The Effects of Group Communication Processes on Treatment Outcomes in School-based Problem Solving Teams

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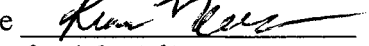
Signature 

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Abstract

The Effects of Group Communication Processes on Treatment Outcomes in School-based Problem Solving Teams

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Verbal communication is the most fundamental activity in school-based consultation. Certain communicative behaviors may be productive in consultative problem solving teams, while the absence of these behaviors or the presence of other behaviors may hinder the problem solving process. There have been few studies of communication in school-based problem solving models involving multiple consultees. Considering the importance of group communication to this team-based approach, there is a need for more empirically derived information to guide consultants in facilitating consultative problem solving meetings. The purpose of this study was to investigate the relationship between three communicative processes and treatment outcomes between two types of consultative problem solving models, the Functional Behavioral Assessment (FBA) model and the Conjoint Behavioral Consultation (CBC) model. Predictions were that there would be a higher proportion of functional, directive, and behavioral communication in cases with large treatment effect sizes. Functional communicative acts are verbal behaviors that satisfy critical problem solving task requirements such as analyzing the problem to identify the nature, extent and seriousness of the problem. Directive communicative acts are verbal behaviors that overtly influence the problem

solving process during consultation, such as questions directed toward consultees to gather more information. Behavioral content communicative acts are verbal behaviors that are focused on observable problem behaviors and the contexts in which they occur, such as asking questions about when a problem behavior occurs. There was a higher average proportion of Operating Procedures communicative acts in cases with small effect sizes and in FBA cases. There was a higher proportion of Behavior Setting communication, and Behavioral (i.e., Behavior and Behavior Setting combined) communication, in cases with large effect sizes. In addition, for FBA cases the proportion of Behavioral communication was higher in cases with large effect sizes, whereas for CBC cases the proportion was higher in cases with small effect sizes. A higher proportion of Process Overt and Directive communication was associated with small effect sizes and the proportion was higher in FBA cases. These results and limitations of the study are discussed along with implications for school psychology practice and future research on school-based problem solving models.

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Chapter 1: Theoretical Framework for School-based Consultation Research

Statement of Problem

Team-based consultation models represent a systematic method through which school personnel can design and implement interventions for students with chronic challenging behaviors (Busse, 1996; Ysseldyke & Marston, 1998). Such models use a systematic approach to problem solving that involves identifying and analyzing problems, data collection, intervention design and implementation, and ongoing monitoring of intervention effects for students (Allen & Graden, 1995; Tilly, Reschly, & Grimes, 1998; Ysseldyke & Marston, 1998). Moving beyond the traditional triadic model of consultation (consultant, consultee, and client) to include parents and other school professionals, team-based consultation models are gaining popularity in school settings (Gutkin, 1993b; Safran & Safran, 1996; Zins & Erchul, 1995).

Verbal communication plays an important role in the performance of consultative problem solving teams. Certain communicative behaviors may be productive in team discussions, while the absence of these behaviors or the presence of other behaviors may hinder the problem solving process. For example, a higher incidence of communicative acts that facilitate the accomplishment of specific task objectives has been associated with higher quality decisions or outcomes as rated by trained observers (Hirokawa, 1988).

In the school consultation literature, researchers have studied the communicative process and have identified some variables that may predict plan implementation and effective problem solutions as judged by consultees. However, the majority of studies

reviewed involved time-limited consultation sessions regarding real or imagined students (Busse, Kratochwill, & Elliott, 1999; Gutkin, 1996; Hughes & DeForest, 1993; Hughes, Erchul, Yoon, Jackson & Henington, 1997; Sheridan, 1997) in laboratory settings with consultant and consultee dyads (Busse et al., 1999; Erchul, Sheridan, Ryan, Grissom, & Killough, 1999; Sheridan, 1997).

Previous research often utilized measures of perceptions of consultation relationships as indicators of successful outcomes as opposed to child treatment outcomes (e.g., Gutkin, 1996; Hughes & DeForest, 1993; for exceptions see Busse, Kratochwill & Elliott, 1995; Busse et al., 1999). Graduate students most often served as consultants in these studies (e.g., Benes, Gutkin, & Kramer, 1991; Hughes & DeForest, 1992; Witt et al., 1991), and consultation was conducted either with experimentally contrived consultation cases (e.g., Witt et al., 1991) or with students receiving public school services (e.g., Busse, 1996; Hughes & DeForest, 1992). Only a small minority of students in some studies (e.g., Busse, 1996) represent the most challenging population of students (i.e., currently receiving services as students with emotional/behavioral disabilities) in natural school settings.

A review of recent literature revealed no studies that have examined the function of verbal communication among members of a consultative problem solving team and the impact on child treatment outcomes. In addition, few studies have examined the consultation process with the most challenging population of students, those with chronic patterns of problem behaviors that require highly individualized educational and behavioral support services (Sugai, Sprague, Horner & Walker, 2000). Considering the

importance of understanding communication and group functioning to this problem solving team approach, there is a need for more empirical data to support these methodologies specific to school consultation practice (Erchul et al., 1999; Gresham & Kendall, 1987; Gutkin, 1993a; Gutkin, 1993b; Gutkin & Curtis, 1990; Zins & Erchul, 1995).

Purpose of Study

The purpose of this study was to investigate the relationship between three communicative processes and treatment outcomes. The three communicative processes were functional communicative acts, directive communicative behaviors, and behavioral content communication. Functional communicative acts are verbal behaviors that satisfy critical problem solving task requirements such as analyzing the problem to identify the nature, extent and seriousness of the problem (e.g., "Do you think his behavior is impacting his ability to learn?"). Directive communicative acts are verbal behaviors that overtly influence the problem solving process during consultation, such as elicitors or questions directed toward consultees to gather more information or clarify issues (e.g., "Can you tell me more about what you mean by defensive behaviors?") or summarization statements that review information discussed earlier in the meeting (e.g., "So the two problem behaviors that we have identified are off-task and talking out of turn"). Behavioral content communicative acts are verbal behaviors that are focused on observable problem behaviors and the contexts in which they occur, such as asking questions or making a statement about when a problem behavior occurs (e.g., "Jason hits other students when he isn't first in line").

Description of Terms

The following is a description of the two types of problem solving methods that were analyzed in the current study. Functional Behavioral Assessment (FBA) is a systematic assessment-based method of gathering information from multiple sources to identify the student's function or reason for engaging in challenging behaviors, and then, designing interventions based on the hypothesized function of the behavior (Lane, Umbreit & Beebe-Frankenberger, 1999; Lewis & Sugai, 1996). Conjoint Behavioral Consultation (CBC) is an expansion of the traditional Behavioral Consultation (BC) model that includes parents, the student, and other school personnel in a systematic process of exploring variables contributing to problematic behaviors and using empirically validated interventions to address challenging behaviors. In both models, the assessment and intervention activities are organized and executed through the verbal exchange among team members.

The term "problem solving teams" is used to emphasize the team-based, collaborative nature of the problem solving process of both the FBA and CBC models. The terms "consultant" and "consultee" from the consultation literature are also used, as the school-based participants (consultee) are the agents working directly with the client and the research team assistants (consultants) are responsible for facilitating the problem solving process through this indirect service delivery model. The term "case type" refers to the type of problem solving model employed (i.e., FBA or CBC) that varied across the cases examined in the current study. Finally, the term "treatment effect size" refers to the quantitative measure of the treatment outcome for the cases included in the current study,

defined as the difference between observable behaviors in the baseline and intervention phases.

The FBA and CBC models were applied to single cases of students with emotional/behavioral disturbance (E/BD) exhibiting chronic challenging behaviors in the classroom. Students who are emotionally/behaviorally disturbed have exhibited, over a long period of time and to a marked degree, one or more of the following: an inability to learn, to build or maintain satisfactory interpersonal relationships, inappropriate types of behavior or feelings, general pervasive mood of unhappiness, and/or a tendency to develop physical symptoms or fears associated with personal or school problems. These characteristics adversely affect their educational performance and require specially designed instruction (Washington Administrative Code, 2000). The students in this study had histories of office discipline referrals and were selected by teachers and school staff based on their lack of responsiveness to previous intervention attempts in the classroom.

This study focused on the group problem solving process, defined as the communication process in which group members engage when their task is to overcome some unsatisfactory situation or obstacle to achieving a goal (Hirokawa & Salazar, 1999). The verbal interactions among team members in both problem solving models were analyzed with two methods of content coding, one designed specifically for consultation analysis (Consultation Analysis Record, or CAR, Bergan & Tombari, 1975) and the other devised from generally accepted requirements for effective group decision making according to the Functional Theory of group communication (Gouran, Hirokawa, Julian, & Leatham, 1993; Hirokawa, 1980;1985;1988). The effect of the FBA- and CBC-based

interventions was determined through statistical analysis of repeated measures from baseline to treatment phases in the single cases.

Chapter 2: Theoretical Framework for Group Communication Research

Consultative Problem Solving and Functional Theory of Group Communication

Given the importance of understanding group functioning and communication in school-based problem solving teams, school consultation researchers would benefit from exploring the small group communication theories and methodologies. In the small group communication literature, researchers have identified process variables related to the quality of problem solving outcomes as judged by trained observers evaluating the reasonableness and fairness of group decisions (e.g., Hirokawa, 1988). For example, communication positively impacts the process and outcomes when specific acts bring the group closer to satisfying important requirements of effective decision making, such as assessing the problematic situation and acceptable courses of action (Hirokawa, 1988). Hirokawa (1988) illustrated that groups arrived at higher quality decisions when the group was able to accomplish certain critical task requirements. In contrast, the group's inability to perform these decisional functions had a negative impact on the quality (i.e., reasonableness and fairness) of their decision.

The theoretical foundation upon which these studies are based is the Functional Theory of group communication. From this perspective, every decision-making or problem-solving task imposes certain requirements or task functions that must be satisfied (Hirokawa, 1985;1988; Hirokawa & Salazar, 1999). Effective group decision making or problem solving depends upon several critical requirements of the group: an established set of operating procedures, an appropriate understanding of the problematic situation, generating a number of appropriate solutions to solving the problem,

establishing criteria for evaluating alternative solutions to solving the problem, and evaluating both the positive and negative aspects of each alternative before deciding on a final solution (Hirokawa 1985;1988). In the practice of school consultation, examples of each task requirement may include the following: establishing a set of operating procedures (e.g., discussing how the group should organize and structure the discussion to meet their goals and objectives), problem analysis (e.g., analyzing possible causes and environmental contingencies maintaining a problem behavior), generating alternative solutions (e.g., coming up with feasible classroom-based interventions to address the problem behavior), establishing criteria for evaluating solutions (e.g., discussing what a good intervention would look like), and evaluating potential solutions (e.g., discussing potential negative consequences of the intervention plan, such as requiring too much time of the teacher).

Underlying this functional theory are basic assumptions regarding problem-solving or decision-making groups. The members of the group are motivated to make an appropriate choice that is not obvious to the group. The collective resources of the group regarding the particular task exceed those of individual members, and the requisites of the task are specifiable and within the intellectual capabilities of the group. Communication is the medium through which these task requirements are accomplished, which in turn ultimately affects how outcomes of the group process are achieved (Hirokawa, 1988). The function is the effect or consequence that communicative behavior has on the group system (Poole, 1999).

In school-based problem-solving, the obstacle to be overcome is the student's lack of progress in academics or chronic behavioral challenges. The goal is to influence student progress in the area of concern, through the design and implementation of quality interventions that can reasonably be implemented within the classroom. The critical task requirements are the problem solving stages as identified by each model, and the FBA and CBC models are essentially procedural guidelines employed by school personnel to design intervention plans. For example, in the initial stage both models require teams to establish an operational definition of the problem behavior. The outcome of the group process is the intervention plan that directly informs the activities of participants (consultees) in their interactions with the student following the team meeting.

Communication is the most fundamental activity in school-based consultation (Martens, Erchul & Witt, 1992; Witt, 1990). Consultation is, by definition, an indirect model of service delivery through which one professional (e.g., a school psychologist) engages in a face-to-face verbal interaction with other professionals for the purpose of addressing a child's learning or behavior problem (Gutkin & Curtis, 1990). However, there have been few studies of communication in problem solving models involving multiple consultees (see Erchul et al., 1999, for review; see Sheridan, 1997 for an exception), and there is relatively little empirical data to guide school-based consultants in communicating with consultees (Gutkin & Nemeth, 1997; Witt, 1990). Considering the importance of understanding group communication in this team-based approach, there is clearly a need for more empirically derived information to guide consultants in what

should be said and done in consultation (Erchul et al.,1999; Gutkin, 1993a; Gutkin, 1993b; Gutkin & Curtis, 1990; Witt, 1990).

The current study examined relationships between both the content (what is said) and process (how it is said) of school-based collaborative team communication and child treatment outcomes. Based on a series of studies testing the functional perspective in small group decision-making tasks and generally accepted requirements for effective group decision making, the Problem Solving Functional coding system (PSF) was designed to assess the incidence of functional communicative acts in the team discussions (Gouran et al., 1999; Hirokawa, 1980;1985;1988) (see Appendix A, page 154). For the purpose of this study, "functional communicative acts" are defined as those verbal behaviors that satisfy one of the critical task requirements as specified in the functional theory (Gouran et al., 1999). The specific functions and behavioral categories were modified from Hirokawa's (1980) Function-Oriented Interaction Analysis System (FOIAS) to make them relevant to the school-based problem solving process. A two-level, dynamic analysis system was created. A dynamic analysis system contains mutually exclusive and exhaustive categories so that each communicative unit is only coded into one category (Hirokawa, 1980).

With the PSF coding system, each thought unit was coded for the following: source (indicates the person speaking), problem solving function (indicates the general task-achievement function), and purpose of the utterance (indicates the seven behavioral categories). The five Problem Solving Functions are the general task-achievement functions of the communicative utterances (e.g., establishing operating procedures). The

specific purpose of the utterance is identified by the seven behavioral categories. This more specific function relates to the type of verbal action conveyed by the message (e.g., summarizing), which conveys a broader task-achievement function within the discussion (see Appendix B, page 155).

Using the PSF coding system, examples of a communicative acts which satisfy problem solving task requirements are the following: (1) Operating Procedures, or deciding what needs to be accomplished during the course of a meeting, e.g., "Okay, our goal for today is to come up with a set of functional hypotheses that everyone agrees on"; (2) Problem Analysis, or discussing possible causes and environmental contingencies maintaining the problem behavior, e.g., "Do you think he is acting out because the work is too hard for him?"; (3) Generating Alternative Solutions, e.g., "...or how about if we just let him sit in a quiet space and work, and you can check on him every 5 minutes?"; (4) Criteria for Evaluating Alternative Solutions, e.g., "The incentive would have to be something that he really likes or he won't buy in"; and (5) Evaluation of the positive and negative qualities of each solution or intervention choice, e.g., "I don't think he's going to like having to check in with you when he comes to school. He may reject that idea." (see Appendix B for additional examples).

The PSF coding system was used to determine whether there were systematic relationships between functional communicative behaviors among members of school-based problem solving teams and child treatment outcomes, and whether these relationships varied with the type of treatment (i.e., FBA or CBC problem solving model). According to the functional perspective, certain communicative behaviors (e.g.,

establishing operating procedures) may be productive in consultative problem solving teams, while the absence of these behaviors or the presence of other behaviors may hinder the problem solving process (Hirokawa, 1988). The PSF coding system designed specifically to measure the incidence of functional communicative acts in a team approach provided the framework through which relationships between the actual verbal behaviors of consultants and consultees and the consultation-related outcomes were analyzed.

Consultative Problem Solving and Behavioral Communication

Behavioral consultation is a problem solving model designed to help consultees (i.e., teachers, parents) define the problems they face in working with clients (i.e., students), design and implement intervention plans to solve the problems, and evaluate the effectiveness of the plans implemented (Bergan & Kratochwill, 1990b). There are four stages in the problem solving process: (1) problem identification (i.e., data collection and specification of the problem behavior in terms of a discrepancy between the observed and desired level of incidence of the behavior), (2) problem analysis (i.e., identifying variables influencing the behavior and developing plans to solve the problem), (3) plan implementation (i.e., implementation of the intervention and data collection regarding behavior change), (4) problem evaluation (i.e., determining plan effectiveness) (Bergan & Kratochwill, 1990b).

This consultative problem solving model involves the consultee(s) in the problem solving process and encourages the development of problem solving skills in the consultee(s). Psychological principles are applied in helping the consultee understand the

connection between the problem behaviors of the client and the environmental context within which they occur (i.e., in connection with the presence or absence of a particular person, or in certain school settings such as structured seatwork). Direct observations of client behavior are used to define problem behaviors, design interventions, and evaluate potential solutions and their outcomes. Considering problem behaviors from a consultative problem solving framework encourages data-based decision-making and places the responsibility for achieving problem solving goals on the participants (Bergan & Kratochwill, 1990). Thus, the verbal interaction that occurs among participants in consultative problem solving sessions should be related to the effectiveness of problem solving and intervention outcomes.

The Consultation Analysis Record (CAR) is a content coding scheme designed specifically for consultation analysis to provide indices of verbalizations deemed important in behavioral consultation (Bergan & Tombari, 1975). The CAR has been used extensively in research of consultation dyads (e.g., Benes et al., 1991; Bergan & Tombari, 1975; Busse, 1996; Busse et al., 1999; Curtis & Watson, 1980; Gutkin, 1996; Hughes & DeForest, 1993; McDougall, Reschly, & Corkery, 1988; Tombari & Bergan, 1978). The CAR was used in the current study to analyze both the content and process of the school-based problem solving models in relation to child treatment outcomes, and whether or not these relationships differed within the FBA and CBC models (see Appendix C, pp 158).

Using the CAR, verbal messages were coded into four categories: (1) Source (indicates the person speaking), (2) Content (what is being talked about), (3) Process (the

kind of verbal action conveyed in a message), and (4) Control (the potential influence of a verbalization by one participation on another). These categories were further broken down into subcategories specifying aspects of each classification: (1) Source (Consultant or Consultee, specified as parent, teacher, student or other); (2) Content (Background Environment, Behavior Setting, Behavior, Individual Characteristics, Observation, Plan, or Other); (3) Process (Specification, Positive Evaluation, Negative Evaluation, Inference, Summarization, Positive Validation, or Negative Validation); and (4) Control (Elicitor or Emitter). The CAR was utilized in the current study, in addition to the PSF coding system, to measure two other variables of interest in the consultation literature, specifically behavioral content communication and directive communication (see Appendix D, pp 159, for a brief overview of the CAR codes).

A content variable of interest in considering collaborative team-based approaches is the extent to which team discussions are focused on observable problem behaviors and the contexts in which they occur (hereafter referred to as "behavioral content" communicative acts). School-based problem solving models are generally based on behavioral and ecological approaches to assessment and intervention (Allen & Graden, 1995; Gutkin & Curtis, 1990; Zins & Erchul, 1995). Behavioral approaches stress the importance of specifically defining and clarifying concerns for behaviors in operational, measurable terms, focusing on direct assessments of the behaviors and the environmental stimuli that may be influencing behaviors. This emphasis on observable behaviors should directly inform intervention strategies that are based on empirically validated laws of behavioral change (Fuchs & Fuchs, 1989).

This conceptualization differs markedly from the medical model upon which other psychological services (i.e., assessment) are based, which postulates that psychoeducational problems are the result of internal states of individuals (Gutkin & Curtis, 1990). This traditional medical approach to assessment, diagnosis, and treatment of individuals may result in team discussions that focus on individual characteristics and inferences about background environment that are not amenable to change through school-based interventions. For example, a precise behavioral description provides specific information regarding the concerns for the student (e.g., "Jessie is hitting other students."), as opposed to nonspecific traits (e.g., "Jessie's lack of impulse control is getting him into trouble.") (Bergan & Kratochwill, 1990b).

Utilizing the CAR, behavioral content communication is represented by the content codes of Behavior and Behavior Setting. The Behavior subcategory identifies statements about 'what the client does', which includes utterances dealing with the client's overt actions (e.g., talking and walking) and task currently performed by the client, the strength of the behavior, records of the behavior (e.g., graphs or anecdotal records), and behavioral goals (Bergan & Kratochwill, 1990b, p. 50). For example, "How often does Jessie hit other students?" is coded as a behavior content subcategory. The description of this subcategory is modified slightly from Bergan and Kratochwill's (1990b) description, which also included covert processes (e.g., thinking and feeling) that are judged by the author to be inferential in nature and not in reference to observable behaviors.

In contrast, inferences about student traits that are not amenable to change through school-based interventions are represented by the Individual Characteristic content code. The Individual Characteristics subcategory includes verbalizations about individual attributes of the client, referring to conditions or states of the individual (i.e., intellectual, personality, physical, and neurological characteristics) rather than verbalizations about behavior (Bergan & Kratochwill, 1990b). For example, "Jessie has a hot temper.", would be coded as an Individual Characteristic content category. Discussing conditions or states of an individual and assigning the perceived cause of behavior to characteristics that are not amenable to change (i.e., intelligence) is not likely to lead to feasible intervention planning. Focusing on precise definitions of observable behaviors, as opposed to inferences about attributes, should directly inform plans for assessment and intervention to change the problem behavior.

The Behavior Setting subcategory includes verbalizations referring to antecedent (events that precede the behavior), consequent (events that occur immediately after the behavior and may control the probability of occurrence), and sequential conditions (the time of day or day of week when behaviors typically occur or the patterning of antecedent and consequent conditions across a series of occasions) surrounding behaviors (Bergan & Kratochwill, 1990b). For example, "Alice tends to do her best work in the afternoons.", is coded as a Behavior-Setting content category (also referred to as a "behavioral content" code for the purpose of this study). As conditions in the immediate environment are considered to be central determinants of the problem behaviors (Bergan

& Kratochwill, 1990b), it was predicted that an emphasis on these conditions during problem solving discussions would provide useful information for intervention planning.

The current study examined the content of team discussions in both problem solving models to determine whether there was a systematic relationship between behavioral content communication and intervention effects, and whether this relationship varied with the type of treatment. A higher incidence of behavioral content verbalizations (Behavior and Behavior Setting), as opposed to trait content verbalizations (Individual Characteristic), was expected to result in more efficient problem solving and practical intervention plans focusing on decreasing observable behaviors that were amenable to change.

Consultative Problem Solving and Directive Communication

A process variable of particular interest in considering collaborative team-based approaches was the impact of consultant and consultee leadership or directiveness on outcomes. Directive consultation is defined as verbal behaviors that served to direct or control the consultation process toward accomplishing the objectives of the model (Gutkin, 1996). Directive behaviors are observed when consultants "overtly employ(ed) their professional expertise to influence problem solving during consultation" (p. 180).

