically two years younger than himself. Teachers and parent report concern over Brandon's immaturity. When observed, many of Brandon's inattentive behaviors involved inappropriate peer interactions. During large group instruction, Brandon frequently talked to his neighbors. When in a small cooperative group, Brandon talked frequently to his group members. However, very few of these interactions were related to the assigned task. Rather, Brandon worked

	independently on the project while talking to the peers in his group. Both teachers report that Brandon has difficulty working with all students, not simply a group of select students. **Physical:** Brandon is easily distracted by the supplies and people near him regardless of where he sits in the classroom. One teacher reported that Brandon worked best when his workspace was distanced from that of his peers and that he had the most problems when his workspace touched that of his peers. Brandon reported that he liked to work alone at his desk or by the window the most and that he liked to work at a table with other students the least. **Non-School:** Brandon has moved twice during this school year. As a result, he has not developed friendships with other children in his neighborhood. According to his mother, he has only had one friend from school come over to play this year. Brandon's grandfather also died this past Christmas. **Target Behavior is *Most* Likely to Happen When:** Brandon is required to work cooperatively with a small group of students during an academic task. **Target Behavior is *Least* Likely to Happen When:** Brandon is allowed to freely interact with peers in an unstructured, non-academic task like recess. According to a teacher, Brandon's behaviors within a cooperative group are also decreased when the group is small and he is working with patient students.
Working Hypothesis:	When Brandon is asked to work with a small group of peers on an academic task in a cooperative learning group, he will refuse to participate, disobey instructions, and take peer's supplies in order to escape working instructionally with peers and to gain social control of the situation.
Intervention(s)	**Pre/Post Teaching:** Brandon will meet with the interventionist for 5 minutes before he participates in a cooperative group. During this time, Brandon will be instructed about how he is expected to work throughout the group time. Specifically, Brandon will be reminded that he needs to do his share of the work, respect others' ideas, and work as a team. After the cooperative group work, Brandon

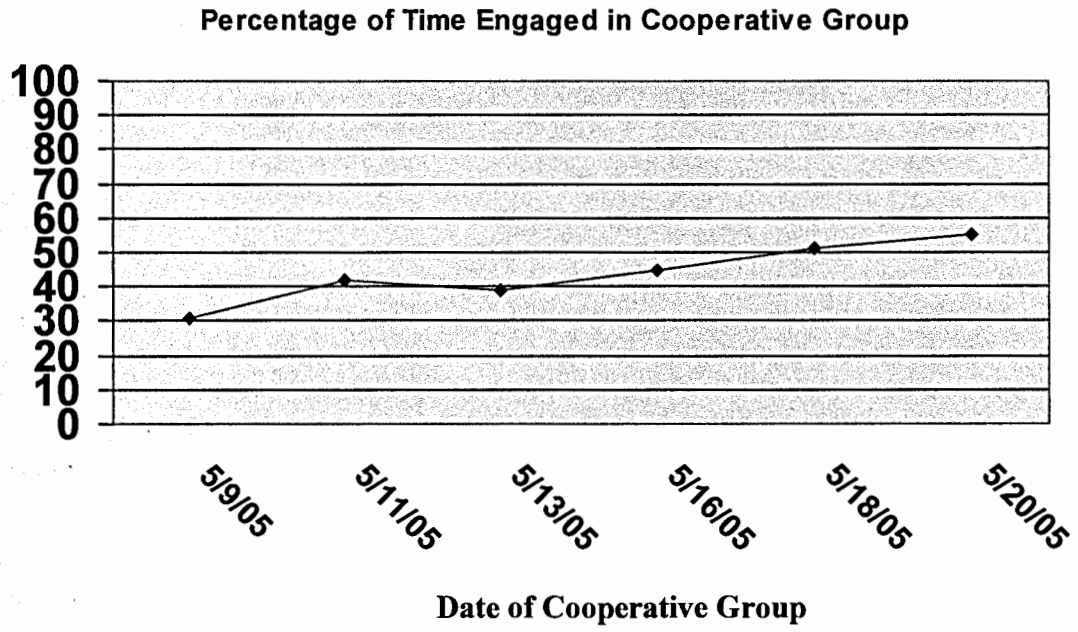
	will again meet with the interventionist for 5 minutes. At this time, he will rate his performance on a 1 to 5 scale in the previously discussed areas. **Coaching:** The interventionist will sit near Brandon during his cooperative group work. When the interventionist observes Brandon violating one of the rules discussed during the pre-teaching, Brandon will be immediately removed from the group. The interventionist will give Brandon immediate feedback on his performance and will discuss appropriate alternative responses with Brandon.

Progress Monitoring Plan

Target Behavior:	When asked to work in a cooperative group, Brandon will verbally defy directions, refuse to work (sit and watch with arms crossed), or take other's supplies.
Observation Method: (e.g., event, time sampling, anecdotal)	Duration Recording will be used to determine the amount of time that Brandon is working cooperatively within the group. Frequency Recording will be used to measure the number of times that Brandon has to be removed from the group for coaching during cooperative work time.
Description of Procedures: (e.g., when observations will be conducted, who will collect the data, where the data will be collected)	Interventionist will contact the 5th grade teachers by e-mail each week. The teachers will let interventionist know when Brandon will be working within a cooperative group and what will be expected of him during that time. The interventionist will conduct coaching and pre/post teaching 3 times per week in the 5th grade classroom. In addition, interventionist will use duration and frequency recording to monitor Brandon's progress during these 3 sessions.

Graph (see attached page for examples): Graph #1: Duration Recording (measure the amount of time that Brandon is working cooperatively within the group.) Graph #2: Frequency Recording (measure the number of times that Brandon has to be removed from the group for coaching during the cooperative work time)

Graph 1



Graph 2