In part, the accuracy and efficiency with which the team-based problem solving process is conducted relies on the skills of the consultant to lead team discussions toward accomplishing the objectives of the problem solving model (e.g., problem definition and problem analysis). Previous studies have shown that consultant leadership behaviors were positively related to interview quality or child treatment outcomes (Busse, 1996; Gutkin,

1996; Sheridan, 1997). In addition, studies have demonstrated that teachers prefer consultants who are more directive (Erchul, 1987).

However, these findings are in contrast with other studies which have only found marginal relationships between consultant directiveness and outcomes (e.g., Erchul et al., 1999; Witt et al.,1991) or relationships in the opposite direction (Erchul & Chewning, 1990; Hughes & DeForest, 1993). Gutkin (1996) suggested that, "Consultants and consultees both play positive leadership roles in relationship to the content being discussed during consultation, while consultants may make unique contributions to the area of guiding the problem solving process." (p. 214). Consultants and consultees may both contribute to the consultation process, as consultees supply most of the content of the discussion, based on their direct contact and experience with the client, while consultants are responsible for structuring and guiding the overall process (Zins & Erchul, 1995).

A review of verbal interaction studies in consultation revealed only one study on the impact of directive consultant communication in problem solving models involving multiple consultees (see Erchul et al., 1999, for review). In a comparative study of Behavioral Consultation (BC) BC and Conjoint Behavioral Consultation (CBC), Sheridan (1997) demonstrated that consultants directed more of the discussion in CBC than in consultation with teachers only, and that parents and teachers contributed equally to CBC problem identification interviews. Sheridan's (1997) findings suggest that the added complexity of a second consultee warranted more deliberate and active attempts to structure the discussion. In these group problem solving models, consultant use of

directive verbalizations may be necessary to guide the consultation process, facilitating effective teamwork and adherence to the problem solving objectives.

In the present study, the CAR was used to determine whether there was a systematic relationship between the proportion of consultant and consultee directive behaviors (Process Overt, Summarization and Elicitors) and intervention effects, exploring whether this relationship varied with the type of treatment (FBA or CBC). Directive communicative acts were identified by three categories in the CAR. (1) Elicitor control codes (questions directed toward consultees to gather information or clarify issues, e.g.,"Can you tell me what you mean by 'bad attitude'"?), (2) Summarization process codes (verbalizations that provide or call for review of information, e.g., "It sounds like we're all in agreement that the primary behavior of concern is talking out."), and (3) Process Overt content codes (overt statements about the problem solving process itself rather than the problem behavior being discussed: e.g., "We need to have a summary statement about the function before we can move to intervention planning."), are all examples of consultants directing the problem solving process (Busse, 1996; Gutkin, 1999).

The Process Overt content code was not in the initial design of the CAR, but was added by Gutkin (1996) to identify "verbalizations that addressed the problem solving process itself rather than the specifics of a presenting problem" (p. 204). Such efforts to redirect conversation toward task objectives (e.g., "Before we discuss problem solutions, we should focus on defining the precise nature of the problem.") have been demonstrated to enhance problem solving skills of school professionals and facilitate progress toward

goals (Gutkin, 1996).Gutkin (1996) added the Process Overt category based on the assumption that these types of statements would be indicative of attempts by consultants to redirect an interaction (i.e., from brainstorming to problem analysis), and that providing consultees with a 'cognitive model of the problem solving process' would enhance the problem solving process (p. 204). The Process Overt content code was included in the current study to examine the relationship between the proportion of directive consultant behaviors and treatment effect size, while exploring whether or not this relationship differed across the FBA and CBC cases.

Consultative Problem Solving Models

The present study focused on the three types of verbal communicative behaviors identified in this review, specifically the functional communicative acts, directive behaviors, and behavioral content verbalizations, each presumed to be positively related to intervention effects resulting from FBA and CBC problem solving processes. This study also explored whether or not there were differences in these relationships between the FBA and CBC models.

The two team-based problem-solving models of interest in the current study were the FBA and CBC models. FBA is a systematic approach to gathering information and formulating hypotheses about environmental variables that are potentially influencing behavior (Lewis & Sugai, 1996; O'Neill, Horner, Albin, Sprague, Storey, & Newton, 1997). Underlying this approach is the assumption that challenging behaviors serve a function or purpose for the student, and the behavior will continue to occur as long as it continues to serve that function (Kern & Dunlap, 1998). Information is gathered from

multiple sources to identify the function(s) of challenging behaviors and environmental variables that can reliably predict the occurrence and maintenance of the challenging behaviors. The assessment information directly informs the multi-component behavior support plan based on the hypothesized function of the behavior (Lane et al.,1999; Lewis & Sugai, 1996).

Functional approaches to assessment have come to be regarded as best practice in both clinical research and applied settings (Iwata et al., 2000; Vollmer & Northup, 1996). Research has indicated that information from FBAs can be extremely valuable in designing positive behavioral support plans for students with severe emotional and behavioral disabilities (e.g., Autism) (Iwata et al., 1994). Empirical support for the effectiveness of this practice for students with or at-risk for emotional/behavioral difficulties is less prevalent (Fox, Conroy, & Heckaman, 1998; Nelson, 1999; Stage, 2000) but is emerging to support the application of FBA with this population (e.g., Blair, Umbreit, & Bos, 1999; Kamps et al., 1995; Lewis & Sugai, 1996; Meyer, 1999). A review of recent research found no studies addressing the communication that occurs during the problem solving process of conducting FBAs.

Behavioral Consultation (BC) is an indirect form of service delivery in which school psychologists and teachers work together to address academic, social, or behavioral needs of students (Sheridan, 1997). Conjoint Behavioral Consultation (CBC) is an expansion of the traditional behavioral consultation model, and involves the school psychologist consulting conjointly with the child's parent and teacher together to assess and treat behaviors across home and school settings (Sheridan, 1997). Within a problem

solving framework, school practitioners conduct interviews based on behavior analytic principles to identify problem behaviors and explore the antecedents and consequences of behaviors (Kratochwill, Elliott, & Busse, 1995). Variables influencing frequency, intensity, and/or duration of problem behavior are discussed (Fuchs & Fuchs, 1989), as well as skills and/or conditions contributing to the occurrence of the target behavior across settings (Sheridan & Colton, 1994). Following this assessment, behavioral intervention strategies are then employed (e.g., daily positive home notes, group contingencies, points awarded for appropriate behaviors, goal setting and self-monitoring) (e.g., Galloway & Sheridan, 1994; Sheridan & Colton, 1994). Empirical support exists for the BC and CBC models in reducing problem behaviors and increasing desirable behaviors (e.g., Achenbaum & Reynolds, 1981; Heron & Catera, 1980; Jason, Ferone, & Anderegg, 1979; Kratochwill et al., 1995).

The FBA model in the current study was distinct in that the model was assessment driven. The direct and indirect functional assessments were used to formulate hypotheses about why problem behaviors occurred in particular settings, and these hypotheses directly informed the behavior support planning. This model emphasized that problem behaviors were grounded in social context rather than the student's personality, thereby de-emphasizing trait-based explanations of problem behaviors and emphasizing the environmental contingencies surrounding behaviors. The FBA model used a competing pathways model as a conceptual organizer and as a means of developing testable hypotheses about potential functions and contingencies surrounding problem behaviors (see Appendix E, pp. 159). Finally, the FBA model emphasized multi-component

interventions, focusing on preventing the problem behaviors from occurring, teaching new skills, and arranging more effective and efficient environmental contingencies that increased prosocial behaviors and reduced the likelihood that problem behaviors would occur.

In contrast, the CBC model did not rely on such an extensive assessment phase, but rather was based on indirect methods of gathering information during the team meetings with parents and teachers as the primary informants and direct behavioral observations. The focus was on the consultees as primary informants regarding the observed behaviors and the environmental contingencies surrounding the behaviors. Based on the information gathered through the CBC process, intervention recommendations were selected from a battery of empirically-validated interventions (Stage & Quiroz, 1997) (i.e., Differential reinforcement of other behaviors, group contingencies, or self-management strategies) which focused primarily on the manipulation of consequences pertaining to the problem behavior.

The BC model has been criticized for the exclusive focus on maintaining consequences in behavioral interventions (e.g., group contingencies or response costs) without attention to antecedents or prevention of problem behaviors as in the FBA model (Gresham, 1991). Conventional behavioral interventions that focus exclusively on suppressing undesirable behavior may not produce generalizable effects (Gresham & Noell, 1998; Kern & Dunlap, 1998). Previous research has demonstrated that behavioral interventions are more likely to be successful if the approach involves multiple elements, focused on manipulating the environment to reduce the incidence of disruptive behavior,

while also teaching a positive alternative behavior (cf. Stage & Quiroz, 1997; e.g., Iwata et al., 1994; Taylor & Miller, 1997;). In addition, as the BC model does not include extensive assessment and intervention based specifically on the function of problem behaviors, researchers have suggested that the intervention may not effectively address the student's unique learning needs (Tilly, Reschly, & Grimes, 1998).

The FBA model has also been criticized based on the extensive length of time required to conduct FBAs and the high skill-level required to accurately complete FBAs (Gable, 1999). The quality of the behavioral support plan for students hinges on the accuracy and completeness of the FBA, and incomplete assessment can lead to false assumptions regarding behavioral causes and ineffective intervention formulation (Gable, 1999; Nelson, 1999). Compared to the CBC model in the current study, participation in the FBA model required more time from school-based personnel in conducting the assessments. In addition, more time lapsed between the initial referral and the actual intervention implementation while the research team compiled assessment data and implemented interventions to verify hypotheses. Previous research findings have suggested that even when such extensive assessments are conducted that they may not lead to more effective interventions for all students (Nelson et al., 1999).

In the school consultation literature, the extent to which FBA models and CBC models comparatively provide beneficial treatment outcomes has been explored. Schill, Kratochwill, and Elliott (1998) compared the effectiveness of two consultation approaches, one utilizing functional assessment methods to develop behavioral support plans and the other using a self-help technical assistance procedure within a BC

framework. Although effect sizes differed across conditions (ES = .84 and ES= .52 for FBA and CBC respectively), the difference was not statistically significant due to lack of power in the limited sample size, variability across different treatments, and problems with the statistical analyses employed. In another meta-analytic study, Stage and Quiroz (1997) compared 16 different behavioral interventions (including FBA) and found significant differences only between group contingencies (i.e., group members are rewarded collectively by performing to a specific standard, *ES*=1.02) and cognitive-behavioral interventions (*ES*=.36). Interventions based on FBAs were less effective than more traditional approaches such as group contingencies, self-management (i.e., interventions that relied on self-monitoring, evaluation, and reinforcement), and differential reinforcement (i.e., reinforcement of low rates or the absence of disruptive behaviors (Stage & Quiroz, 1997). These empirically-validated interventions are the types of behavioral interventions that were recommended to school-based teams participating in the CBC model in the current study.

Fox, Conroy and Heckaman (1998) refer to a need in FBA research for "rival hypothesis validity", or studies to establish whether a "function-based intervention reduce(s) challenging behavior more than an intervention not based on that function" (p. 31). The data to support that FBA data leads to better treatment selection and outcomes has not been clearly demonstrated (Braden & Krathochwill, 1997).

The differences inherent in the FBA and CBC models suggested that the content and process of team-based problem solving meetings based on these models would also be different. Based on these differences, it was predicted that differences would be

observed in the relative proportion of communicative behaviors emitted during the meetings in relation to treatment outcomes across the FBA and CBC cases.

For example, given that the FBA model specifically emphasized the social context within which problem behaviors occur, it was expected that there would be more behaviorally focused communication (i.e., Behavior and Behavior Setting communicative acts) and less trait-based explanations for problem behaviors (i.e., Individual Characteristics communicative acts) in the FBA cases than in the CBC cases. In addition, teams utilizing the FBA model were likely to spend time discussing the results of the extensive assessment and hypothesis-testing phases, which directly informed the intervention planning phase. Whereas, the teams utilizing the CBC model were more likely to discuss behaviors and the potential factors influencing those behaviors informally, using the teachers as the primary informants, and interventions were to be selected from a battery of empirically-validated interventions.

Because adherence to the FBA model required a more complex assessment process, it was also predicted that there would be differences in how the problem solving process was approached by team members during these meetings. The specific behaviors and the contexts within which they occurred would likely be discussed in more depth during the FBA meetings compared to the CBC meetings, accounting for a greater proportion of Behavior and Behavior Setting communicative acts in the FBA cases.

Thus, case type (i.e., FBA or CBC) was included as an independent variable to investigate whether or not there were differences in the functional, behavioral and directive communication between the FBA and CBC cases. Specific predictions

regarding the extent of behavioral communication were stated based on the differences inherent in the two models regarding the functional analysis of problem behaviors and consideration of the environmental contingencies surrounding them. Regarding the functional communication and directive communication, case type was included as an exploratory variable to investigate whether or not there were differences between the FBA and CBC cases in these types of communication. Specific predictions regarding the direction of the differences in functional communication and directive communication were not stated.

Chapter 3: Research Questions

The Problem Solving Functions coding system (PSF) was included in the current study to assess the incidence of functional communicative acts in the team discussions. Based on previous research in small group communication, it was predicted that there would be differences in the extent of functional communication in problem solving team meetings between the FBA and CBC models, and in cases with varying treatment outcomes. Specifically, the Functional communication theory suggests that this type of communication (i.e., establishing operating procedures, generating alternative solutions to the problem) is conducive to effective problem solving, whereas the absence of these behaviors may hinder the problem solving process.

Research Questions:

1. Is there a difference between the average proportion of functional communication as coded with the Problem Solving Functions coding system in school-based problem solving teams when the effect of both effect size and case type is also analyzed?

Hypothesis 1a: There will be a larger proportion of Operating Procedures communicative acts in cases with large effect sizes.

Hypothesis 1b: There will be a larger proportion of Problem Analysis communicative acts in cases with large effect sizes.

Hypothesis 1c: There will be a larger proportion of Generating Alternative Solutions communicative acts in cases with large effect sizes.

Hypothesis 1d: There will be a larger proportion of Criteria for Evaluating Solutions communicative acts in cases with large effect sizes.

Hypothesis 1e: There will be a larger proportion of Evaluation communicative acts in cases with large effect sizes.

The Consultation Analysis Record (CAR) was included to assess the incidence of behavioral communication and directive communication in the problem solving team discussions. Based on the research in school consultation and the differences inherent in the FBA and CBC models implemented in this study, it was predicted that there would be differences in the extent of behavioral communication between FBA and CBC cases with varying treatment outcomes. Previous research has suggested that focusing on explicit behavioral descriptions and conditions in the immediate environment as central determinants of problem behaviors could lead to better treatment outcomes. Thus, it was predicted that there would be a greater proportion of behavioral content communication in cases with large effect sizes (Fuchs & Fuchs, 1989). In addition, as the FBA model relied on extensive assessment and verification phases that directly inform intervention planning, it was predicted that there would be a greater proportion of behavioral content communication in FBA cases than in CBC cases. The prediction was that there could be an interaction between case type and effect size, such that there would be a greater average proportion of behavioral communicative acts in FBA cases with large effect sizes.

2. Is there a difference between the average proportion of behavioral content communication as coded with the Consultation Analysis Record (CAR) coding system in school-based problem solving teams when the effect of both effect size and case type is also analyzed?

Hypothesis 2a: There will be a larger proportion of Behavior communicative acts in cases with large effect sizes.

Hypothesis 2b: There will be a larger proportion of Behavior communicative acts in FBA than in CBC cases.

Hypothesis 2c: There will be a larger proportion of Behavior communicative acts in FBA cases with large effect sizes.

Hypothesis 2d: There will be a larger proportion of Behavior Setting communicative acts in cases with large effect sizes.

Hypothesis 2e: There will be a larger proportion of Behavior Setting communicative acts in FBA than in CBC cases.

Hypothesis 2f: There will be a larger proportion of Behavior Setting communicative acts in FBA cases with large effect sizes.

Hypothesis 2g: There will be a larger proportion of Behavioral (i.e., Behavior and Behavior Setting combined) communicative acts in cases with large effect sizes.

Hypothesis 2h: There will be a larger proportion of Behavioral (i.e., Behavior and Behavior Setting combined) communicative acts in FBA than in CBC cases.

Hypothesis 2i: There will be a larger proportion of Behavioral (i.e., Behavior and Behavior Setting combined) communicative acts in FBA cases with large effect sizes.

Hypothesis 2j: There will be a larger proportion of Individual Characteristics communicative acts in cases with small effect sizes.

Hypothesis 2k: There will be a larger proportion of Individual Characteristics communicative acts in CBC than in FBA cases.

Hypothesis 2l: There will be a larger proportion of Individual Characteristics communicative acts in CBC cases with small effect sizes.

Research in school consultation has suggested that directive verbal communication in consultation is related to process and treatment outcomes, although the data to support the nature of this relationship has been mixed. In the group problem solving models in the current study, it was predicted that the consultants' use of directive verbalizations (i.e., Process Overt, Summarization, Elicitors) would be necessary to guide the complex problem solving process and would lead to better treatment outcomes.

3. Is there a difference between the average proportion of directive communication in school-based problem solving teams as coded with the Consultation Analysis Record (CAR) coding system when both the effects of effect size and case type is analyzed?

Hypothesis 3a: There will be a larger proportion of Process Overt communicative acts in cases with large effect sizes.

Hypothesis 3b: There will be a larger proportion of Summarization communicative acts in cases with large effect sizes.

Hypothesis 3c: There will be a larger proportion of Elicitor communicative in cases with large effect sizes.

Hypothesis 3d: There will be a larger proportion of Directive communicative acts (i.e., combined category of Process Overt, Summarization, and Elicitors) in cases with large effect sizes.

Chapter 4: Methods

Selection of Participants

Research participants were selected from an ongoing comparative study of the FBA and CBC approaches being implemented in multiple school districts. Participants for this study were solicited from the school districts through appointed personnel (e.g., supervisors of Behavior Specialists or coordinators of Emotional/Behaviorally disabled self-contained classrooms) and the students were selected by participating school personnel. There were three criteria for student selection. The first criterion was that the student be eligible for special education services for emotional/behavioral disability (E/BD) or other identified behavioral disabilities (i.e., Attention Deficit Disorder or ADD) that were manifested in disruptive behavior in the school setting. The second criterion was that the student was nominated due to repeated office discipline referrals. The third criterion was that the student be within average intellectual functioning. For each case, letters of consent were obtained from parents and teachers, and letters of assent were obtained from students.

The students were randomly assigned to the intervention conditions of FBA and CBC. Sixteen cases were processed through either the FBA or CBC model throughout the year, with one research assistant assigned to each case as the coordinator and consultant. Twelve of the cases were included in this study, based on criteria that the teams collected student observation data that could be analyzed for changes from baseline to intervention phases, and that the teams reached the intervention phase and had collected at least two intervention data points (i.e., observations of target students). In addition, only the cases

that were judged to have at least moderate treatment integrity (i.e., teams had completed at least 75% of the essential components of the problem solving models) were included. For the purpose of conducting the statistic analyses, there needed to be at least one audible tape of a team meeting for the case to be included in the analysis.

Table 1 illustrates demographic and case information on each student participant in the FBA cases, and Table 2 illustrates demographic and case information on each student participant in the CBC cases:

Table 1

Demographics and case information on student participants included in study: Functional Behavioral Assessment Model cases

Case	Age	Grade	Classroom Setting/ Disabling Category	Target Behaviors	Hypotheses/ Goals
1	12	6	Self contained E/BD E/BD	1. Off-task	a. Due to difficult task and lack of organizational skills b. Decrease off-task
				2. Disruption	a. Seeking peer/ teacher attention and escapes task b. Decrease disruptions
9	6	1	General education w/RR E/BD	1. Non-compliance	a. To get attention and escape task b. Decrease noncompliance
				2. Physical Defiance	a. To escape task b. Decrease defiant behaviors
10	6	1	Self contained E/BD E/BD	1. On-task	a. Engages in off-task refusal behaviors to get attention b. Increase on-task
				2. Aggression	a. Aggressive to get adult/peer attention b. Decrease aggression
15	5.5	K	General education Health Impaired	1. Talking out	a. To get attention b. Decrease talking
				2. Inappropriate asking for help	a. To escape task b. Decrease verbal outbursts
17	11	6	Self contained E/BD E/BD	1. Truancy	Student truant to gain staff/peer attention
21	10	4	Self contained E/BD w/mainstreaming E/BD	1. Disruptive talk-outs	a. Due to difficult task b. Decrease talk-outs
				2. Noise	a. To get attention b. Decrease noise
22	11	6	General Ed with RR E/BD	1. On-task	a. Off-task to escape task and get assistance from adult b. Increase on-task

Note: E/BD= Emotional/Behavioral Disability. Self contained=Self contained classroom, an education setting in which only students with special education eligibility on individualized education programs are in attendance. Self contained E/BD w/mainstreaming= self-contained E/BD classroom for the majority of the day with at least one class in a general education setting. General Ed with RR= General education classroom for the majority of the day with specialized instruction in resource room.

Table 2
Demographics and case information on student participants included in study: Conjoint Behavioral Consultation Model cases

Case	Age	Grade	Classroom Setting/ Disabling Category	Target Behaviors Goals	Hypotheses/
2	10	16	General Education w/RR E/BD	1. On-task	a. Student is oppositional, has difficulty engaging b. Goal- increase on-task behaviors
8	5.5	K	General Education w/RR Health Impaired	1. Tantrums	a. Tantrums during academic work when frustrated b. Decrease tantrums
				2. Aggression	a. In social situations student aggresses to protect personal space b. Eliminate aggression
11	9	1-3 (mixed)	Self contained multi-age E/BD	1. On task	a. Off-task to get attention, needs incentives b. Increase on task
				2. Talking	a. Talks when peers talk to him, avoid task b. Decrease talking
16	11	6	Self contained E/BD E/BD	1. Task avoidance	a. Rushes through work due to boredom b. Goal – Increase % work complete
19	9	2	General education Health Impaired	1. Off-task	a. Occurs throughout the day, difficulty sustaining attention b. Decrease off-task
				2. Provoking	a. During seatwork and transitions to get peer attention b. Decrease provoking

Note: E/BD= Emotional/Behavioral Disability, special education disabling category;
an education setting in which only students with special education eligibility on individualized education programs are in attendance; General Ed with RR= General education classroom for the majority of the day with specialized instruction in resource room, usually a room within a school where small groups of children meet with a special education teacher for special instruction for a portion of the day.

Parents. The parents of each student were invited and encouraged to participate in part of the assessment process, the team meetings, and some aspects of intervention implementation. Ten parents attended the team meetings, and in the other two cases parents did not attend team meetings but were consulted through telephone conversations.

Teachers. Ten teachers participated in the study. Six teachers worked in general education settings with resource room support for the students eligible for services, and four teachers worked in self-contained classrooms for students with emotional/behavioral disabilities. Some teachers participated in two cases (i.e., case #16 and #17 involved the same teacher, case #10 and #11 involved the same teacher). Their experience in education ranged from two years to twelve years, and all of the teachers had some experience working with students with emotional/behavioral disabilities, although their levels of experience varied from having previously worked with one student with behavioral disabilities within the general education setting to having worked extensively with students with emotional/behavioral disabilities in self-contained settings.

Other School Personnel. In some cases, additional school personnel involved in the education of the target student were involved in the problem solving process. For example, in many cases the Behavior Specialist shared responsibility for helping the teacher implementing goals in the student's Individualized Education Program (IEP). The Behavior Specialist or Interventionist provided direct services to the student and was therefore involved in implementing interventions to address problem behaviors. For example, in case #15 the Behavior Specialist attended all team meetings, communicated with teachers and the consultant on a regular basis regarding the student's progress, and

was often present in the classroom while the intervention was being implemented. In other cases, the school principal (i.e., case #9), the school psychologist (i.e., case #8), the classroom therapist (i.e., cases #16 and #17), or the school counselor (i.e., case #8) were involved in team meetings. All of these participants are referred to as consultees in the data analyses.

Research Assistants. Four research assistants served as consultants to the school-based teams regarding specific cases. The research assistants conducted team meetings, assessments, and interviews, collected and/or facilitated data collection, conducted behavioral observations in classroom settings, and monitored intervention implementation. The research assistants transcribed the audiotaped meetings and coded the transcripts utilizing the PSF and the CAR coding systems. Two additional research assistants conducted behavioral observations and coded transcripts to establish interrater agreement across cases.

Materials

Transcripts. The meetings were conducted at the schools and were recorded utilizing a cassette recorder. Audiotapes were assigned case numbers and stored in locked facilities to protect confidentiality of the participants. The research assistants audiotaped the meetings and transcribed the discussions verbatim. Verbal messages were divided into "thought units" as specified by Bergan & Kratochwill (1990b). A thought unit is a statement that functions as a complete thought or change of thought, and is distinguished from smaller units such as words or larger units such as speaking turns.

Consultation Analysis Record (CAR). The Consultation Analysis Record (CAR) is a verbal coding system designed specifically for the analysis of consultation dyads. The instrument was created to provide a quantitative method for describing the verbal interactions that occur during the consultation process, and providing indices of verbalizations deemed important in Behavioral consultation and educational problem solving (Bergan & Tombari, 1975). Bergan and Tombari (1975) anticipated that the CAR would help researchers and practitioners identify verbalizations that would help consultants meet specific interviewing goals (i.e., problem identification) and goals of the consultant process (i.e., moving from delineating a problem to developing and implementing an intervention plan, or improving consultee skills to deal with the client). The intent was also to increase awareness regarding how the consultation process impacts treatment planning and implementation.

In the initial instrument design, interrater reliability was established for both assigning utterances to units of observations (i.e., dividing them into thought units) and for coding thought units for content, process, and control categories. The coders achieved 96% agreement in assigning thought units. Reliability coefficients for coding the three types of subcategories ranged from 87-100% across the three interview phases (problem identification, problem analysis, and problem evaluation) (Bergan & Tombari, 1975). The CAR has since been used extensively in consultation research to analyze primarily Behavioral consultant dyads (e.g., Bergan & Tombari, 1975; Busse, 1996; Busse et al., 1999; Benes et al., 1991; Curtis & Watson, 1980) and in some Conjoint Behavioral consultation triads (e.g., Sheridan, 1997). Examples of interrater reliability with the CAR

reported in published studies are the following: 70% (e.g., Busse et al., 1995), 80% (e.g., Gutkin, 1996), and 90% (e.g., Hughes et al., 1997).

See Appendix C for the format of the CAR coding system. See Appendix D for a brief description of each CAR verbalization code. The Process Overt content code that Gutkin (1996) added to the CAR was included in this study. This content code identifies verbalizations that address the problem solving process itself rather than the specifics of a presenting problem (e.g., "Let's make sure we have a clear definition of the problem behavior that we're focusing on before we talk about interventions.") (Gutkin, 1996).

Problem Solving Functions (PSF). The PSF coding system was modified by the author from Hirokawa's (1980) Function-Oriented Interaction Analysis System (FAIOS) which was used in previous studies in the group communication literature (e.g., Hirokawa, 1980;1985;1988) (see Appendix A). Hirokawa's (1980) coding system was based on generally accepted requirements for effective group decision making according to the Functional Theory of group communication (Gouran et al.,1993; Hirokawa, 1980;1985;1988) The specific functions and behavioral categories in the current study were modified to make them relevant to the school-based problem solving process. The paragraph below explains the coding system and the modifications for the current study.

A two-level, dynamic analysis system was created for coding each thought unit. A dynamic analysis system contains mutually exclusive and exhaustive categories so that each communicative unit is only coded into one category (Hirokawa, 1980). For example, each thought unit is coded for only one problem solving function (i.e., Generating Alternative Solutions). The decision is made by the coder that an utterance fits

exclusively in this category and not another (i.e., Criteria for Evaluating Solutions) based on the definitions and examples for each category. Similarly, each thought unit is coded for the purpose of the utterance (i.e., question), and the coder makes the decision that this utterance fits only into this category and not another behavioral category (i.e., opinion).

With the PSF coding system, each thought unit was coded for the following: (1) source (indicates the person speaking, i.e., consultant, consultee-teacher, consultee-parent), Problem Solving Function (indicates the general task-achievement function), and purpose of the utterance (indicates the seven behavioral categories). The five Problem Solving Functions are the general task-achievement functions of the communicative utterances: Operating Procedures (i.e., establishing what needs to be accomplished during the team meeting and how to approach the task), Problem Analysis (i.e., identifying the nature of the problem behavior, the extent and seriousness of the problem, problems with the circumstance), Generating Alternative Solutions (i.e., generating a number of feasible alternative intervention ideas), Criteria for Evaluating Solutions (i.e., establishing what a good intervention would look like and appropriate evaluative criteria), and Evaluation (i.e., evaluating positive and negative qualities of each intervention idea).

The specific purpose of the utterance is identified by seven behavioral categories. This behavioral function relates to the type of verbal action conveyed by the message that accomplishes a broader task-achievement function within the discussion (i.e., a question to gather information of clarify a previously stated utterance). Behavioral categories include the following: Fact, Opinion, Agreement, Disagreement, Question, Summary,

Other (see Appendix B for a complete description of each of the five functions and the behavioral categories).

The School Archival Records Search (SARS). The SARS is a record searching tool used to summarize information regarding the student's school history and current status, including attendance, achievement test scores, grade retentions, placement, and special education services, and comments from previous teachers (see Appendix F) (Walker, Block-Pedegp, Todis, & Severson, 1991). The research assistants gathered information and completed the SARS prior to assessment activities and interviews for each case in the FBA and CBC model. These data were used in the initial problem solving stages to determine which factors (i.e., student attendance) could be symptoms of, or contributing to, the problem behaviors. In addition, this information assisted the teams their attempts to understand the nature of the problem behaviors, analyze problems with current circumstances in the school setting, and to rule out interventions that had previously been implemented and their outcomes (i.e., grade retention due to persistent lags in academic progress or emotional immaturity).

The following (Appendices G-M) are assessment tools that were used in the assessment phase of the FBA model only.

Functional Assessment Checklist for Teachers and Staff, Part A & Part B (FACTS A&B). The FACTS A & B is a two-page interview used by school personnel in the initial phase of functional behavioral assessment (see Appendix G) (March et al., 1999). The FACTS is an interview assessment that can be completed in 15 minutes. Following the initial intake and records review, the FACTS was conducted by the research assistant

with school-based personnel that worked directly with the student and knew the student best (i.e., teacher and/or other school personnel). There are five sections on the first page, beginning with general demographic information about the student and respondent (i.e., name, grade, date, name of interviewer and respondent), a general student profile (i.e., strengths or contributions the student brings to school), and a list of identified problem behaviors (i.e., withdrawn, inappropriate language). The next two sections involve identifying specific routines in which the problem behaviors are most likely to occur and rating the likelihood of the problem behavior occurring during these routines in the classroom, and summarizing the three routines that received the highest rating in probability of occurrence for further assessment in the other sections.

On the second page of the assessment, there are six sections that guide the interviewer and respondent in further the routines, activities and contexts within which the problem behaviors occur, providing more detail about the problem behavior(s), and current efforts that have been used to control the problem behavior. The events that predict when the problem behavior will occur and consequences that appear most likely to maintain the problem behavior are also listed. The assessment concludes with a summary statement proposing possible predicting factors (i.e., setting events, antecedents) and maintaining consequences of the problem behavior(s). The information from this assessment was used in conjunction with other assessment and interview data to guide further assessment if needed and to build behavior support plans.

Functional Behavioral Assessment Checklists (FBAC). Stage et al. (2002) modified the FACTS A&B by using a checklist format for the sections and used

classroom teachers as the informants. This checklist format is the FBAC used in the current study, and both teachers and students used similar versions of the FBAC (see Appendices H and I respectively). The FBAC is a brief checklist used for teachers and students to identify behaviors of concern, events that predict when the problem behavior occurs, and consequences that appear to maintain the problem behavior (Stage et al., 2002). The checklists ask respondents to check the most important behavior(s) of concern (e.g., disrupts class, rushes through work) or to write in the behavior in the blank space. Then, respondents check the event that best predicts the occurrence of the behavior, and their best guess about the consequences that maintain the behavior, in terms of things that the student could obtain, avoid or escape by engaging in the problem behavior.

Results from a validity study indicated that teachers consistently rated the same problem behaviors for individual students on the TFBACs and that the teachers' ratings of problem behaviors adequately agreed with a time-lag analysis procedure (i.e., using behavioral observations to determine conditional probabilities of behaviors, preceding antecedents, and maintaining consequences), but that agreement between teachers' ratings of maintaining functions of the problem behaviors and the time-lag analysis were poor (Stage et al., 2002).

Student-Directed Functional Assessment Interview (SDFAI). The SDFAI is a brief interview-format tool used to obtain information from the person performing the problem behavior, the student (see Appendix J) (O'Neill et al., 1997). The SDFAI had five sections of questions regarding the student's strengths and skills, behaviors of concern, schedule and routines associated with the problem behavior(s), competing behavior

pathways, and a proposed behavior support plan. The SDFAI asked the student to describe their strengths and skills (i.e., activities at school that the student liked and did well in), and identify specific behaviors that resulted in problems in school. The student then completed a schedule and routine matrix to show routines and activities in which problem behaviors were most likely to occur. The student then responded to questions regarding why they thought they were having problems (i.e., what events trigged problem behaviors, what happened after) to explore the immediate environment surrounding the problem behavior(s) and to develop competing behavior pathway hypotheses. The information about the problem behavior(s) was then used to inform a proposed behavior support plan (i.e., ways to reduce the effects of things that make the problem behavior worse). The comprehensive coverage of setting events, antecedents, and consequences surrounding problem behaviors suggests that the SDFAI has adequate content validity although the data on convergent validity with other instruments has not been established (Stage et al., 2002).

There were two versions of the SDFAI, one for intermediate students and one for primary students. For the younger primary students, the wording of questions were modified to facilitate comprehension, i.e. "which of these behaviors occur together in some way" was read as "when X (the behavior) happens, what also happens?" Outcomes from the SDFAI included further specification of the problematic times or situations across the day, identification of factors predictive of problematic behaviors, the possible functions, summary statements for maintaining functions of behaviors, and suggestions for components of the behavioral support plan.

The research assistants conducted the appropriate version of the SDFAI with the student. The SDFAI concludes with the completion of the Competing Pathways Summary Template (see Appendix J) which summarized the information gathered from the teacher and student interviews regarding the setting events and predictors of the problem behavior, desired behaviors (i.e., what is expected of students) and acceptable alternative behaviors (i.e., what the target student could do as an alternative to the problem behavior that would result in fulfilling the same function), and the maintaining consequences of the behaviors. This information was used to inform the verification of hypotheses and the proposed behavior support plan.

Adapted Functional Assessment Interview (Adapted FAI). The Adapted FAI is an abbreviated version of the FACTS A&B, modified to make the questions more applicable to the parent's level of knowledge regarding how their child behaves at school (see Appendix K) (Sugai & Tindal, 1993). The Adapted FAI asked the parent to describe their child's behavioral strengths and the behavior(s) that were most likely to get their child in trouble at school. In addition, there were questions regarding environmental conditions surrounding the behavior at school, such as under what conditions the behavior was most likely to occur, what usually immediately before and after the problem behavior occurred, and what the parents and others (i.e., students and teachers) usually did when the behavior occurred. There are no published studies addressing the validity of the Adapted FAI.

Antecedent/Behavior/Consequence (ABC) Observation Assessment. The ABC is an observation form used to guide the initial classroom behavior observation (see

Appendix L) (Sugai, & Tindal, 1993). The research assistants conducted the observations in the classrooms during the times or activities when the problem behaviors were most likely to occur. Event recording techniques were used, in that the observers recorded the details of each incident as they occurred. The observers noted the target student's problem behaviors that were observed during this time (i.e., talking out of turn), as well as the antecedents (events that precede the behavior, i.e., teacher is delivering instructions to the whole classroom), and consequences (events that occur after the behavior, i.e., teacher reprimands student for talking out of turn). There are no published studies addressing the validity of this assessment instrument.

Functional Assessment Observation Form (FAOF). The FAOF is a frequency event recording tool used to document the predictor events and consequences associated with instances of problem behavior (see Appendix M) (O'Neill et al., 1997). The form is organized around problem behavior events, which includes all problem behaviors in an incident that begins with a problem behavior and ends after three minutes of no problem behavior. The FAOF provides information regarding the number of events of problem behavior, behaviors that occur together, times when problem behaviors are most likely and events that predict them, perceptions about maintaining functions, and actual consequences following behavior events. The research assistants conducted observations using the FAOF in as many settings and times per day as deemed necessary during short periods of time (i.e., 15-minute blocks of time in a one-hour period) across the student's day. The average inter-rater agreement on the FAOF in the current study across four

separate sessions of observations was 80%, and ranged from 58% to 100% (Jackson & Stage, 2002).

Intervention Evaluation Inventory-short form. The intervention evaluation inventory-short form is a 9-item likert-type self-report scale designed to assess the participants' (i.e., teachers and parents) perspectives on the acceptability of the proposed intervention plan (adapted from Kelly, Heffer, Gresham, & Elliott, 1989) (see Appendix N). The 5-point scale, ranging from strongly agree to strongly disagree, asks the respondent to consider the acceptability of the proposed intervention plan (e.g., "I find this intervention plan to be an acceptable way of dealing with the student's problem behavior"). Scores range from 9-45, with higher scores representing greater acceptance of a given intervention. Both the teacher(s) and parent(s) completed the inventory following the behavior support plan meetings for each model. A moderate acceptability score of 27 or higher was required in order for intervention implementation to proceed.

Student Intervention Rating Profile (SIRP). The student's intervention rating profile is a 7-item questionnaire designed to elicit the student's perspective on the fairness and acceptability of the proposed intervention plan (adapted from the Children's Intervention Rating Profile, or CIRP, Bergan & Kratochwill, 1990a). The questionnaire contains selection-type responses, from which the student circled one of the five choices. For example, in response to the question, "Is what the teacher plans to do too harsh?", the student chose one of the following: (1) Very harsh, (2) Harsh, (3) Not sure, (4) Not very harsh, (5) Not harsh at all (see Appendix O). When students were participating in the behavior support plan meetings, they completed the SIRP following the meeting. For

students with limited reading skills, the SIRP was administered in an interview format. For primary students, the word "harsh" was defined as "unfair". The scores on the SIRP were added and divided by seven. If the average was below 3.0, the plan was considered unacceptable as rated by the student. As with the Intervention Evaluation Inventory, acceptability of the intervention plan was required in order to proceed with implementation.

Classroom Behavioral Observation System. The classroom behavioral observation forms were used for the collection of baseline, treatment, and reversal phase data for each case in the FBA and CBC models (see Appendix P) (Stage, 2001). Research assistants conducted classroom observations using 10-second momentary time-sampling procedures to record on-or off-task behavior. At the beginning of each 10-second interval, an audiotaped signal cued the observers to note whether or not the target student was on-or off-task. Partial-interval time sampling procedures also prompted recorders to note occurrences of the student performing inappropriate classroom behaviors during this same 10-second interval (e.g., talking or out-of-seat). Every sixth 10-second interval, a randomly selected peer was observed for the same behaviors to provide comparison for the target student's behaviors, and a different peer was observed at each of the sixth intervals. The entire time-sampling procedure was conducted in 15-minute blocks of time.

Behavioral Sequence Coding System. The behavioral sequence coding system was designed specifically to analyze the antecedent, behavioral, and consequent events recorded with the behavioral observation system for the verification phase of the FBA

model (Stage, 2002) (see Appendix Q). Using the behavioral observation system data, sets of three 10-second behavioral sequences are coded in an antecedent-behavior-consequence (A-B-C) sequence. For example, in intervals one, two, and three of the first line of data, behaviors may be recorded as (1) on-task (2) off-task, talking, peer-verbal (peer interacting verbally with target student), (3) off-task, teacher interaction. Each behavior in this unit is assigned a numeric code (i.e., on-task=1, off-task=2, peer verbal = 12, teacher interaction=9). For cases where there are multiple possibilities of behavioral sequences, the unit may be coded more than once. Each set of three 10-second intervals is coded in the same fashion. The codes are then entered into an SPSS data file to be analyzed sequentially, to summarize all the possible combinations of target student, peer, and teacher behaviors and interactions that may be predicting or maintaining the target student's behaviors.

FBA and CBC Components Checklists. The FBA and CBC Essential Components checklists were used as process integrity measures to determine the extent to which problem solving objectives were obtained (see Appendix R and Appendix S). The research assistants completed the checklists during the processing of each case, and consulted with their supervisors to ensure accuracy of reporting and completion of the essential components.

Setting. The participants were from four nearby urban school districts, two in urban locations and two in suburban areas. The ethnic representation in the central urban school district was as follows: Caucasian students (40%), Asian (23%), Black (23%), American Indian (3%), and Chicano/Latino (12%). The ethnic representation for the other urban

school district was as follows: Caucasian students (69%), African American (3%), Asian American (20%), Hispanic (8%), and Native American (.4%). Ethnic representation for one suburban school district was as follows: Caucasian students (82%), with Asian (6%), Hispanic (4%), Black (2%), and American Indian (.8%) representation. Finally, ethnic representation for the other suburban school district was as follows: Caucasian students (79%), with Asian (12%), Black (3%), American Indian (.7%), and Hispanic (5%).

Procedure

Research Assistant Training. Four research assistants participated in one 12-hour training on the FBA and CBC conditions, data collection and observation systems, and the transcriptions and coding of the data. The project coordinator provided supervision with regard to data management and research assistant activities throughout the school year. In addition, two university faculty members provided supervision with regard to the FBA and CBC implementation and intervention development for specific cases. The research team met weekly to review research activities and to facilitate discussion about the specific cases, and additional didactic trainings were provided throughout the year on specific topics (i.e., modifications to the coding system). While facilitating the FBA and CBC process activities, each RA met regularly with one of the university faculty to review transcripts and case documentation.

For the coding of transcripts, the basic principles of the coding systems were reviewed with each coder. The transcripts were divided into thought units and coded with assistance from the researcher during initial training sessions. The RAs then independently coded the transcripts and interrater reliability was assessed throughout the

coding procedures. One RA was assigned to coding the transcripts using the CAR, another RA coded transcripts using the PSF, and the researcher coded transcripts using both the CAR and the PSF.

For the CAR, the training of the RA was conducted based on the Bergan & Kratochwill (1990a) model. The RA was introduced to the basic principles of the CBC model and the verbal interaction techniques in consultation. In the initial training sessions, each of the four categories and subcategories were reviewed, and the researcher and RA discussed examples of each of the categories using a sample transcript. The RA and researcher reviewed a sample transcript together, and divided the text into thought units, numbering the pages and thought units accordingly. The RA and researcher coded the first four pages of one transcript together, and then the RA and researcher coded the next four pages independently. The coders reviewed the pages together, and discussed instances in which there was disagreement about codes. This process of coding independently and then reviewing the coding to assess interrater reliability continued until reliability was maintained at a minimum of 90%.

For the PSF, training of the RA was conducted based on procedures implemented in Hirokawa's (1980) study. The RA was introduced to the basic principles of the functional theory of group communication and the basic components of the PSF coding system using written descriptions of each category and examples of communicative behaviors (Hirokawa, 1980). The RA was told that the five problem solving functions represented actions which theoretically must be performed by team members in order for

the group to reach an effective solution to the problem (i.e., an effective intervention plan that can be implemented in the classroom).

In the initial training sessions, the RA and researcher used a sample transcript to review together and divide into thought units. They then coded the first four pages of the transcript together, then the next four independently, and then reviewed those next four pages together. As with the CAR, the coders reviewed the pages and discussed instances in which there were disagreements about the codes until reliability was maintained at a minimum of 90%.

The RA and researcher coded the problem solving discussions, looking for communicative behaviors which reflected any of the five PSF categories in each discussion (or the sixth category of "other" for any behavior which performed a function other than those specified by the categories) (Hirokawa, 1980). The coders also identified the source of the utterances (consultant, consultee-teacher, consultee-parent, and student). The RA was instructed to identify the general function of the communicative act (e.g., establish operating procedures), as well as the specific behavioral category which was assumed to perform any of the five functional communicative acts (e.g., fact). The coders were advised that their coding decisions should not be based on their perception of the intent of the speaker (i.e., what function he/she intended to perform), but rather on their perception of how the utterance appeared to function in the course of the discussion (Hirokawa, 1980; 1985).

Interventions

Functional Behavioral Assessment (FBA) Model. The FBA model is an assessment-based behavior support planning model designed to be conducted within a team-based problem solving approach. The FBA model included multiple assessments used to derive functional hypotheses regarding problem behaviors which directly informed behavior support planning. This model consisted of three phases: the assessment phase, the verification phase, and the intervention implementation and evaluation phase.

In the assessment phase, six different functional assessments (both direct observations and interviews) were used to develop testable hypotheses about what factors predict and maintain problem behaviors. The six different functional assessments included the Functional Assessment Checklist for Teachers and Staff (FACTS-A&B) interview, the Functional Behavioral Assessment Checklist (FBAC) for teachers and students, the Student-Directed Functional Assessment Interview (SDFAI), the Adapted Functional Assessment Interview (Adapted FAI) for parents, and the two observation assessments, the Antecedent/Behavior/Consequence (ABC) Observation assessment and the Functional Assessment Observation Form (FAOF). These instruments were used to gather information from the students, teachers, and parents regarding the nature of the problem behaviors (e.g., talking out of turn), the events and circumstances related to both the prediction of the problem behaviors (e.g., during whole-group instruction time), possible functions or purposes of the problem behaviors (e.g., to obtain teacher attention), and desired alternatives to the problem behaviors (e.g., raising a hand before talking).

These factors were compiled into summary statements in the Competing Pathways graphic organizer (see Appendix E). This template was used to summarize information gathered during the assessment phase, to facilitate further analysis of the problem, and to structure the process for developing the behavior support plan (O'Neill et al., 1997).

In the verification phase, the Competing Pathways model was used as a means of developing testable hypotheses about problem behaviors. For example, once teams had identified potential setting events, predictors and consequences of the problem behaviors, as well as acceptable alternative behaviors, this information was summarized in the competing pathways model. Teams may have initially identified more than one hypothesis regarding potential maintaining factors (i.e., that off-task behavior could be maintained by peer attention or escape of a difficult task). The teams then used this information to structure the classroom environment to test the hypotheses.

For example, a task was presented to the target student (e.g., an independent writing task) while observers attended to the behaviors of the target student (e.g., off-task or tantrum behaviors) and the target student's behavior with peers (e.g., talking with peers) using the classroom observation system. From these observations, the research team was able to detect whether or not either of the predicted sequence of events occurred above chance expectations (e.g., task presented to student, student engages in off-task behavior and/or tantrums, student obtains teacher attention). The behavioral sequence coding system was then used to verify one or more of the hypotheses, using Chi-square based statistical tests that determined the occurrence above expectation

(Stage, 2002). This information then directly informed the behavior support plan strategies.

The resulting interventions were multi-component support plans which focused on preventing problem behaviors from occurring, teaching new skills to students to use as an alternative to the problem behavior that results in the same function, and arranging more effective environmental contingencies that increase prosocial behaviors and reduce the frequency of problem behaviors. With the previous example, the team may have designed an intervention to address either the predicting events (e.g., presenting a difficult task without teacher support) or the maintaining consequences (e.g., teacher attention to tantrum behaviors), while simultaneously teaching an appropriate alternative behavior (i.e., raising a hand to ask for help). The interventions were designed to maximize the treatment acceptability for those that would implement them and to maintain contextual fit, in that the proposed intervention was suitable and practical within the classroom environment and current resources available to the teachers. Using the intervention evaluation form, if moderate treatment acceptability was not obtained the team discussed alternate intervention pans that were acceptable to the participants.

Conjoint Behavioral Consultation (CBC). The CBC model was based on Bergan and Kratochwill's (1990a) dyadic model of consultation, modified to include parents (Sheridan, 1997) in a team-based problem solving approach. The CBC model followed an interview format modified from the Bergan and Kratochwill (1990a) Behavioral consultation model to facilitate problem solving in three phases: problem identification, problem analysis, and program implementation and evaluation. The CBC model did not

rely on an extensive assessment phase, but rather was based on indirect methods of gathering information through interviews with the parents and teachers, and facilitating team meetings in which the team defined and analyzed the problem and developed a support plan collaboratively. The focus was on the consultees as the primary informants regarding the observed behaviors and environmental contingencies surrounding the behaviors.

During the problem identification and analysis phase, research assistants worked with teachers and parents to identify the problem behaviors (e.g., aggression or physical defensiveness) and explore environmental factors perceived to contribute to the problem behaviors (e.g., teacher responds to aggression with attention). After collecting classroom observation data with the observation system and analyzing the data with the school-based team, the research assistant consulted with research staff to select from a standard set of empirically-validated intervention packages (e.g., differential reinforcement of other behaviors, self-management procedures, or group contingencies). The research assistant then met with parents, students, and teachers to propose a behavior support plan based on these recommendations, and maintained flexibility in considering alternative approaches based on the team's response to their recommendations.

In both models, the parents were invited to attend team meetings regarding their child and were encouraged to participate in the problem-solving process. If parents could not attend meetings, their input was obtained through phone calls whenever possible. In some cases, parents participated in some aspects of the intervention implementation. For example, in case #8 the parents were encouraged to use the same language for reinforcing

appropriate behaviors, and the same strategy of ignoring misbehaviors, as were the teachers in the classroom.

The teachers participated actively in the problem solving process by contributing information and insight regarding the students behaviors in the classroom and engaging in the problem solving process during team meetings (i.e., analyzing the problem behaviors and the environmental contingencies surrounding them). Teachers participated in some aspects of data collection, such as tallying the number of times a student was observed talking out of turn during circle time. Teachers were also actively involved in intervention implementation in the classroom (i.e., ignoring tantrum behaviors and providing positive descriptive praise for appropriate behaviors).

Procedural Integrity. Process integrity is a measure of the extent to which teams adhered to the essential components of the FBA and CBC models. In a review of recent articles, it was found that only 2% of the 100 studies included measures to determine whether or not the steps involved in the FBA process were systematically followed by participants (Ervin, Radford, Vertsch, Piper, Ehrhardt, & Poling, 2001). In the current study, global ratings of process integrity were utilized to assess the extent to which each specified component of both the FBA and CBC models were implemented as rated by participants. Research assistants completed the FBA and CBC checklists and reviewed their progress regarding each case with a supervisor from the research team. The transcripts, case documentation, and checklists were reviewed with the supervisor to ensure accurate reporting of the components completed. In the event that an essential component was identified that had not been completed, and this component was deemed

necessary in order to continue the process, the research assistant facilitated completion of that component with the school-based team.

Design. There were two independent variables: effect size and case type. The first variable, effect size, was the difference between observed behaviors across baseline and intervention phases. The second independent variable, case type, was either the FBA or CBC model that was employed within each case. The dependent variable was the average proportion of verbalizations per category of coding system (the CAR and the PSF). With the CAR, messages were coded for the following: (1) message source (i.e., consultant or teacher-consultee, parent-consultee, therapist/mental health specialist-consultee, student, or other), (2) content codes: behavior setting, behavior, plan, and process overt (3) process codes: specification and positive validation (see Appendix C for coding template and Appendix D for description of codes). With the PSF, messages were coded for the following: (1) message source (i.e., consultant or teacher-consultee, parent-consultee, therapist/mental health specialist, student, or other), (2) communicative behaviors which performed the five problem solving functions (e.g., Operating Procedures), and (3) communicative behaviors (e.g., opinion) (see Appendix A for coding template and Appendix B for description of codes). Measures of treatment integrity were included to ensure fidelity of the proposed intervention plan.

Interobserver Agreement.

Behavioral Observations. A minimum of five behavioral observations were conducted for each baseline and treatment phase. For every one of five behavioral observations, a second research assistant recorded behavioral observations. Initial

observations were conducted on practice cases to establish agreement between observers. An exact agreement coding system was used for calculating interobserver agreement, wherein agreement was assessed for each interval and was established when both observers agreed on each of the separate fourteen behavioral categories.

Agreement was then calculated by dividing the number of agreements by the number of disagreements across the 75 intervals of student and peer behaviors and dividing by 100 to yield a percentage of agreement. Independent coding continued if agreement was established and maintained at a minimum of 80%. Data collection procedures yielded interobserver agreement of at least 80%, most typically agreement was at least 90%. The conservative method of calculating exact agreement and the minimum standard of 80% are commensurate with other studies citing interobserver agreement on behavioral observations in functional assessment-based interventions for students with or at-risk for emotional/behavioral disorders. Examples of interrater reliability in published studies included ranges of 80-98% (e.g., Blake, Wang, Cartledge, & Gardner, 2000), 80-100% (e.g., Levandoski & Cartledge, 2000), 89-97% (e.g., Cooper, Wacker, Sasso, Reimers, & Donn, 1990), and 92% (e.g., Meyer).

Transcripts. The RAs were trained to use both the PSF and CAR coding systems. One RA independently coded transcripts and a second trained coder was assigned to code 25% of the transcripts from selected cases to assess interrater reliability. Of the 26 transcripts that were coded with the CAR, 7.5 transcripts were coded by both the researcher and the RA. Of the 13 transcripts that were coded with the PSF, 3.5 transcripts were coded by both the researcher and the other RA. The cases were divided

into thought units and an average number of coding pages (representing 25 thought units per coding page) was estimated at 23.5 pages. Transcripts for reliability checks were chosen that were close to the average range. In addition, transcripts were selected from cases facilitated by different RAs to provide adequate representation of various approaches. The researcher ensured that at least one of the cases selected for reliability checks with each RA was a case that the researcher had facilitated.

Reliability was calculated by dividing the total number of agreements by the total number of behaviors coded to achieve an agreement coefficient. This method of calculating agreement and the chosen minimum standard of 80% were established based on a review of articles in the consultation literature citing interrater agreement for coding verbal behaviors ranging from 70% (e.g., Busse et al., 1995), 80% (e.g., Gutkin, 1996) and 90% (e.g., Hughes et al., 1997). Reliability was maintained at a minimum of 90% throughout the coding of transcripts. For the CAR coding, reliability ranged from 85 to 97%, and for the PSF coding reliability ranged from 95 to 96%.

Treatment Integrity Results. Project staff facilitated and monitored treatment integrity to ensure fidelity of intervention implementation following the problem solving meetings. Research assistants also suggested the use of intervention scripts or written reminders of intervention components to the implementers (e.g., parents and teachers) (Ehrhardt, Barnett, Lentz, Stollar & Reifin, 1996). Research assistants conducted direct observations of teachers during treatment implementation phases to ensure that the interventions were implemented according to the plan and provided corrective feedback to enhance integrity (Galloway & Sheridan, 1994).

The FBA and CBC Essential Components checklists were used to facilitate integrity throughout the implementation process, and as a measure of the extent to which the problem solving models were implemented with integrity. There were19 essential components in the FBA (see Appendix R) and 24 essential components in the CBC model (see Appendix S). Treatment integrity was evaluated in terms of the proportion of the components that were adequately addressed in the problem solving process, i.e., 17 out of the 19 essential components, or 89% integrity. An arbitrary criterion was established for moderate adherence to the model as between 75-80% of the essential components addressed, high integrity as greater than 80%, and low integrity as less than 75% of the components.

The percentage of adherence to the FBA and CBC essential components as measured with the checklists for each of the cases were calculated. Treatment integrity across the 12 cases ranged from 77-100%, with an average of 86% of the essential components addressed during the problem solving process. Of the twelve complete cases, eight of the cases maintained high integrity and three of the cases maintained moderate integrity. For one case, the checklist was not completed.

Upon closer examination of some of the moderate integrity cases, several of the components that were not addressed were not relevant to the particular cases. For example, in case #8 the 'implement reversal phase' component was not addressed, as the intervention involved building a skill that could not have been reversed. The intervention involved teaching the student social skills and reinforcing him for standing in line appropriately (i.e., keeping his hands to himself). This learned social skill could not have

been reversed simply by removing the external reinforcements. In case #9, several of the components related to intervention implementation were not addressed because the student was admitted to a psychiatric hospital for an evaluation after the intervention had been in place for only two school days. Thus, participants were not able to collect information regarding success of the intervention or implement the reversal phase. Cases were included in the analysis only if it was apparent that the teams addressed as many of the components as were relevant to the particular needs of the case, and if the team did not exclude any one essential component that was deemed necessary for evaluation. For example, case #14 was excluded from the analysis because the school-based staff did not implement the intervention plan as was intended. However, the remaining 12 cases reached the intervention phase and team members had collected at least two intervention data points.

Preliminary Effect Size Analyses

In the educational and psychology literature a number of important issues have been raised regarding analyzing single-case outcome research (e.g., White, 1987; Scruggs, Mastropieri, & Casto, 1987; Busse et al., 1995). In single-subject research, the effect of an intervention is assessed by obtaining repeated measures of the target behavior at different times to provide the basis for inference about behavior change. Traditionally, data have been displayed graphically and visual inspection has been used to analyze trends in the data points across phases (i.e., changes in mean) (Kazdin, 1982). However, this type of inference has been unreliable, cannot control Type I error rates, and can be problematic with baseline variability (Crosbie, 1993).

There is a lack of consensus in how to quantify a meaningful outcome metric statistically to allow for comparison across multiple cases. Kazdin (1982) cautioned that statistical tests may detect subtle differences that lack clinical significance and that the data may violate the assumptions upon which the statistical tests depend. Nonetheless, with potential threats to the validity of visual inspection (i.e., unstable baselines, subtle changes in data, and intrasubject variability), Kazdin (1982) argued that statistical tests such as conventional t-and F-tests or time-series analyses may be appropriate, provided that autocorrelations are computed to verify that the data points are not serially dependent. Other researchers have argued for alternative methods of data analysis in single-case research that takes into account all of the data points and the variability between them (e.g., White, 1987; Scruggs et al., 1987; Busse et al., 1995).

In the current study, individual treatment outcomes for each of the 12 cases were analyzed using four different formats that have been reported in the literature for quantifying individual treatment outcomes. These four different outcomes were then analyzed using a Repeated Measures Analysis of Variance (ANOVA) to determine whether or not systematic variability existed between these measures of outcome. The following is a description of each of the four measures used to assess single case outcomes and the results of the analysis of variance.

Consultation researchers have advocated for the application of conventional meta-analytic approaches in group research to single-case consultation outcome research (Busse et al., 1995). In group designs, the effect or change achieved in a treatment study is analyzed by calculating the difference in treatment and control group means divided by

the control group standard deviation (Glass, McGaw, & Smith, 1981; Smith & Glass, 1977). This effect size measure provides a common metric for summarizing the relative effectiveness of several group treatment studies (Busk & Serlin, 1992).

For example, Stage and Quiroz (1997) conducted a meta-analysis of 99 single subject studies that used interventions to decrease disruptive classroom behaviors. These authors used the interrupted time-series autocorrelation analysis (ITSACORR) program to perform an analysis to assess the change in intercept and slope of the baseline and intervention phase lines. The ITSACORR program yielded a t-statistic for both the change in the y-intercept between baseline and treatment conditions, and for the change in slope between conditions. This t-statistic was then transformed into an effect size, allowing these authors to compare the relative effectiveness of the interventions across studies. They were also able to compare their results to other meta-analytic studies investigating the effectiveness of other interventions, finding that the interventions studied yielded comparable results.

Advocating for the use of an effect size calculation for single-subject research, Busse et al. (1995) suggested an effect size calculation that followed the aforementioned format used by Glass et al. (1981) for group treatment research. For single subject research, the effect size is an index of the practical importance of individual treatment outcomes that can be used to evaluate and compare treatment effectiveness across cases (Busk & Serlin, 1992; Busse et al., 1995). Effect size can be calculated without assumptions regarding population distribution or homogeneity of variance, calculating the differences in treatment and baseline phase means divided by the baseline phase

standard deviation (Busk & Serlin, 1992; Busse et al., 1995; Glass et al., 1981; Smith & Glass, 1977).

The basic formula for calculating effect size based on the target student and peer comparison data resembled the format used by Glass et al. (1981) for group treatment data in that the peer comparison data served as the control. Classroom observations of the target student included observations of randomly selected peers in the classroom at every sixth interval of the momentary time sampling procedure. These measures of peer behaviors provided a normative peer comparison to support conclusions that changes in the target student's behaviors were significant and clinically meaningful. Intervention effect sizes were calculated for each case using a formula that incorporated the peer comparison data collected during baseline and intervention phases. This effect size calculation was as follows:

$$\Delta E\text{-}C = \frac{\{ [M(t.tx) - M(t.bl)] - [M(c.tx) - M(c.bl)] \}}{SDc}$$

M(t.tx)= Mean of target student during treatment phase
M(t.bl)= Mean of target student during baseline phase
M(c.tx)= Mean of peer comparison during treatment phase
M(c.bl)=Mean of peer comparison during baseline phase
SDc= Standard deviation of peer comparison during baseline phase

Figure 1: Peer Comparison Effect size calculation

Effect sizes were also calculated for each case using only the target students' behavioral data to investigate whether or not systematic variability existed between effect

sizes measures with or without peer comparison data. This effect size calculation was as follows:

$$\Delta E\text{-}C = \frac{M.tx - M.bl}{SD.bl}$$

Mtx-Mean of treatment phase
Mbl-Mean of baseline phase
SDbl-Standard deviation of baseline phase

Figure 2: Treatment minus Baseline (Tx-Bl) Effect size calculation (Busse et al., 1985)

In their review of outcome metrics for single-case research designs, Scruggs et al. (1987) suggested that the proportion of nonoverlapping data points across the baseline and treatment phases provides a good measure of treatment effectiveness that is sensitive to other evaluative considerations (i.e., baseline variability and slope changes). The percentage of nonoverlapping data points (PND) score measures treatment effectiveness and allows for comparison across cases. (Mastropieri & Scruggs, 1985-86; Scruggs et al., 1987). The PND scores were calculated as follows:

$$PND = \frac{\#\text{ Tx data pts} > \text{highest Bl pt}}{\text{Total \#Tx data pts}}$$

#Tx Data pts> highest Bl pt = the number of treatment data points that exceed the highest baseline data point in an expected direction.
Total # Tx = the total number of treatment data points.

Figure 3: Percentage of Nonoverlapping Data (PND) (Scruggs et al., 1981)

For a multiple baseline design, the coder indicates "the number of treatment data points that exceed the highest baseline data point in an expected direction and divides by the total number of data points in the treatment phase" (Scruggs et al., 1987, p. 27). In an ABAB design in which phases are repeated, the total number of nonoverlapping treatment data points are combined, and divided by the total number of treatment data points in the two phases. The PND scores were then converted to Z-scores to provide a common metric for comparison across the four measures.

The ITSACORR (1.0) computer program developed by Crosbie (1993) and used in the Stage and Quiroz (1997) study was also used in the current study to evaluate treatment effectiveness, or whether a significant change was evidenced between baseline and treatment phases in single cases (Crosbie, 1993). The ITSACORR program performed an analysis to assess change in intercept and slope of the baseline and intervention phase lines to determine whether the phase lines differed significantly, had different vertical axis intercepts, and had different slopes. The program performed a t-test for both the change in the y-intercept between phases and for the change in slope between conditions. With this analysis the influence of autocorrelation (dependence among data points) inherent in time-series data was statistically removed and the analysis accounted for change in slope between conditions (Crosbie, 1993). The t-statistic from the ITSACORR program was then transformed into an effect size using the following formula:

$\Delta E\text{-}C = t \times [(1/nE + 1/nC)]$

t = the y-intercept t-statistic
nE = the number of data points in the treatment phase
nC = the number of data points in the baseline phase

Figure 4: ITSACORR Effect Size Calculation

In order to determine the amount of estimated variability in each type of effect size calculation, the data were analyzed for each case using all four methods of analyzing single subject data. Only the cases that met the criteria for all four effect size calculations (i.e., at least five data points for the target student's behavior and peer comparison data) were included in this analysis. For cases in which the targeted behavior was on-task (i.e., the desired direction of behavior change was an increase or higher percentage from baseline to intervention phases), the effect sizes were transformed to a negative value to make the values comparable to other targeted behaviors in which the desired direction of behavior change was a decrease or lower percentage. In order to maintain uniformity with the other effect size measures, PND scores were also evaluated to determine whether or not the outcomes should be changed to a negative value. For every PND score that was not a zero, the PND scores were coded as negative because there was some change in the desired direction.

For cases in which there were two intervention phases (i.e., ABAB or ABAC designs), the data points from both intervention phases were combined to yield an average intervention mean and the initial baseline was used in calculating the effect size (Busk & Serlin, 1992; Stage & Quiroz, 1997). For cases in which there were two

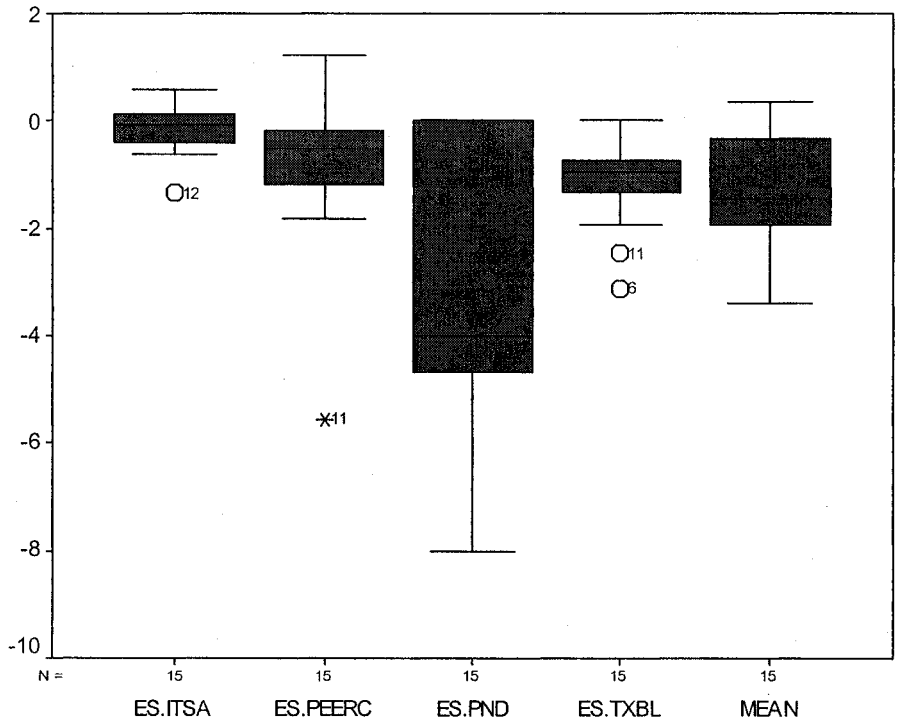
identified target behaviors (i.e., reducing off-task and talking behaviors), an effect size was calculated for each behavior. The data points from the follow-up phases were not included in the intervention phase mean, as case data did not clearly indicate that the intervention was implemented continuously with integrity following the intervention phase. Effect sizes were aggregated to produce an overall estimate of treatment effect for each type of problem-solving model (FBA and CBC).

A repeated measures analysis of variance was conducted to determine the amount of estimated variability in each calculation. Table 3 illustrates descriptive statistics from the repeated measures analysis, and Figure 5 illustrates the box plot of the mean effect sizes for the four effect size calculations and the grand mean:

Table 3
Descriptive Statistics of Four Effect Size Measures

	Descriptive Statistics		
Effect Size Measure	Mean	Standard Deviation	N
Peer Comparison -.81		1.57	15
Tx-Bl	-1.17	.47	15
PND	-2.77	2.62	15
ITSACORR	-.17	.81	15
Grand mean	-1.23		

Note: Peer Comparison = effect size from basic formula based on the target student and peer comparison data; Tx-BL = effect size from treatment minus baseline formula using only the target students' behavioral data; PND = Percentage of Nonoverlapping Data, a measure of treatment effectiveness transformed into an effect size; ITSACORR = Interrupted Time-Series Auto-Correlation t-statistic transformed into an effect size.



Note: O= Outliers or values that were more than 1.5 box-lengths from the 25th percentile;
* = Extremes or values more than 3 box-lengths from the 25th percentile.

Figure 5: Box plot of mean effect sizes for effect size calculations and grand mean

Results indicated that there was significant variability across the four effect size measures, $F(1,14)=20.52$, $p < .001$. The Peer Comparison and Percentage of Nonoverlapping Data scores both differed significantly from the Treatment minus baseline effect size scores.

Aside from the Tx-Bl effect size calculation, the interpretation of each of the other three effect size calculations was problematic. Regarding the peer comparison effect size calculation, in some cases the magnitude of behavior change in the peer comparison student's behaviors skewed the overall effect size score in a positive direction, thus yielding an effect size that appeared not to be in the desired direction of behavior change. For example, in case #10 the target student's aggressive behavior decreased on average from baseline to intervention phases (i.e., from 3.29 to 2.75). Likewise, the peer comparison student's aggressive behaviors decreased (i.e., from 8.57 to 0). The calculation was as follows: (2.75-3.29) – (0-8.57)/7.05=1.14. As demonstrated, because the peer comparison student's behaviors decreased more than the target student's, the calculation yielded an effect size of 1.14. When compared with other negative effect size values, this outcome erroneously appeared to represent an effect size in the opposite direction.

Regarding the PND effect size scores, Scruggs et al. (1987) claim that the PND is a powerful outcome metric for evaluating outcomes that is "not insensitive to other considerations, such as baseline variability and slope changes" (p. 27). In the current study, the effect size calculations and comparison across cases were adversely affected by

variability in the data that the PND calculation did not accurately represent. In his critique of this method, White (1987) suggested that PND scores could in fact be affected by variability in the data. In the current study, several PND scores were affected by baseline variability and data points of zero.

For example, in case #1 the baseline data points ranged from 23-96% for off-task behavior. The lowest baseline data point was 23, and there was only one treatment data point that exceeded the lowest data point in the expected direction (i.e., treatment data points that were lower than the baseline data point of 23). Divided by the total number of treatment data points (2), the PND was 50% (or a 4.0 as a standardized score). Likewise, for case #11 the PND was 50% for the problem behavior of talking. However, upon closer examination of these cases, the baseline data were highly variable in case #1 (ranging from 23 to 96 with a mean of 32.5), whereas in case #11 the baseline data were less variable (ranging from 64-83, with a mean of 72.6). However, because the PND calculation only included the extreme scores, the calculation yielded identical PND scores that were not representative of the variability in their respective data.

White (1987) also argued that the PND scores are insensitive to differences in magnitude of effect in cases where the PND reaches the ceiling (100%). Likewise, as demonstrated in the current study, PND scores were insensitive to such differences in cases in which the PND was at the basal level (0%). For example, in several cases in which the desired behavior change was a decrease in talking, there were data points of zero in both the baseline phase and the intervention phases. When calculating the PND for this case, although several intervention data points were lower than baseline data

points and some data points were zero, the PND score was zero because there were no 'nonoverlapping' data points in the intervention phase (i.e., data points could not be lower than zero). Thus, for cases in which there was overall behavior change in the desired direction, as represented by the other effect size calculations, the PND scores yielded results that were less than promising and therefore misleading.

Regarding the use of the ITSACORR program to calculate effect sizes, Busse et al. (1995) outlined a major criticism of this procedure regarding the number of data points required that likely had an impact on the current analysis. In order to maintain acceptable error rates and to remove the influence of autocorrelation (i.e., dependence among data points), Crosbie (1993) indicated that a minimum of 25 data points per phase may be required for adequate power. In using a t-test to calculate the effect size, the number of data points presents problems in the comparative analysis of outcomes (Glass et al., 1981). In the current study, the number of data points ranged from seven to sixteen across both baseline and intervention phases, with some cases yielding as few as two data points in the treatment phase. The ITSACORR program may require more data points than were collected in the cases in the current study.

The t-score formula was as follows: $\Delta E\text{-}C = t \times [(1/nE + 1/nC)]$, where t = the y-intercept statistic from the ITSACORR computer program, 1/nE= one divided by the number of data points in the treatment phase, and 1/nC= one divided by the number of data points in the baseline phase. For case #1 the effect size was calculated as follows: t (-.33) x (1/2 + 1/9). This calculation yielded an effect size of ES = -.2. Had there been 15

or more data points per phase, this effect size would have been significantly altered, and calculated as follows: $\Delta E\text{-}C = t \times [(1/nE + 1/nC)] = t\ (-.33) \times (1/15 + 1/15) = -.04$.

The mean of the Tx-Bl effect size values ($M = -1.17$) most closely resembled the grand mean ($M = -1.23$). The Tx-Bl effect size calculation was the simplest version of analyzing the single subject data, and no obvious distortions of the data were noted with this calculation. However, each of the other calculations introduced distortions to the data and erroneous interpretations of the effects sizes across cases. Thus, the simplest version of analyzing single subject data, the Tx-Bl effect size calculation, was selected for subsequent analyses.

Chapter 5: Results and Description of Findings

Of the 12 cases in the current study, 9 cases involved two or more target behaviors. The Tx-Bl effect size calculations for each of these cases comprised one data set, and the mean of the two or three effect sizes for each case were calculated and comprised another data set. A paired sample t-test was conducted to determine whether or not there was a significant difference between the two distributions of scores. Results indicated that there was not a significant difference between the two distributions, t=.000, p=1.0. Thus the mean effect sizes for each case were used as the treatment outcomes in subsequent analyses.

Effect size outcomes were evaluated according to Cohen's (1992) standard index of small effect size (.20), medium (.50), and large (.80). The distribution of effect size scores were divided according to this index, and effect sizes were assigned respective nominal values (i.e., 1=small, 2=medium, 3=large). Each case was also assigned a nominal value according to type of treatment or case type (i.e., 1=FBA, 2=CBC). Table 4 illustrates the summary of effect size data for all cases included in the study:

Table 4
Summary of Cases

	Case	#Meetings	Thought Units	Effect Size Value	Effect Size Category
FBA cases					
	1	1	716	-.93	Large (3)
	9	2	1408	-.58	Medium (2)
	10	3	1247	-.37	Small (1)
	15	2	1565	-.81	Large (3)
	17	1	355	-1.96	Large (3)
	21	2	1263	-1.02	Large (3)
	22	2	1395	-.43	Small (1)
CBC cases					
	2	2	1037	-1.95	Large (3)
	8	3	1778	-.35	Small (1)
	11	3	1110	-1.81	Large (3)
	16	2	493	-.44	Small (1)
	19	2	1338	-1.70	Large (3)

Note: FBA= Functional Behavioral Assessment Model, CBC= Conjoint Behavioral Consultation model. *Effect size Categories*: Small =(.2-.49), Medium=(50-.79), Large=(>.8)

Statistical Analyses for Research Questions.

Frequencies of message categories as coded with the CAR for participants in each case were calculated and summarized into a data set. The 'source' variable was created to collapse across individuals according to their respective roles across groups in cases in which more than one teacher or other professional is in attendance (i.e., message source as consultant, teacher-consultee, parent-consultee, psychologist/therapist-consultee, principal-consultee, or student). The problem solving meetings ranged from one to three

meetings per case, with most cases averaging two meetings. The length of the meetings, in terms of the number of thought units, ranged from 355 to 1,778 thought units across all meetings for each case.

New variables were also created to represent the combined subcategories of communication variables. A new variable, Behavioral, was created additively to include the Behavior and Behavior Setting subcategories. This new variable was created to allow for statistical analyses of whether or not the Behavior and Behavior Setting subcategories had an impact on effect size outcomes additively (i.e., higher incidence of both Behavior and Behavior Setting subcategories associated with large effect sizes), or a differential impact on effect size outcomes than did each of the subcategories alone, between FBA and CBC cases.

Likewise, the Directive variable was created to include Process Overt, Summarization, and Elicitor subcategories, to determine whether or not the frequencies of these subcategories collectively were related to effect sizes and case type. The Functional communicative acts were not combined in this manner, as predictions were made about each of the five problem solving functions subcategories. An additive category of all five functions would have represented all of the coded data and would have not provided a meaningful analysis of the relationship between the communicative variables and effect sizes, whereas the CAR subcategories represented only a subset of all the CAR content and process subcategories.

In total, there were seven FBA cases and five CBC cases. A preliminary chi square analysis was conducted to assess the nature of the relationship between case type

(i.e., FBA or CBC) and effect size category (i.e., small or 1, medium or 2, large or 3). Table 5 illustrates the results of this analysis:

Table 5

Test of relationship between the frequency of Case type and Effect Size Category (Categories Lo, Medium and High)

	Effect Size Category			
	Lo	Med	Hi	Total
Case type FBA Count	2644	2975	2336	7955
Exp. Value	2852	1726	3378	7955
% w/inES	53.8	100	40	58
CBC Count	2273	0	3487	5760
Exp. Value	2065	1250	2446	5760
% w/inES	46.2	0	60	42

Note: Effect Size Category = the category of effect size as determined by the distribution of effect size scores, i.e. Lo=small (<.49), Med=medium (.50-.79), Hi=large (>.8). Case type = the type of intervention employed for the case, i.e., FBA = Functional Behavioral Assessment, CBC= Conjoint Behavioral Consultation. Count = the actual frequency count of the specified variable (i.e., the number of case type 1 in effect size category 1); Exp. Value =Expected Value, or the expected count of the specified variable based on random variation; %w/in ES= the actual percentage of the specified case types observed within the specified effect size category. *Indicates statistical significance at p<.005.

The Chi Square statistic is a measure of association to assess the strength and nature of the dependence of the frequency of case type and effect size category. The results of this first analysis were significant, X^2 (2, N = 13715) = 2954.9, p = .001. This significant result suggested that the actual frequency of FBA and CBC case types significantly varied with the effect size categories Lo (small effect size), Medium (medium effect size) and Hi (large effect size) beyond what would have been expected based on random variation. However, the initial inclusion of all 12 cases with the three

effect size categories introduced an artifact into the data set because only one case (case #9, an FBA) had a medium effect size. Thus, the analysis was significant only because there were so few thought units in CBC cases (i.e., for case #9 only) and no thought units for CBC cases with medium effect sizes. As there was no corresponding medium effect size case among the CBC cases, this case was eliminated, and subsequent analyses of the relationship between the proportion of communicative acts and effect sizes by case type were conducted only on the remaining 11 cases of small and large effect size categories.

Some case meetings yielded more thought units (i.e., more rows of data) than other cases. Cross-tabulation data indicated that the number of thought units per case type were not substantially different. The total number of thought units per case type was 53% in FBA cases and 47% in CBC cases.

Crosstabulations of the data were conducted to determine the average proportion of each communication variable observed across each of the FBA and CBC cases. These data were then used in a series of two-way Analyses of Variance (ANOVA), testing the difference between the average proportion of each communication variable by case type and effect size. The two-way ANOVA is a form of the General Linear Model (GLM) that tests whether population means differ with respect to two factors (e.g., case type and effect size). In a two-way ANOVA, three different null hypotheses are tested, one at a time, with three resulting F-ratios for the two factors and the interaction between the two factors (Witte, 1993). The GLM allows the model to be fit to the data that follow probability distributions other than the normal distribution, and relaxes the requirement of

equality of variances that is required for hypothesis testing in traditional linear models (Trochim, 2001).

Table 6 illustrates the results from the crosstabulation analyses of the functional communication variables for each of the 11 cases included:

Table 6
Percentage of Functional Communication variables within each case from Crosstabulation analysis of Case by Variables

	OP	PA	GAS	CEAS	EVAL
FBA Cases					
1	10.0	47.6	10.2	12.1	6.8
10	16.1	33.2	12.5	8.8	16.5
15	5.5	28.3	10.1	4.0	19.5
17	4.2	64.8	3.7	2.5	14.9
21	9.1	21.5	12.0	6.4	6.9
22	17.0	36.0	8.5	4.5	14.9
N=6					
CBC Cases					
2	.7	29.3	7.2	1.1	12.4
8	6.3	40.4	6.1	10.5	11.5
11	7.2	13.8	17.7	20.4	17.9
16	9.5	65.7	2.7	5.7	12.2
19	7.2	32.9	7.4	8.7	9.6
N=5					

Note: FBA= Functional Behavioral Analysis cases; CBC = Conjoint Behavioral Consultation Cases; OP = Operating Procedures communicative acts, behaviors which function to help discussants decide on actions that need to be accomplished during the meeting, how to structure and organize the discussion, and how they should go about solving the problem; PA = Problem Analysis communicative acts, behaviors which function to analyze nature of the problem, extent and seriousness of the problem, problems with current solution or set of circumstances, or possible causes of the problem; GAS= Generating Alternative Solutions communicative acts, behaviors which function to help group identify an alternative solution to solving the problem, and things that will need to be done by team members to implement the intervention; CEAS = Criteria for Evaluating Alternative Solutions, behaviors which function to establish evaluative criteria for solutions, i.e., what a good solution or intervention would look like, discussing how team will know when the intervention is working or not working, and things that will need to be done by team members to evaluate intervention; EVAL = Evaluation; behaviors which function to evaluate positive and/or negative qualities of each solution or intervention choice, discussing important implications of accepting solutions, and selecting one that meets the criteria for a 'good' solution.

Table 7 illustrates the results from the crosstabulation analyses of the behavioral communication variables for each of the 11 cases include in the study:

Table 7
Percentage of Behavioral Communication variables within each case from Crosstabulation analysis of Case by Variables

	Behavior	Beh Setting	Behavl	Ind. Char
FBA Cases				
Case 1	38.1	15.1	53.1	4.5
Case 10	21.4	9.5	30.8	5.5
Case 15	22.9	9.3	32.1	3.1
Case 17	33.5	12.4	45.9	4.5
Case 21	18.3	13.4	31.7	2.1
Case 22	18.8	8.2	27.1	5.2
N=6				
CBC Cases				
Case 2	20.5	6.8	27.3	11.2
Case 8	25.9	21.1	47.0	3.5
Case 11	19.3	14.0	33.2	1.4
Case 16	32.8	20.0	52.8	1.4
Case 19	24.7	8.8	33.5	6.8
N=5				

Note: FBA = Functional Behavioral Analysis cases; CBC = Conjoint Behavioral Consultation Cases; Behavior =what the client does, which includes utterances dealing with the client's overt actions (e.g., talking and walking) and tasks currently performed by the client, the strength of the behavior, records of behavior (i.e., graphs or anecdotal records), and behavioral goals; Beh Setting= Behavior Setting = verbalizations referring to antecedent (events that precede the behavior), consequent (events that occur immediately after the behavior and may control the probability of occurrence), and sequential conditions (the time of day or day of week when behaviors typically occur), or the patterning of antecedent and consequent conditions across a series of occasions surrounding behaviors ; Behl = Behavioral =combined subcategories of Behavior and Behavior Setting ; Ind Char = Individual Characteristics = verbalizations about individual attributes of the client, referring to conditions or states of the individual (i.e., intellectual, personality, physical, and neurological characteristics) rather than verbalizations about observable behaviors.

Table 8 illustrates the results from the crosstabulation analyses of the directive communication variables for each of the 11 cases included:

Table 8
Average percentage of Directive Communication variables per case type

	Provert	Summ	Elicitor	Directive
FBA Cases				
Case 1	8.8	10.8	7.8	8.5
Case 10	15	20.7	18.9	16.5
Case 15	8.8	6.7	4.9	7.4
Case 17	1.6	4.3	2.5	2.6
Case 21	8.7	9.5	5.4	7.9
Case 22	25.2	8.4	6.0	14.5
N=6				
CBC Cases				
Case 2	3.6	.90	15.7	7.5
Case 8	11.7	12.7	13.1	12.7
Case 11	5.3	14.2	11.9	9.9
Case 16	3.4	7.5	7.7	6.0
Case 19	7.9	4.3	6.2	6.5
N=5				

Note: FBA= Functional Behavioral Analysis cases; CBC = Conjoint Behavioral Consultation Cases; Provert = Process Overt content code = overt statements about the problem solving process itself rather than the problem behavior being discussed; Summ = Summarization = verbalizations that provide or call for review of information; Elicitor = questions directed toward consultees to gather information or clarify issues; Directive = combined category of Process Overt, Summarization, and Elicitors.

Research Question 1: Functional Communicative Acts

Regarding the functional communicative acts as measured with the PSF, five separate GLM analyses were conducted to test whether there were significant differences between the proportion of each of the functional subcategories of communication by

treatment effect size (small or large) and case type (FBA or CBC). Predictions were that there would be a larger average proportion of Operating Procedures communicative acts (i.e., statements that help the group decide on tasks to be accomplished during the meeting, how they should go about approaching the task, how to structure and organize the discussion) as coded with the PSF in cases with large effect sizes, exploring the effect of case type. Likewise, it was predicted that there would be a larger proportion of Problem Analysis communicative acts (i.e., behaviors which help the group to identify the nature of the problem, the extent and seriousness of the problem, problems with the present solution or set of circumstances) in cases with large effect sizes, exploring the effect of case type. Finally, it was predicted that there would be a larger proportion of Generating Alternative Solutions communicative acts (i.e., statements which help the group identify and elaborate upon alternative interventions or solutions to solving the problem) in cases with large effect sizes, exploring the effect of case type.

Table 9 illustrates the descriptive statistics for each of the five communication variables, and table 10 illustrates the two-way ANOVAs for the Operating Procedures, Problem Analysis, and Generating Alternative Solutions subcategories by case type and effect size:

Table 9
Descriptives: Functional Communication variables by Effect Size And Case Type

	FBA			CBC			Total (FBA and CBC)		
OP	ES	Mean	SD	ES	Mean	SD	ES	Mean	SD
	Lo	16.55	.64	Lo	7.9	2.27	Lo	12.23	5.18
	Hi	7.2	2.8	Hi	5.03	3.75	Hi	6.27	3.15
	Total	10.32	5.30	Total	5.03	3.75	Total	8.44	4.80
PA	FBA			CBC			Total (FBA and CBC)		
	ES	Mean	SD	ES	Mean	SD	ES	Mean	SD
	Lo	34.6	1.98	Lo	53.05	17.89	Lo	43.83	14.88
	Hi	40.55	19.59	Hi	25.33	10.15	Hi	34.03	17.10
	Total	38.57	15.50	Total	37.59	16.32	Total	37.59	16.32
GAS	FBA			CBC			Total (FBA and CBC)		
	ES	Mean	SD	ES	Mean	SD	ES	Mean	SD
	Lo	10.5	2.83	Lo	4.4	2.4	Lo	7.45	4.12
	Hi	9.0	3.64	Hi	10.77	6.00	Hi	9.76	4.42
	Total	9.5	3.19	Total	8.92	4.26	Total	8.92	4.26
CEAS	FBA			CBC			Total (FBA and CBC)		
	ES	Mean	SD	ES	Mean	SD	ES	Mean	SD
	Lo	6.65	3.04	Lo	8.10	3.39	Lo	7.38	2.76
	Hi	6.25	4.22	Hi	10.07	9.72	Hi	7.89	6.68
	Total	6.38	3.54	Total	9.28	7.16	Total	7.7	5.39
EVAL	FBA			CBC			Total (FBA and CBC)		
	ES	Mean	SD	ES	Mean	SD	ES	Mean	SD
	Lo	15.7	1.13	Lo	11.85	.50	Lo	13.78	2.33
	Hi	12.03	6.26	Hi	13.3	4.22	Hi	12.57	4.10
	Total	13.25	5.23	Total	12.72	3.10	Total	13.01	4.20

Note: OP=Operating Procedures; PA=Problem Analysis, GAS=Generating Alternative Solutions; CEAS= Criteria for Evaluating Alternative Solutions; EVAL=Evaluation; FBA= Functional Behavioral Assessment, CBC = Conjoint Behavioral Consultation; Total (FBA and CBC)= statistics for all cases;ES: Lo = small effect size (<.49), Hi = large effect size (>.80); Total = avg. for all categories; Mean = avg. proportion of communicative acts; SD= Standard deviation of proportion of communicative acts.

Table 10
Tests of Between-Subjects Effects of Operating Procedures, Problem Analysis and Generating Alternative Solutions by Case Type and Effect Size

Source	Type III SS	df	MS	F	Sig.	Power
Operating Procedures						
Corrected Model	173.09	3	57.7	7.1	.016	.84
Intercept	849.9	1	849.9	104.3	.00	1.0
CASE TYPE	73.9	1	73.9	9.1	.02*	.73
EFFECT SIZE	94.3	1	94.3	11.6	.01*	.89
CASE TYPE X ES	26.5	1	26.5	3.3	.11	.35
Error	57.03	7	8.15			
Total	1013.02					
Corrected Total	230.13	10				
Problem Analysis						
Corrected Model	981.627	3	327.2	1.4	.33	.23
Intercept	14887.9	1	14887.9	62.0	.00	1.0
CASE TYPE	6.6	1	6.6	.03	.87	.05
EFFECT SIZE	299.2	1	299.2	1.2	.3	.16
CASE TYPE X ES	715.9	1	715.9	2.9	.13	.32
Error	1680.7	7	240.1			
Total	18206.2	11				
Corrected Total	2662.3	10				
Generating Alternative Solutions						
Corrected Model	56.1	3	18.7	1.04	.43	.18
Intercept	759.0	1	759.0	42.3	.00	1.0
CASE TYPE	11.9	1	11.9	.66	.44	.12
EFFECT SIZE	14.9	1	14.9	.83	.39	.13
CASE TYPE * ES	39.09	1	9.09	2.18	.18	.25
Error	125.65	7	17.95			
Total	1056.6	11				
Corrected Total	181.8	10				

Note: Type III SS = sum of squared deviations of scores about overall mean; df = degrees of freedom; MS = Mean Square = variance estimate of sum of squares divided by df; F = F ratio of between-group mean square (for cases treated differently) to within-group mean square (for cases treated similarly); Sig. = level of significance; Power = probability of detecting an effect. Case type = Results of test formain effect for case type, i.e., FBA or CBC model; Effect Size = results of test for main effect for Effect Size category, i.e., Lo=small effect size, Hi=large effect size; Case type * ES = results of test of interaction between case type and effect size, i.e., when effects of one factor are not consistent for all values of the other factor; Error = variance unaccounted for by the identified factors; Total = total variance explained and unexplained. * Indicates significance at $p<.05$.

Regarding the Operating Procedures communicative acts, results indicated that there was a significant main effect for case type, $F(1)=9.07$, $p<.01$. There was a difference in the average proportion of Operating Procedures communicative acts across FBA and CBC cases, specifically the average proportion of Operating Procedures communicative acts was larger in FBA cases ($M=10.32$) than in CBC cases ($M=6.18$). There was also a significant main effect for effect size, $F(1) = 11.57$, $p<.05$. The average proportion of Operating Procedures communicative acts was larger in cases with small effect sizes ($M=12.23$) than in cases with large effect sizes ($M=6.27$). There was no significant interaction between case type and effect size. These findings were in the opposite direction of the prediction. Thus, hypothesis 1a was not confirmed.

Regarding the Problem Analysis communicative acts, there were no significant main effects or interactions for the Problem Analysis subcategory. Thus, hypothesis 1b was not confirmed. There were no significant main effects or interactions for the Generating Alternative Solutions subcategory. Thus, hypothesis 1c was not confirmed.

Predictions regarding the remaining functional communication variables were that there would be a larger proportion of Criteria for Evaluating Alternative Solutions communicative acts (i.e., behaviors which help the group decide what a good intervention would look like, establish appropriate evaluative criteria) in cases with large effect sizes, exploring the effect of case type. In addition, it was predicted that there would be a larger proportion of Evaluation communicative acts (i.e., behaviors which help the group to discuss positive and negative aspects of the proposed solutions) in cases with large effect sizes, exploring the effect of case type. Table 11 illustrates the analyses with Criteria for

Evaluating Alternative Solutions and Evaluation subcategories by case type and effect size:

Table 11
Tests of Between-Subjects Effects of Problem Analysis by Case Type and Effect Size

Source	Type III SS	df	MS	F	Sig.	Power
Criteria for Evaluating Alternative Solutions						
Corrected Model	27.74	3	9.25	.25	.86	.08
Intercept	609.56	1	609.56	16.21	.01	.93
CASE TYPE	17.52	1	17.52	.47	.52	.09
EFFECT SIZE	1.55	1	1.56	.04	.85	.05
CASE TYPE * ES	3.54	1	3.54	.09	.77	.06
Error	263.18	7	37.6			
Total	943.11	11				
Corrected Total	290.92	10				
Evaluation						
Corrected Model	21.3	3	.71	.32	.81	.09
Intercept	1765.75	1	1765.75	79.8	.00	1.0
CASE TYPE	4.19	1	4.19	.19	.68	.07
EFFECT SIZE	3.13	1	3.13	.14	.72	.06
CASE TYPE * ES	16.6	1	16.6	.75	.42	.12
Error	154.9	7	22.13			
Total	2037.8	11				
Corrected Total	176.19	10				

Note: Type III SS = sum of squared deviations of the set of scores about their overall mean; df = degrees of freedom, the number of deviations free to vary in the sum of squares term; MS = Mean Square = variance estimate of sum of squares divided by degrees of freedom; F = F ratio = ratio of between-group mean square (for cases treated differently) to within-group mean square (for cases treated similarly); Sig. = level of significance; Power = observed power or probability of detecting an effect. Case type = Results of the test for a main effect for case type, i.e., FBA or CBC model; Effect Size = results of the test for a main effect for Effect Size category, i.e., Lo=small effect size, Hi=large effect size; Case type * ES (Effect size) = results of the test of the interaction between case type and effect size, i.e., when the effects of one factor are not consistent for all values of the other factor; Error = variance unaccounted for by the identified factors; Total = total variance explained and unexplained. * Indicates significance at $p<.05$

Regarding the Criteria for Evaluating Alternative Solutions communicative acts, results indicated that there were no significant main effects for case type or effect size, and no significant interactions. That is, there were no significant differences in the average proportion of Criteria for Evaluating Alternatives communication across FBA and CBC cases, or across cases with small and large effect sizes. Thus, hypothesis 1d was not confirmed. Regarding the Evaluation communicative acts, there were no significant main effects for case type or effect size, and no significant interactions. That is, there were no significant differences in the average proportion of Evaluation communication across the FBA and CBC cases, or across cases with small and large effect sizes. Thus, hypothesis 1e was not confirmed.

Research Question 2: Behavioral Communicative Acts

Regarding the behavioral content communicative acts as measured with the CAR, a series of two-way ANOVAs were conducted to explore whether or not there were differences in the average proportion of behavioral communication in school-based problem solving teams by effect size (small or large) and case type (FBA or CBC). Regarding the Behavior communicative acts (i.e., statements addressing what the client does), it was predicted that there would be a larger average proportion of Behavior communicative acts in cases with large effect sizes, and that there would be a larger average proportion of this communication in FBA cases. Regarding the Behavior Setting communicative acts (i.e., verbalizations referring to the antecedent, consequent, and sequential conditions occurring contiguously with a client's behavior), it was predicted that there would be a larger average proportion of Behavior Setting communicative acts

in cases with large effect sizes and in FBA cases. Table 12 illustrates the descriptive statistics for the Behavioral communication variables, and Table 13 illustrates the results from the two-way ANOVAs for the Behavior and Behavior Setting communicative acts by case type and effect size.

Table 12
Descriptive Statistics for the Behavioral communication variables by Effect Size and Case Type

Beh	FBA			CBC			Total (FBA and CBC)		
	ES	Mean	SD	ES	Mean	SD	ES	Mean	SD
	Lo	20.1	1.84	Lo	29.35	4.88	Lo	24.73	6.13
	Hi	28.2	9.17	Hi	21.5	2.84	Hi	25.33	7.59
	Total	25.5	8.28	Total	25.33	7.59	Total	25.11	6.77
BS	FBA			CBC			Total (FBA and CBC)		
	ES	Mean	SD	ES	Mean	SD	ES	Mean	SD
	Lo	8.85	.92	Lo	20.55	.78	Lo	14.70	6.79
	Hi	12.55	2.44	Hi	9.87	3.72	Hi	11.40	3.10
	Total	11.32	2.72	Total	14.14	6.43	Total	12.60	4.73
Behl	FBA			CBC			Total (FBA and CBC)		
	ES	Mean	SD	ES	Mean	SD	ES	Mean	SD
	Lo	28.95	2.62	Lo	49.90	4.10	Lo	39.43	12.42
	Hi	40.70	10.58	Hi	31.33	3.50	Hi	36.69	9.23
	Total	36.78	10.26	Total	38.76	10.66	Total	37.68	9.96
Ind Ch	FBA			CBC			Total (FBA and CBC)		
	ES	Mean	SD	ES	Mean	SD	ES	Mean	SD
	Lo	5.35	.21	Lo	2.45	1.48	Lo	3.90	1.89
	Hi	3.55	1.17	Hi	6.47	4.91	Hi	4.80	3.34
	Total	4.15	1.30	Total	4.86	4.18	Total	4.47	2.82

Note: Beh= Behavior; BS=Behavior Setting; Behl=Behavioral (Behavior + Behavior Setting); Ind Ch = Individual Characteristics; FBA= Functional Behavioral Assessment cases, CBC= Conjoint Behavioral Consultation cases; Total (FBA and CBC)= statistics for all cases; ES= Effect size category: Lo = small effect size (<.49), Hi = large effect size (>.80); Total = average for the specified combined categories. Mean = average proportion of communicative acts; SD= Standard deviation of the proportion of communicative acts

Table 13
Tests of Between-Subjects Effects of Behavior and Behavior Setting communicative acts by Case type and Effect Size

Source	Type III SS	df	MS	F	Sig.	Power
Behavior						
Corrected Model	163.4	3	54.5	1.3	.35	.22
Intercept	6208.88	1	6208.88	147.1	.00	1.0
CASE TYPE	4.11	1	4.11	.1	.76	.06
EFFECT SIZE	3.94	1	3.94	.00	.98	.05
CASE TYPE * ES	160.68	1	160.68	3.81	.09	.39
Error	295.57	7	42.21			
Total	7394.04	11				
Corrected Total	458.91	10				
Behavior Setting						
Source	Type III SS	df	MS	F	Sig.	Power
Corrected Model	176.95	3	58.99	8.81	.01	.91
Intercept	1795.77	1	1695.77	253.17	.00	1.0
CASE TYPE	51.35	1	51.35	7.67	.03*	.66
EFFECT SIZE	30.8	1	30.8	4.6	.07	.46
CASE TYPE * ES	139.66	1	130.66	19.51	.00*	.96
Error	46.89	7	6.7			
Total	1970.2	11				
Corrected Total	223.84	10				

Note: Type III SS = sum of squared deviations of the set of scores about their overall mean; df = degrees of freedom, the number of deviations free to vary in the sum of squares term; MS = Mean Square = variance estimate of sum of squares divided by degrees of freedom; F = F ratio = ratio of between-group mean square (for cases treated differently) to within-group mean square (for cases treated similarly); Sig. = level of significance; Power = observed power or probability of detecting an effect. Case type = Results of the test for a main effect for case type, i.e., FBA or CBC model; Effect Size = results of the test for a main effect for Effect Size category, i.e., Lo=small effect size, Hi=large effect size; Case type * ES (Effect size) = results of the test of the interaction between case type and effect size, i.e., when the effects of one factor are not consistent for all values of the other factor; Error = variance unaccounted for by the identified factors; Total = total variance explained and unexplained. * Indicates significance at $p<.05$.

Regarding the Behavior subcategory, there were no significant main effects for case type or effect size. That is, there were no significant differences in the average proportion of the Behavior communicative acts between the FBA and CBC cases. Thus, hypothesis 2a and 2b were not confirmed. There was no significant interaction of case type and effect size. That is, there were no significant differences in the average proportion of the Behavior communicative acts between the FBA and CBC cases with small and large effect sizes. Thus, hypothesis 2c was not confirmed.

Regarding the Behavior Setting subcategory, there was no significant main effect for effect size in the Behavior Setting category. That is, there was no significant difference in the average proportion of Behavior Setting communicative acts between small and large effect size cases. Thus, hypothesis 2d was not confirmed.

There was a significant main effect for case type, $F(1) = 7.7$, $p<.03$. That is, there was a significant difference in the average proportion of Behavior Setting communicative acts between the FBA and CBC cases. Specifically, the average proportion of Behavior Setting communicative acts was larger in CBC cases (M = 14.14) than in FBA cases (M = 11.32). This finding was in the opposite direction of the prediction. Thus, hypothesis 2e was not confirmed.

There was a significant interaction between case type and effect size in the average proportion of Behavior Setting communicative acts, $F(1) = 19.51$, $p<.00$. For FBA cases, the average proportion of Behavior Setting communicative acts was higher in cases with large effect sizes (M = 12.55). However, for CBC cases, the average

proportion of Behavior Setting communicative acts was higher in cases with small effect sizes (M= 20.55). Thus, hypothesis 2f was confirmed.

Regarding the Behavioral category (i.e., Behavior and Behavior Setting subcategories combined), it was predicted that there would be a larger average proportion of Behavioral communication in cases with large effect sizes. The prediction was that there would also be a larger average proportion of Behavioral communication in FBA cases than in CBC cases. Table 14 illustrates the results of the two-way ANOVA for Behavioral communicative acts with effect size and case type:

Table 14
Tests of Between-Subjects Effects for Behavioral communicative acts by Case type and Effect Size

Source	Type III SS	df	MS	F	Sig.	Power
Corrected Model	608.41	3	202.8	3.7	.07	.55
Intercept	14378.4	1	14378.4	262.19	.00	1.0
CASE TYPE	84.74	1	84.74	1.55	.25	.19
EFFECT SIZE	29.35	1	29.35	.54	.49	.09
CASE TYPE * ES	580.48	1	5480.48	10.59	.01*	.80
Error	383.87	7	54.84			
Total	16611.39	11				
Corrected Total	992.2	10				

Note: Type III SS = sum of squared deviations of the set of scores about their overall mean; df = 1degrees of freedom, the number of deviations free to vary in the sum of squares term; MS = Mean Square = variance estimate of sum of squares divided by degrees of freedom; F = F ratio = ratio of between-group mean square (for cases treated differently) to within-group mean square (for cases treated similarly); Sig. = level of significance; Power = observed power or probability of detecting an effect. Case type = Results of the test for a main effect for case type, i.e., FBA or CBC model; Effect Size = results of the test for a main effect for Effect Size category, i.e., Lo=small effect size, Hi=large effect size; Case type * ES (Effect size) = results of the test of the interaction between case type and effect size, i.e., when the effects of one factor are not consistent for all values of the other factor; Error = variance unaccounted for by the identified factors; Total = total variance explained and unexplained. * Indicates significance at $p<.05$.

Regarding the Behavioral communicative acts, results indicated that there was no significant main effect of effect size. That is, there was no significant difference between the average proportion of Behavioral communicative acts across small and large effect sizes. Thus, hypothesis 2g was not confirmed.

There was no significant main effect of case type for the Behavioral communicative acts. That is, there was no significant difference between the average proportion of Behavioral communicative acts between the FBA and CBC cases. Thus, hypothesis 2h was not confirmed.

There was a significant interaction of case type and effect size, $F(1)=10.59$, $p<.01$. For the FBA cases, the average proportion of Behavioral communicative acts was larger in cases with large effect sizes ($M=40.70$). However, for the CBC cases, the average proportion of Behavioral communicative acts was larger in cases with small effect sizes ($M=49.90$). Thus, hypothesis 2i was confirmed.

Regarding the Individual Characteristics communicative acts (i.e., verbalizations about individual attributes of the client), it was predicted that there would be a larger average proportion of Individual Characteristics communication in cases with small effect sizes. The prediction was also that there would be a large average proportion of Individual Characteristics communicative acts in CBC cases, and that there would be a large proportion of this type of communication in CBC cases with small effect sizes. Table 15 illustrates the results of the two-way ANOVA for the Individual Characteristics subcategory with case type and effect size:

Table 15
Tests of Between-Subjects Effects for Individual Characteristics communicative acts by Case type and Effect Size

Source	Type III SS	df	MS	F	Sig.	Power
Corrected Model	25.06	3	8.35	1.07	.42	.19
Intercept	200.48	1	200.48	25.73	.00	.99
CASE TYPE	1.75	1	1.75	.00	.99	.05
EFFECT SIZE	3.1	1	3.10	.40	.55	.09
CASE TYPE * ES	21.37	1	21.37	2.74	.14	.30
Error	54.55	7	7.80			
Total	299.66	11				
Corrected Total	79.60	10				

Note: Type III SS = sum of squared deviations of the set of scores about their overall mean; df = degrees of freedom, the number of deviations free to vary in the sum of squares term; MS = Mean Square = variance estimate of sum of squares divided by degrees of freedom; F = F ratio = ratio of between-group mean square (for cases treated differently) to within-group mean square (for cases treated similarly); Sig. = level of significance; Power = observed power or probability of detecting an effect. Case type = Results of the test for a main effect for case type, i.e., FBA or CBC model; Effect Size = results of the test for a main effect for Effect Size category, i.e., Lo=small effect size, Hi=large effect size; Case type * ES (Effect size) = results of the test of the interaction between case type and effect size, i.e., when the effects of one factor are not consistent for all values of the other factor; Error = variance unaccounted for by the identified factors; Total = total variance explained and unexplained. * Indicates significance at $p<.05$.

Regarding the Individual Characteristics subcategory, results indicated that there was no significant main effect for effect size. That is, there was no significant difference in the average proportion of Individual Characteristics communication between small and large effect size cases. Thus, hypothesis 2j was not confirmed. There was no significant main effect for effect size. That is, there was no significant difference in the average proportion of Individual Characteristics communication between the FBA and CBC cases. Thus, hypothesis 2k was not confirmed. There was no significant interaction of case type and effect size. That is, there was no significant difference in the average

proportion of Individual Characteristics communication between FBA and CBC cases with small and large effect sizes. Thus, hypothesis 21 was not confirmed.

Directive Communicative Acts

Regarding directive communication, the general prediction was that there would be a difference in the average proportion of directive communicative acts as measured with the CAR in school-based problem solving teams by effect size (small or large) and case type (FBA or CBC). The prediction was that there would be a larger proportion of Process Overt communicative acts (e.g., verbalizations that address the problem solving process itself rather than aspects of the presenting problem) in cases with large effect sizes, exploring the effect of case type.

Table 16 illustrates the descriptive statistics for the Directive communication variables, and Table 17 illustrates the results of the two-way ANOVA for Process Overt communicative acts by case type and effect size:

Table 16
Descriptive Statistics for the Directive communication variable by Effect Size and Case Type

	FBA			CBC			Total (FBA and CBC)		
PROV	ES	Mean	SD	ES	Mean	SD	ES	Mean	SD
	Lo	20.10	7.21	Lo	7.55	5.87	Lo	13.83	9.01
	Hi	6.98	3.58	Hi	5.60	2.17	Hi	6.39	2.92
	Total	11.35	8.00	Total	6.38	3.48	Total	9.09	6.60
SUMM	FBA			CBC			Total (FBA and CBC)		
	ES	Mean	SD	ES	Mean	SD	ES	Mean	SD
	Lo	14.55	8.70	Lo	10.10	3.68	Lo	12.33	6.03
	Hi	7.83	2.91	Hi	6.47	6.91	Hi	7.24	4.55
	Total	10.07	5.78	Total	7.92	5.59	Total	9.09	5.47
ELIC	FBA			CBC			Total (FBA and CBC)		
	ES	Mean	SD	ES	Mean	SD	ES	Mean	SD
	Lo	12.45	9.12	Lo	10.40	3.82	Lo	11.43	5.83
	Hi	5.15	2.17	Hi	11.27	4.78	Hi	7.77	4.55
	Total	7.58	5.80	Total	10.92	3.91	Total	9.10	5.10
DIR	FBA			CBC			Total (FBA and CBC)		
	ES	Mean	SD	ES	Mean	SD	ES	Mean	SD
	Lo	15.50	1.41	Lo	9.35	4.74	Lo	12.43	4.56
	Hi	6.60	2.70	Hi	7.97	1.74	Hi	7.19	2.28
	Total	9.57	5.09	Total	8.52	2.78	Total	9.09	4.04

Note: PROV=Process Overt, SUMM=Summarization; ELIC=Elicitor; DIR=Directive (combined category of all three); FBA= Functional Behavioral Assessment cases, CBC= Conjoint Behavioral Consultation cases; Total (FBA and CBC)= statistics for all cases; ES= Effect size category: Lo = small effect size (<.49), Hi = large effect size (>.80); Total = average for the specified combined categories. Mean = average proportion of communicative acts; SD= Standard deviation of the proportion of communicative acts.

Table 17
Tests of Between-Subjects Effects of Process Overt communication by Case type and Effect Size

Source	Type III SS	df	MS	F	Sig.	Power
Corrected Model	301.62	3	100.54	5.24	.033	.71
Intercept	1021.93	1	1021.93	53.24	.00	1.0
CASE TYPE	122.47	1	122.47	6.38	.04*	.59
EFFECT SIZE	143.53	1	143.53	7.48	.03*	.65
CASE TYPE * ES	78.87	1	78.87	4.11	.08	.42
Error	134.37	7	19.2			
Total	1345.08	11				
Corrected Total	435.99	10				

Note: Type III SS = sum of squared deviations of the set of scores about their overall mean; df = degrees of freedom, the number of deviations free to vary in the sum of squares term; MS = Mean Square = variance estimate of sum of squares divided by degrees of freedom; F = F ratio = ratio of between-group mean square (for cases treated differently) to within-group mean square (for cases treated similarly); Sig. = level of significance; Power = observed power or probability of detecting an effect. Case type = Results of the test for a main effect for case type, i.e., FBA or CBC model; Effect Size = results of the test for a main effect for Effect Size category, i.e., 1=small effect size, 3=large effect size; Case type * ES (Effect size) = results of the test of the interaction between case type and effect size, i.e., when the effects of one factor are not consistent for all values of the other factor; Error = variance unaccounted for by the identified factors; Total = total variance explained and unexplained. * Indicates significance at $p<.05$.

Regarding the Process Overt subcategory, results indicated that there was a significant main effect for effect size, $F(1) = 7.48$, $p<.03$. This indicates that there was a significant difference in the average proportion of Process Overt communicative acts between small and large effect size cases, specifically that the average proportion of Process Overt communicative acts was higher in cases with small effect sizes (M=13.83) than in cases with large effect sizes (M=6.39). This finding is in the opposite direction of the prediction, as it was predicted that there would be a larger proportion of Process Overt communication in cases with large effect sizes. Thus, hypothesis 3a was not confirmed.

There was a significant main effect of case type, $F(1) = 6.38$, $p<.04$. This indicates that there was a significant difference in the average proportion of Process Overt communicative acts between FBA and CBC cases, specifically that the average proportion of Process Overt communicative acts was larger in FBA cases (M=11.35) than in CBC cases (M=6.38). There was no significant interaction between case type and effect size on the average proportion of Process Overt communication. This indicates that there was no significant difference in the average proportion of Process Overt communicative acts between small and large FBA and CBC cases.

Regarding the Summarization and Elicitor communicative acts, the predictions were that there would be a larger average proportion of Summarization (i.e., statements that review information discussed earlier) communicative acts in cases with large effect sizes, exploring the effect of case type. The prediction was that there would also be a larger average proportion of Elicitor (i.e., questions) communicative acts in cases with large effect sizes, exploring the effect of case type. Table 18 illustrates the results of the two-way ANOVAs with these variables by effect size and case type:

Table 18
Tests of Between-Subjects Effects of Summarization and Elicitor communication by Case type and Effect Size

Source	Type III SS	df	MS	F	Sig.	Power
Summarization						
Corrected Model	88.71	3	29.57	.99	.45	.17
Intercept	957.76	1	957.76	31.93	.00	.99
CASE TYPE	21.31	1	21.31	.71	.43	.11
EFFECT SIZE	67.77	1	67.77	2.26	.18	.26
CASE TYPE * ES	6.04	1	6.04	.20	.67	.07
Error	209.99	7	30			
Total	1207.80	11				
Corrected Total	2989.71	10				
Elicitor						
Corrected Model	102.32	3	34.11	1.51	.29	.25
Intercept	973.81	1	973.81	43.23	.00	1.0
CASE TYPE	10.44	1	10.45	.46	.52	.09
EFFECT SIZE	26.14	1	26.14	1.16	.32	.16
CASE TYPE * ES	42.12	1	42.12	1.87	.21	.22
Error	157.68	7	22.53			
Total	1170.91	11				
Corrected Total	260.00	10				

Note: Type III SS = sum of squared deviations of the set of scores about their overall mean; df = degrees of freedom, the number of deviations free to vary in the sum of squares term; MS = Mean Square = variance estimate of sum of squares divided by degrees of freedom; F = F ratio = ratio of between-group mean square (for cases treated differently) to within-group mean square (for cases treated similarly); Sig. = level of significance; Power = observed power or probability of detecting an effect. Case type = Results of the test for a main effect for case type, i.e., FBA or CBC model; Effect Size = results of the test for a main effect for Effect Size category, i.e., Lo=small effect size, Hi=large effect size; Case type * ES (Effect size) = results of the test of the interaction between case type and effect size, i.e., when the effects of one factor are not consistent for all values of the other factor; Error = variance unaccounted for by the identified factors; Total = total variance explained and unexplained. * Indicates significance at $p<.05$.

Results indicated that there were no significant main effects or interactions for the Summarization subcategory. That is, there were no significant differences in the average proportion of Summarization communicative acts between the FBA and CBC cases, or between cases with small and large effect sizes. Thus, hypothesis 3b was not confirmed. Likewise, there were no significant main effects or interactions for the Elicitor subcategory. There were no significant differences in the average proportion of Elicitor communicative acts between the FBA and CBC cases, or between cases with small and large effect sizes. Thus, hypothesis 3c was not confirmed.

Regarding the Directive communicative acts (category combining Process Overt, Summarization, and Elicitor subcategories), the prediction was that there would be a larger average proportion of Directive communicative acts in cases with large effect sizes, exploring the effect of case type. Table 19 illustrates the results of the two-way ANOVA for Directive communication by case type and effect size:

Table 19
Test of Between-Subjects Effects for Directive communication by case type and effect size

Source	Type III SS	df	MS	F	Sig.	Power
Corrected Model	110.90	3	36.97	4.93	.04	.68
Intercept	981.27	1	9981.27	130.86	.00	1.0
CASE TYPE	14.45	1	14.45	1.93	.21	.23
EFFECT SIZE	66.79	1	66.79	8.91	.02	.73
CASE TYPE * ES	35.68	1	35.68	4.76	.07	.47
Error	52.49	7	7.5			
Total	1072.48	11				
Corrected Total	163.39	10				

Note: Type III SS =sum of squared deviations of scores about their overall mean; df =degrees of freedom, the number of deviations free to vary in sum of squares term; MS = Mean Square =variance estimate of sum of squares divided by degrees of freedom; F=F ratio=ratio of between-group mean square (for cases treated differently) to within-group mean square (for cases treated similarly); Sig.=level of significance; Power = observed power or probability of detecting an effect. Case type=Results of the test for a main effect for case type, i.e., FBA or CBC model; Effect Size = results of the test for a main effect for Effect Size category, i.e., Lo=small effect size, Hi=large effect size;Case type * ES (Effect size) = results of test of interaction between case type and effect size, i.e., when effects of one factor are not consistent for all values of other factor; Error = variance unaccounted for by the identified factors; Total = total variance explained and unexplained. * Indicates significance at $p<.05$.

Regarding the Directive communicative acts, results indicated that there was no significant main effect for case type. That is, there was no significant difference in the average proportion of Directive communication between the FBA and CBC cases. There was a significant main effect of effect size, $F(1) = 8.91$, $p<.02$. That is, the average proportion of Directive communication was larger for cases with small effect sizes (M=12.43) than for cases with large effect sizes (M=7.19). There was no significant interaction for case type and effect size on Directive communication. That is, there was no significant difference in the average proportion of Directive communication between

the FBA and CBC cases with small and large effect sizes. Thus, hypothesis 3d was not confirmed.

Chapter 6: Discussion

Functional Communication

The Problem Solving Functions (PSF) coding system was designed as a tool for assessing functional communicative acts during the initial problem solving stages in which team members collectively identified problem behaviors, analyzed the behaviors, and discussed potential solutions to the problem behaviors. The PSF did not lend itself to analyzing subsequent stages of the problem solving process such as analyzing intervention effects and discussing modifications and generalizations or maintenance strategies. Thus, only the first transcript of each case was coded using the PSF, and the analyses do not address the relationship between functional communicative acts during subsequent meetings (i.e. intervention evaluation) and treatment outcomes.

The general prediction was that there would be larger average proportions of the functional communicative acts as measured by the PSF in school-based problem solving teams in cases with large effect sizes, exploring the effect of case type. Specifically, it was predicted that the average proportion of Operating Procedures, Problem Analysis, Generating Alternative Solutions, Criteria for Evaluating Solutions, and Evaluation communicative acts would be higher in cases with large effect sizes, exploring for the effect of case type on these average proportions. Although there were some significant findings, none of the hypotheses were confirmed through this analysis. However, findings regarding the Operational Procedures communicative acts provide valuable insight into the impact of this type of communication on outcomes between the FBA and CBC cases.

Hypothesis 1a: Operating Procedures

Operating Procedures communicative acts include behaviors that function to help the group decide on actions to be accomplished during team meetings, discuss how they should go about approaching the problem-solving task, and how they should structure and organize the discussion. There was a higher average proportion of Operating Procedures communicative acts in cases with small effect sizes. This finding was in the opposite direction of the prediction, as it was anticipated that more procedural discussion would be associated with better outcomes. In addition, there was a higher average proportion of Operating Procedures communication in FBA cases than in CBC cases.

In an investigation of group effectiveness in small-group decision making, Hirokawa (1980a; 1982) also found a negative linear relationship between attempts to establish operating procedures and group effectiveness. In a meta-analytic study testing the functional perspective on small-group decision-making, Orlitzky and Hirokawa (2001) also found a negative relationship between operational procedures and decision-making effectiveness. Hirokawa (1982) suggested that some procedural comments may have been necessary initially for effective problem solving, but that a higher frequency of procedural comments may have been a symptom of a breakdown in the group's problem solving process.

In the current study, when groups experienced problems in accomplishing task objectives, or if the problem became difficult to analyze due to the complexities of the case, the group may have focused more attention on procedural matters in an attempt to

direct the process more effectively. Thus, a higher frequency of procedural comments may have been symptomatic of a breakdown in the problem solving process or an indication of the complexity of the task. In addition, due to the complexity involved in analyzing and hypothesizing functions of the problem behaviors, this effect was likely more pronounced in the FBA cases than in the CBC cases.

The FBA model was distinct from the CBC model in that the assessment of why problem behaviors occurred in particular settings preceded and directly informed behavior support planning. Conducting the various assessments and using this information to develop testable hypotheses regarding potential functions and contingencies surrounding problem behaviors required additional support from consultants in explaining the steps of the problem solving process and reporting results from the assessment and verification phases. Thus, the added complexity of this process may have accounted for the greater proportion of Operating Procedures communication in the FBA cases. Particularly for cases in which the team experienced difficulties in accomplishing the task objectives (i.e., cases with small effect sizes), more procedural comments may have been required to direct the group discussion.

Two cases in the current study were comparatively analyzed to determine the frequency of procedural communication during the initial phases of the problem solving process. In case #10, an FBA case with a small average effect size (ES= .38), the Operating Procedures comments occurred throughout the meeting, but most frequently during the beginning and end than during the middle phase. For example, 35% of the statements were coded as OP in the first five pages of coding (i.e., first 125 thought

units), then in each set of 5 pages following the percentages were as follows: 18%, 30%, 5%, 2%, 26%. This means that participants emitted Operating Procedures communicative acts more during the initial phases of the problem solving meeting (i.e., establishing objectives for the meeting, reviewing and reporting assessment activities prior to the meeting, and problem analysis) and during the final phase of the meeting (i.e., planning for data collection and intervention implementation) and less during the middle phase of the meeting (i.e., discussing feasible intervention options).

Initially, the consultant outlined the purpose of the meeting (i.e., to discuss and analyze the student's problem behaviors), e.g., "So today we have the grandmother, the classroom teacher, myself, the research assistant....First of all, I will start off with the student's strengths." The consultant then reviewed in detail the assessment activities accomplished prior to the meeting, e.g., "Alright. So what we did was collect some data over the last couple of weeks on (student) with two assigned days. And we had people coming in to really just observe." The consultant then set the stage for the next task in the meeting, e.g., "So what we were able to do is generate summary statements. And I kind of want to pass this out to you so you can kind of get a little better idea of how summary statements kind of go. This right here is how we are going to build a support plan." The consultant then reviewed the interview and assessment results conducted prior to the meeting. This higher frequency of procedural discussion during the initial phase of problem solving appeared to be what this group required to set the stage for the problem solving process, as one participant was unfamiliar with the process as well as the nature of the student's behaviors at school (i.e., the student's grandmother).

The group proceeded to discuss hypotheses regarding antecedent and consequent conditions surrounding a problem behavior. The consultant then clarified task objectives and attempted to establish consensus regarding which problem behavior to focus upon, e.g., "I mean, we can attack multiple ones, but I think that with (student), some of our interventions are going to be able to attack more than one of the hypotheses. But in order for us to do that, I think we should pick one hypothesis and kind of go with that. And so what I was presenting was, which hypotheses should we pick over another?"). The complexity of the task required that the consultant be more directive in facilitating discussion, redirecting, and maintaining focus on the particular task. In addition, given that the FBA process required a systematic review and analysis of the assessment results, the group required frequent redirection from the consultant to accomplish these tasks.

On several occasions, when the group was attempting to establish which problem behaviors and maintaining consequences the interventions would be focused on, the discussion moved toward intervention ideas, and the consultant needed to redirect the group toward the task objectives, e.g., "There's actually some methods that we are going to review in a minute, but I kind of want to work through this and then I will follow through with some of the interventions that I was thinking about. But I also want to get on the same page, make sure that you guys agree that this is what we're working on...this is what's causing him problems." On another occasion in response to a suggestion regarding an intervention from a participant, the consultant stated, "I have an intervention that's....that's one of my intervention ideas, so I will get to that. I know I keep saying that I'm going to, my ideas kind of roll with these things, but I just wanted to get

agreement before I make my presentation (about the intervention ideas) so I wouldn't bias your perceptions of what is going on." Due to the complexity of the problem analysis in this particular case, and the group's inability to reach consensus on the functional hypotheses, more redirection regarding the appropriate sequence of events (i.e., first establishing consensus on hypotheses, then discussing intervention ideas to fit the hypotheses) was required during this phase of the problem solving process.

During the middle of this meeting, less Operational Procedures comments were emitted as the group appeared to progress through discussing intervention ideas and how they would be implemented without difficulty. During the final phase of the meeting, more procedural comments were emitted in summarizing the proposed plan and discussing plans for follow-up with the team, e.g., "So, we'll go with those two, we'll do the reversal, and so we'll review this plan." Over the course of the entire meeting, it appeared that when the team was having difficulty accomplishing task objectives, frequent Operating Procedures comments were required to direct the problem solving process. This higher frequency of procedural comments may have been related to less effective treatment outcomes due to the true complexity of the case and the difficulty that the group experienced in reaching consensus on functional hypotheses.

In contrast, in case #11, a CBC case with a large average effect size (ES=1.81), Operating Procedures communicative acts were emitted less frequently overall, but also occurred most frequently at the beginning of the problem solving process only. That is, 16% of the statements were coded as OP in the first five pages of coding, then in each subsequent set of 5 pages the percentages were as follows: 5.6%, 4.8%, and 1.3%. In this

case, the consultant initially spent time establishing objectives for the meeting (e.g., "We had briefly discussed some issues regarding (student) three weeks ago in relation to his behavior... and I want to you to go ahead and state any ideas that you have or any questions, or suggestions, and start the report, and hopefully I have a really solid intervention strategy"). Later, after discussing the problem behavior, the consultant briefly directed the discussion toward the next phase, intervention planning (e.g., "So, the intervention, I have some intervention strategies based on what we talked about and the percentages that we have here...why don't I read through these particular intervention ideas and get some feedback from you"). In general, procedural comments in this case were far less frequent than in the previous example, but seemed to be associated with smooth, sequential transitions from one problem-solving phase to the next.

Thus, it appears not only that Operating Procedures communicative acts were less frequent in cases associated with better treatment outcomes, but that this type of communication in these cases was most frequent at the beginning of the problem solving meeting, perhaps effectively setting the stage for the problem solving process that followed. For cases in which Operating Procedures comments were more frequent overall (i.e., case #10), the facilitator may have sensed that the group was not working efficiently toward problem solving objectives and made more procedural comments in an attempt to redirect the group discussion. Problem solving teams with higher frequencies of procedural comments may have required more redirection or reminders regarding how to accomplish the task at hand, and may have had more difficulty reaching effective problem solving outcomes, thus contributing to weaker treatment outcomes. Specifically,

teams with the more complex task of accomplishing task objectives within the FBA model may have experienced more difficulty than those utilizing the CBC model. Whereas, team meetings facilitated according to the CBC process may have been able to move more efficiently through the task objectives without explicit procedural reminders, thereby contributing to better treatment outcomes.

The Operating Procedures subcategory is similar to the Process Overt code added to the CAR categories by Gutkin (1996), in that both categories represent attempts to facilitate the problem solving process. Both categories were included in the current study, as the Operating Procedures subcategory is an integral part of the Functional theory and the Process Overt category provides a categorization for verbalizations that would otherwise be coded as "other" using the CAR. The Functional theory predicts that communication is the medium through which task requirements are accomplished, and specific communicative acts that satisfy a critical task requirement (e.g., establishing operating procedures for a problem solving meeting) are related to problem solving outcomes. The Operating Procedures subcategory, which includes all communicative acts that help the group decide on what needs to be accomplished during the team meetings and how to structure and organize the discussion, is an important component of this analysis. However, as the PSF was used to code only the first transcript of each case, the analyses do not address the relationship between Operating Procedures communicative acts and outcomes in subsequent problem solving meetings. The Process Overt category in the CAR, which includes all verbalizations that address the problem solving process itself rather than aspects of the presenting problem, allows for the analysis of this

essential component in relation to other communicative acts as coded with the CAR in all the recorded problem solving meetings. Similar results were observed in the analysis of the Process Overt category. These results in relation to the school consultation literature will be discussed in the Directive communication section.

Hypothesis 1b and 1c: Problem Analysis and Generating Alternative Solutions

Problem Analysis communicative acts include behaviors that help the group identify the nature of the problem behavior, the extent and seriousness of the problem, and problems with the present solution or set of circumstances. The prediction was that there would be a greater average proportion of Problem Analysis communicative acts in cases with large effect sizes, exploring the effect of case type. No significant differences were found in the average proportion of Problem Analysis communicative acts by case type or treatment effect size. Generative Alternative Solutions communicative acts include those behaviors that help the group to identify and elaborate upon alternative solutions to the problem. The prediction was that there would be a greater average proportion of Generating Alternative Solutions communicative acts in cases with large effect sizes, exploring the effect of case type. No significant differences were found in the average proportion of Generating Alternative Solutions communicative acts (i.e., behaviors that help the group to generate and build upon feasible intervention ideas) by case type or effect size.

The average proportion of the Problem Analysis communicative acts represented the highest average across all functional communicative acts, accounting for 50% of the coded communicative behaviors across all cases. The base rate occurrence of the Problem

Analysis category ranged from 25.33-53.05, compared to other categories such as Operating Procedures that occurred far less frequently (i.e., means ranged from 5.03-16.55) but distinguished among cases in terms of relative proportions. The Problem Analysis category in the PSF encompassed all communicative acts related to identifying the nature of the problem behavior, the extent and seriousness of the problem, and problems with present solutions to the problem behavior.

During the first problem solving meeting, the majority of the discussion is intentionally focused on these factors, as the primary goal in the first meeting is to clearly define the problem behavior, discuss potential factors contributing to the problem behavior, and begin to explore appropriate behavioral interventions to address the problem. Thus, perhaps this category was too broad to distinguish among team meetings that discussed some factors relating to the problem behaviors and problems with the current circumstances to varying degrees. For example, some teams may have spent time analyzing the nature of the problem behavior and the extent and seriousness of the behaviors, but failed to address potential causes and problems with current circumstances in the classroom. Whereas, another team may have spent some time discussing the nature of the problem behavior and discussed at length the environmental contingencies surrounding the problem behavior and how the current set of circumstances failed to adequately address the problem behavior. The outcome of these problem solving meetings would likely have a differential impact on the quality of the interventions, however the relative proportion of the Problem Analysis communicative acts failed to distinguish across these two types of discussions.

Regarding the Generating Alternative Solutions category, the difference in the relative proportion of this type of communication may not have been adequate to distinguish between effect size categories or case type. Across both effect size categories and case types, the range of means was relatively small (i.e., 4.4-10.77), and only one cell appeared significantly different from the others (e.g., CBC cases with small effect sizes). In case #11, a CBC case with a large effect size, the consultant listed several intervention strategies, provided details regarding implementation, and then the group proceeded to evaluate each of these suggestions. This case had the greatest average proportion of Generating Alternative Solutions communication (i.e., 17.7), compared to case #16, a CBC case with a small effect size, with the smallest average proportion of this type of communication (i.e., 2.7). In case #16, a CBC case with a small effect size, the team spent a great deal of time discussing transition options for the student (i.e., hall passes to see counselor, peer tutor) but less time discussing specific intervention strategies to be implemented within the current program. In addition, because the PSF coding system only addressed the first problem solving meeting in which teams engaged in problem identification and problem analysis at length, perhaps this analysis failed to capture the full extent of the generating and elaboration upon alternative solutions throughout the problem solving process.

Hirokawa (1982) also failed to find a relationship between attempts to generate alternative solutions and group effectiveness. Hirokawa (1982) suggested that perhaps generating alternative solutions was conductive to effective problem solving to a point, but that excessive production of ideas may be counterproductive to problem solving in

causing confusion among group members regarding alternatives. Orlitzky and Hirokawa (2001) found only slightly positive relationships between the generation of alternative solutions and group effectiveness in their meta-analytic study. Interestingly, these authors suggested that the time spent 'brainstorming decision alternatives seems to be the least important of all five functions examined' (in the meta-analysis) (p. 334), however the process of generating alternatives appears to work well within 'real world' bona-fide groups (e.g., Sutton & Hargadon, 1996, an ethnographic study of brainstorming in an organizational context). These observations illustrate an essential difference between the bona-fide groups examined in the current study and previous studies in the small group literature.

In the current study, the team process involved multiple consultees in the natural school setting working collaboratively with the target student being discussed, under the direction of an external consultant trained in the FBA and CBC consultation processes. Participants were involved in an ongoing problem solving process regarding students with whom they worked and shared responsibility for educating on a daily basis. Essentially, these 'bona-fide' groups shared vested interests in the problem solving outcomes and were likely motivated to consider several appropriate alternative solutions to the problem behaviors. In contrast, in the small group laboratory experiments involving college students in time-limited decision-making sessions (e.g. Hirokawa, 1982; 1988; Busse et al., 1985), group members typically had no past or future relationships or task interdependence (Sutton & Hargadon, 1996) and were thus less

likely to be motivated to spend a great deal of time considering and elaborating upon alternative solutions to the problem.

In the current study, having several appropriate alternatives within their repertoire of interventions was likely advantageous to the school-based staff that shared responsibility for implementing the interventions following the group meetings. The group process of generating and elaborating upon alternatives also likely assisted school-based staff in getting 'unstuck' in repetitive patterns of responding to and designing interventions for the target student, with new and innovative ideas generated collectively by the group (Sutton & Hargadon, 1996). The more detail and elaboration upon intervention ideas that occurred during these meetings, the more comprehensive the resulting intervention plan would have been, making successful and accurate implementation of the intervention more likely.

With a larger sample size in a controlled study of all problem solving meetings that occurred, perhaps there would be significant relationships between the discussion of several feasible interventions and elaborating upon these ideas with details regarding plan implementation and effective intervention outcomes. In contrast, for cases in which intervention ideas were briefly discussed but not elaborated upon, team members may not have a comprehensive plan to facilitate intervention implementation and monitoring. In addition, discussing the intervention plan in detail at the team meeting may increase the likelihood that teachers could implement the intervention successfully with support from the team members following the meeting.

Hypothesis 1d and 1e: Criteria for Evaluating Solutions and Evaluation

Criteria for Evaluating Solutions communicative acts include behaviors that function to help the group decide what a good solution or intervention would look like and establishing appropriate evaluative criteria. Evaluation communicative acts include those behaviors that help the group to evaluate the positive and negative qualities of each intervention choice. The prediction was that there would be a greater average proportion of Criteria for Evaluating Solutions and Evaluation communicative acts in cases with large effect sizes, exploring the effect of case type.

There were no significant differences between the average proportion of Criteria for Evaluating Alternatives by case type or effect size. In addition, no significant relationship was found between the Evaluation subcategory and effect size or case type. As in the two previous categories discussed, the base rate occurrence of these types of statements (e.g., Criteria for Evaluating) was relatively consistent across case types and effect size categories (i.e., M=6.65 in FBA cases with small effect sizes, M=6.25 in FBA cases with large effect sizes). Thus, the current analysis failed to distinguish between these cases.

In the current study, team members generally tended to focus on the feasibility and practicality of potential solutions utilizing current resources, as well as considering how the student would respond to the intervention, in considering the positive and negative qualities of intervention options. They did not tend to systematically establish criteria for evaluating solutions or evaluate both positive and negative qualities of the proposed intervention plan. If group members agreed upon a prospective plan, they

tended to proceed with generating additional ideas to build upon the plan. If they disagreed upon a proposed plan, the discussion was brief and then turned to other intervention ideas. The goal of these problem solving teams may have been more an evaluation of how the intervention subjectively fit within the classroom environment and the current resources available to implement the intervention than on a systematic evaluation of the positive and negative qualities of the plan.

For example, in case #11, a CBC case with a large average effect size, the team discussed setting up a point system with visual symbols representing items (i.e., ice cream sundae) that the student could earn for positive behaviors. Team members proceeded to build upon that idea, and evaluated the intervention in terms of how the student would respond, e.g., "Maybe you get points for the plate, you get points for the banana, whatever it is. And build an ice cream and when it's done, we can have it (the ice cream sundae)". Another participant responded, "Yeah, I can see that...It would be a good visual thing for him.". The discussion continued as participants built upon the ideas presented and evaluated ideas in relation to their perceived impact on the student. These evaluative statements were infrequent but assisted the group in reaching consensus on an intervention plan and moving forward in the intervention planning process.

This case may not have been distinguishable in terms of relative frequencies from a case in which intervention ideas were briefly discussed and evaluated but that the intervention ideas themselves may not have been as effective, as there was very little variability about the means (i.e., on average 2% or less). For example, in case #16, a CBC case with a small effect size, participants also continued to build upon an idea that was

presented and eventually concluded with a clear plan that was evaluated favorably. These evaluative statements were also infrequent, however in this case the intervention idea (i.e., point system for assignments completed) may not have been as powerful, or other factors could have influenced the effectiveness of the intervention (i.e., student motivation). The quality of the ideas and the appropriateness of the intervention proposals, in addition to the group's ability to reach consensus efficiently, may have had a stronger impact on problem solving and related treatment outcomes than the relative average proportions of establishing criteria and evaluative statements.

Behavioral Content Communication

The general research question regarding behavioral content communication was whether or not there would be significant differences between the average proportion of behavioral content communication in school-based problem solving teams by effect size and case type. Specifically, the predictions were that there would be a larger proportion of Behavior (i.e., verbalizations about what the student does), Behavior Setting (i.e., verbalizations referring to antecedent, consequent, and sequential conditions occurring contiguously with a client's behavior), and Behavioral (i.e., Behavior and Behavior Setting combined) communicative acts in cases with larger effect sizes. In addition, it was predicted that there would be a larger proportion of behavioral communication (i.e., Behavior and Behavior Setting subcategories and Behavioral category) in FBA cases with large effect sizes. Finally, it was predicted that there would be a larger proportion of Individual Characteristics communicative acts in cases with small effect sizes, and a larger proportion of this type of communication in CBC cases with small effect sizes.

Hypotheses 3a, 3b, and 3c: Behavior, Behavior Setting, and Behavioral

No significant difference was found in the Behavior category by case type or effect size. A significant difference was found in the proportion of Behavior Setting communicative acts by case type and effect size. The average proportion of Behavior Setting communication was larger in CBC cases. In addition, for FBA cases the average proportion of Behavior Setting communication was higher in cases with large effect sizes, but for CBC cases the average proportion of Behavior Setting communication was larger in cases with small effect sizes. Likewise, with Behavioral communicative acts (i.e. Behavior and Behavior Setting combined), for FBA cases a higher average proportion of Behavioral communication was associated with large effect sizes, whereas for CBC cases a higher average proportion of this type of communication was associated with small effect sizes.

In the school consultation literature, researchers have found that problem identification is the single most important predictor of consultation outcomes (Bergan & Tombari, 1975). Communication related to problem identification (i.e, behavior and behavior setting specification, observation specification and summarization) accounted for more than half the variation in the occurrence of plan implementation, which in turn accounted for 95% of the variation in problem solution (Bergan & Tombari, 1975). Busse (1996) also found that behavior specification communication was predictive of positive outcomes in consultee perceptions of effectiveness and child treatment. Thus, it appears that previous research has illustrated positive relationships between attempts to better understand variables that control problem behaviors and outcomes.

In the current study, a similar positive relationship was observed within the FBA cases, however the opposite relationship was observed within the CBC cases. The testing of the differences in Behavioral communication by case type and effect size was exploratory in nature. However, these results do illustrate an important distinction between the CBC and FBA cases regarding the importance of systematic problem analysis linked to intervention planning.

Within the FBA cases, the analysis of problem behaviors and the contexts within which they occurred were assessed and empirically validated prior to intervention planning and implementation. In these cases, an extensive problem analysis discussion (i.e., high proportion of Behavior and Behavior Setting communicative acts) was confirmed through this assessment and verification process, the results of which were directly linked to the intervention design. This systematic process likely had a positive impact on treatment outcomes. In contrast, within the CBC cases a systematic problem analysis and functional hypotheses were not directly linked to the chosen intervention strategies, possibly contributing to weaker treatment outcomes.

In the CBC cases, the assessment and controlled intervention to verify these phenomena was an essential missing link in the creation of quality interventions related to the functions of the problem behaviors. That is, in spite of an extensive discussion of problem behaviors and the contexts within which they occurred, this analysis did not inform subsequent intervention planning, but rather interventions were selected from a set of empirically-validated interventions by the team members. Particularly in the more complex cases, this lack of connection between the extensive problem analysis and

intervention selection may have contributed to weaker treatment outcomes. This may account for the inverse relationship observed between the proportion of Behavior Setting and Behavioral communicative acts and effect size between the CBC and FBA cases, as well as the greater proportion of Behavior Setting communicative acts in CBC cases with small effect sizes.

For example, in case #8, a CBC case with a small effect size, the school-based staff and the student's parent spent more than half of the 60 minute meeting discussing problem behaviors to focus upon (i.e., aggression, rushing through work), potential contributing factors to the problem behavior (i.e., anxiety, unstructured time with peers), as well as perceived functions of the behaviors (i.e., peer attention, social interaction, escape from difficult task). The team struggled to reach consensus both on definitions of problem behaviors and the contingencies surrounding the behaviors, and reported different behaviors and environmental circumstances between the home and school settings.

In response to the consultants' question, "What are your thoughts on what it is about the bus that's difficult for him? Is it the lining up part?", the parent responded with, "He has never made getting on the bus or being on the bus an issue. The issue always precedes the boarding of the bus, involving the line.", and attributed his aggressive behaviors to generalized anxiety about starting at a new school and the absence of one parent at home during the beginning of the school year. The parent disagreed with the problem definition terms, explaining, "Well, it sort of has a negative connotation to it, only if it can be replaced with...something that is more accurate than physically

aggressive." In contrast, the teacher perceived that the aggression was related to being moved from a preferred to less preferred activity, and the school psychologist attributed the problem to general anxiety in coping with transitions from home to school. Without establishing consensus on definitions or perceived functions of problem behaviors, the team moved toward selecting an intervention that might address the problem behavior (e.g., reinforcement of compliance with teacher directives to maintain 'personal space bubbles' and ignoring noncompliance). As the CBC model did not require further assessment or validation of these functional hypotheses, the interventions that were selected may or may not have adequately addressed the function of the problem behaviors and the environmental contingencies surrounding them.

In case #16, another CBC case with a small effect size, the consultant began the meeting by sharing observational data on the agreed upon target behavior and facilitating discussion of the problem behaviors observed by team members. Nearly 85% of the content during the first part of the discussion was Behavior and Behavior setting communication. For example, the teacher explained, "(student) will have difficulty looking forward and will either have a chapter book out, reading from it, he could be playing with his clay....so until someone intervenes or staff goes over and says something verbally to him, he will continue to do that type of thing (the problem behavior)....he will avoid the task, continue to play with toys, read a book, until someone comes over and intervenes and takes it away." The team continued to discuss potential contributing factors (e.g., boredom, student isn't able to do the task, nonstructured events predict the behavior). In this case, the team appeared to agree that the behaviors were

fairly predictable based on factors that had been identified, however the intervention that was then selected (e.g., point system for completing assignments) did not appear to be linked specifically to these identified factors. In both CBC cases, there was a greater proportion of Behavior and Behavior Setting communicative acts overall, however this extensive discussion was not validated through assessments or linked directly to the intervention implementation, which may have accounted for the negative relationship between the Behavioral communication and treatment effect sizes.

In contrast, in the FBA cases it appeared that when teams sufficiently analyzed the problem behaviors, empirically validated the functional hypotheses, and then selected interventions based on their assessments, better treatment outcomes were observed. For example, in case #17, an FBA case with a large effect size, the team discussed in detail the problem behaviors that were observed (i.e., truancy), what triggered the behavior (i.e., difficult academic work) and consequences (i.e., negative peer attention). The team discussed the testing of these hypotheses, and the discovery that the student's work refusal behaviors were likely triggered by difficult academic tasks and maintained by attention. This systematic analysis of contributing factors directly informed the intervention plan that was implemented in the classroom (i.e., positive attention for attempting tasks, encouraging the student to communicate with teachers proactively).

In another example, case #1, an FBA case with a large effect size, the team spent a great deal of time discussing various problem behaviors (e.g., off-task, talking, disruptive, disorganized) and exploring variables related to them. In reporting the results of the assessments, the consultant shared, "I was able to calculate, through observations,

we observed (student) for a week...and what we were able to do is take the assessment forms you guys filled out, and the number one antecedent was a difficult task. If you present a difficult task to (student), he would be most likely to avoid work and would talk out a lot. Not doing work, and being non-compliant, supported by escaping the task." The team was able to use this assessment information to design strategies both for preventing the problem behavior from occurring and teaching new skills that were directly linked to the results of the assessment.

These findings provide empirical support for the theory that incorporating the FBA process into behavioral support planning increases the prospect of a positive intervention outcome (Sugai, Horner & Sprague, 1996). Traditional team-based procedures to address problematic behavior are frequently ineffective because the treatment selection is limited, is not linked to specific assessment information, and is arbitrary in relation to behavioral function (Tilly, Reschly, & Grimes, 1998; Vollmer & Northup, 1996). In contrast, embedded in the FBA process is a direct link between assessment and intervention activities (Nelson et al., 1999; Storey, Lawry, Ashworth, Danko, & Strain, 1994). A comprehensive FBA promotes hypothesis-driven treatment and generates information that improves the effectiveness and efficiency of interventions (Nelson et al., 1999; Sugai, Horner & Sprague, 1999; Vollmer & Northup, 1996).

Thus, the systematic functional assessment that directly informs intervention planning may be the missing link in the CBC model accounting for the inverse relationship observed between Behavioral communication and effect size between the FBA and CBC cases. In the CBC case examples, behavioral communication was frequent

but was not part of the systematic process of considering and empirically validating the factors potentially influencing the behaviors in the settings in which they were observed. In addition, the CBC process did not require teams to reach consensus on the problem analysis phase, possibly further contributing to the weak link between understanding problem behaviors and designing interventions to address them. Whereas, the FBA process required that teams systematically evaluate variables related to the problem behavior, establish consensus on functional hypotheses, and design interventions in accordance with this analysis.

Individual Characteristics

There was no significant main effects or interactions between the average proportion of Individual Characteristics (i.e., verbalizations about individual attributes or internal states) by effect size or case type. There was a relatively low base rate occurrence of the Individual Characteristics subcategory. Overall, only 4.7% of the communicative acts were coded as Individual Characteristics content, compared to a range of 10-28% for other CAR codes, with one category, Summarization, equivalent at 4.8%. When discussants did emit Individual Characteristics communication, these acts did not appear to impede the group's problem solving outcomes as was predicted. Team members often hypothesized about the internal states of individual students within the context of discussing observable behaviors to contribute to the team's understanding of the potential causes of the problem behavior.

For example, in discussing possible causes for a student's disruptive talking out behavior, the consultant indicated that the student appeared capable of engaging in

disruptive behavior while still absorbing the content of the lesson, attributed to as 'part of the AD/HD(Attention-Deficit/Hyperactivity Disorder)'. This comment did not appear counterproductive to effective problem solving, but rather helped illustrate to the group how the behavior was being maintained. In the same case, the classroom therapist commented that 'these ADHD kids have difficulty remembering something they read', thus facilitating their understanding of the strengths and limitations of the target student.

In another case, the behavior specialist described, 'he's really concrete random...all that stuff is going to be a real strength...even the obsessive stuff', again describing how the student's strengths and idiosyncracies were important considerations in intervention planning. Thus, it appeared in many cases that discussing the internal states of the individual did not necessary impede problem solving discussion. Rather, participants appeared to be contributing that information in an effort to offer possible explanations for behavior and evaluate an intervention in light of individual characteristics that may not be responsive to environmental manipulation.

Directive Communication

The general research question regarding directive communication was whether or not there would be differences in the average proportion of directive communicative acts by case type (FBA or CBC) and effect size (small or large). Specifically, it was predicted that there would be a greater average proportion of Process Overt (i.e., verbalizations that address the problem solving process itself), Summarization (i.e., statements that review information), Elicitor (i.e., questions), and Directive communicative acts (i.e., combined category of all three) in cases with large effect sizes, exploring the effect of case type.

Specific predictions about the directive verbalizations were evaluated utilizing the CAR, and none of the hypotheses confirmed. However, the findings regarding the Process Overt and Directive communicative acts offer valuable insight into the relationships between communication and effect size between FBA and CBC cases.

Hypotheses 3a, 3b, 3c and 3d: Process Overt, Summarization, Elicitors, Directive

There was a significant difference in the average proportion of Process Overt communicative acts between FBA and CBC cases. The average proportion of Process Overt communicative acts was larger in FBA cases than in CBC cases. In addition, there was a significant difference in the average proportion of Process Overt communicative acts between small and large effect size cases. That is, the average proportion of Process Overt communication was higher in cases with small effect sizes. There were no significant differences observed in the proportion of Elicitor and Summarization communication by effect size or case type. However, there was a significant difference in the average proportion of all three types of directive communication combined (i.e., Process Overt, Summarization, and Elicitors) between small and large effect size cases. That is, the average proportion of Directive communication was larger for cases with small effect sizes than for cases with large effect sizes.

As cited previously, mixed results have emerged in the school-based consultation literature regarding the relationship between directive communication and problem solving outcomes. In some studies, consultant leadership behaviors were positively related to interview quality or child treatment outcomes (Busse, 1996; Gutkin, 1996; Sheridan, 1997), whereas other studies have found only marginal relationships (e.g.,

Erchul et al., 1999; Witt et al., 1991) or relationships in the opposite direction (Erchul & Chewning, 1990; Hughes & DeForest, 1993). Erchul and Chewning (1990) found a negative correlational relationship between 'dominant' communicative behaviors (i.e., requests for information when the answer is already supplied or 'fed' to the recipient of the question) and ratings of consultation effectiveness. In addition, Witt et al. (1991) found negative relationships between positive validation elicitors (i.e., questions that call for agreement) and consultation outcome scores.

Regarding the Process Overt statements, Gutkin (1996) found a positive relationship between content leadership (i.e., what was said) and ratings of interview effectiveness for consultants and consultees, as well as between process leadership (i.e., the verbal action conveyed by the message) and effectiveness for consultants only. Gutkin (1996) analyzed consultant and consultee leadership behaviors separately, and found that consultants used more Process Overt content communication than did consultees, and that only consultant process leadership (i.e., Summarization) was positively related to outcomes, as opposed to consultant content leadership (i.e., Process Overt). Although the initial predictions were based on previous findings (e.g., Gutkin, 1996) that directive communicative behaviors were associated with better outcomes, the opposite appears to be true in the cases in the current study.

Perhaps there is a different dynamic observed in the school-based problem solving teams facilitated by external consultants in the current study. Previous studies were primarily conducted on time-limited dyadic consultation sessions (i.e., consultant and consultee) in analogue conditions (i.e., graduate students with teachers in laboratory

settings) regarding real or imagined students (e.g., Busse et al., 1996). In the current study, cases were recruited through teacher and staff selection, and the consultees (i.e., teachers, parents, other school personnel) shared responsibility for the treatment outcomes for the students being discussed. The problem solving consultation service was offered to teachers working with the most difficult emotionally and behaviorally challenged students in their classrooms. These were the students for whom teachers had historically 'tried everything', and teachers were looking for directive assistance in dealing with these challenges. Although the problem solving models were essentially collaborative in nature, the consultants did maintain leadership roles in directing the process.

The greater proportion of Directive verbalizations in small effect size cases may have been symptomatic of a team struggling to effectively accomplish problem solving objectives, thereby requiring more direction and reminders about process objectives from the consultant. Similar to the results observed between the Operating Procedures subcategory and effect size, perhaps the school-based teams that produced fewer Process Overt communicative behaviors were better able to progress efficiently through the task objectives (i.e., identifying the problem behavior), thereby contributing to better treatment outcomes.

In general, between both FBA and CBC cases, the greater proportion of Process Overt communication and Directive communication may have been related to difficulties that the group experienced in accomplishing task objectives, or may have been due to the complexity of the particular case. Thus, the greater proportion of Process Overt

communication and other Directive behaviors combined may have been symptomatic of difficulties experienced by the team in accomplishing task objectives, or a breakdown in the problem solving process.

Particularly in the FBA cases, the more complex nature of the functional assessment and analysis may have further contributed to difficulties experienced by team members in accomplishing the task objectives. In these cases, more process discussion and clarification from consultants may have been required, thereby accounting for the greater proportion of Process Overt communication in FBA cases. Whereas, team meetings facilitated according to the CBC process may have been able to move more efficiently through the task objectives without explicit procedural reminders, thereby contributing to better treatment outcomes.

For example, in case #8, a CBC case with a small effect size, the consultant emitted Process Overt statements relatively frequently throughout the meeting. In relation to other cases, the parent and teacher (a general education kindergarten teacher) may have been less familiar with the consultation process than the consultees (i.e., special education self-contained teacher) in other cases, and they appeared to have difficulty in establishing consensus on the problem behavior definitions and environmental factors related to the problem behaviors. Thus, the consultant was explicit in describing the steps involved in the process, summarizing information discussed throughout the meeting, and asking questions for clarification from both the teacher and parent. For example, in explaining the first step of defining the problem behavior, the consultant said, "I want to go through the description of the problem behaviors in the report. I have the behavior

description. It is written in terms of a discrepancy between what's observed and what's expected of the student, so that when we come up with a goal, we know what we are shooting for, what we're expecting him to do that he is not able to demonstrate right now."

The team appeared to struggle to establish consensus on the problem behavior definitions, requiring frequent questions for clarification and summarizing of information from the consultant throughout the process. For example, after reading the problem behavior description from the draft of the report, the consultant asked, "Does that sound accurate to you? Is there anything that you would add or delete?" In response, the parent described the student's behavior in more detail, e.g., "I think he tends to have sort of a perfectionist type attitude...he gets so frustrated with that (writing assignments)". In describing the second problem behavior (i.e., physical defensiveness) the consultant asked, "So it's more that he just responds physically and then does he sort of stay in the 'huff', or what does he do after that?" The discussion continued in this fashion, and the consultant emitted frequent directive behaviors to summarize, clarify, and assist the team in moving forward in the problem solving process.

In addition, in case #22, an FBA case with a small effect size, the nature of the problem behavior and the student's history were complex. The team spent a great deal of time attempting to define the problem behaviors and behavioral goals to focus upon, and the complexity of this case warranted frequent summarization and direction in the problem solving process from the consultant. For example, the team discussed that the student had difficulty starting work independently, was easily frustrated by academic

tasks and refused to ask for help, was resistant to reminders or reprimands from adults, and likely suffered from mental health issues (i.e., depression, Post-traumatic stress disorder) as well as auditory processing delays (i.e., difficulty processing spoken language).

After an extensive discussion, the consultant summarized the information shared by the participants and attempted to direct the team to establish behavioral goals: "So I think that that is an important issue to keep in mind as we keep going (the medical diagnoses). It seems a goal for the meeting today, in sort of planning what to do, it seems like we would all like to help (student) complete more of his work with less assistance. So, complete what he is capable of doing, and perhaps ask for help when he needs it, and show a little more independence. Does anybody have anything else to add, or what do you think?" The group continued to discuss other potential issues underlying the problem behaviors, (i.e., difficulty communicating with adults, learned helplessness). The consultant later stated, "That's sort of an ongoing project for the team (figuring out what the student is capable of doing independently), and it has to do with communications between everyone. We won't figure it out in the next half hour, but at least we can clarify kind of a challenge. So any other comments about any strengths or challenges that he has?" To introduce the hypothesis statements and the competing pathways model, the consultant explained, "In this next section, a functional assessment is a process of trying to define the contextual variables that relate to problems. So I'm gonna say it in a couple of different ways. One is to determine where problems occur, and where they don't occur. What conditions under which it occurs, and what seems to occur afterwards." The

consultant then proceeded to describe the competing pathways and hypotheses proposed for the student, and continued to explain the process and task requirements along the way.

The sheer complexity of this case warranted more directive communicative behaviors by the consultant as the team attempted to accomplish the problem solving tasks of defining and analyzing the problem behavior and discussing possible solutions. Frequent summarization of information, explanations of the functional assessment process, and asking questions for clarification from the team were required in order to move forward in the problem solving process. In both examples of cases with small effect sizes, the greater proportion of Process Overt, and the Directive behaviors combined, appeared to be symptomatic of difficulties both in the complexity of the problem solving process and the specifics of the problem behaviors the teams were attempting to address.

The FBA cases with small effect sizes in particular seemed to present more challenging and complex problem solving tasks for the respective teams, possibly accounting for the greater proportion of Process Overt communicative acts in FBA cases. For example, in case #10, an FBA case with a small effect size, Process Overt statements occurred frequently throughout the meeting, as discussed in the previous section on Operating Procedures. The complexity of the problem solving process required that the consultant be more directive in facilitating the discussion, redirecting, and attempting to help the group progress systematically throughout the problem solving process.

In contrast, in case #11, a CBC case with a large effect size, the average proportion of Process Overt communication was relatively low (i.e., 5.3%). The consultant briefly described the purpose of the meeting (i.e., to review behavioral

observations and discuss intervention strategies), and proceeded to direct the discussion regarding the problem behavior definitions and proposed interventions with few reminders about the systematic problem solving process. The problem analysis phase was relatively brief, as the teachers and consultant appeared to have an adequate understanding of the problem behaviors (e.g., talking, provoking). The group was able to establish consensus regarding problem behaviors to focus on without difficulty, were receptive to the consultant's intervention recommendations, and constructed a solid intervention strategy collaboratively.

For example, in discussing a group contingency plan that required cooperation among students to earn points, the consultant explained, "Cooperation can be put on …what that equals is that no matter what, it's not contingent just on one person, so then it becomes, even if somebody sabotages and is going totally off...there's still enough points out there when everyone else is being nice." The teacher responded, "Yeah. I like that one. I like that idea." The team continued to evaluate several different strategies presented by the consultant, and was able to establish consensus on the chosen strategies without difficulty. The consultant did summarize information in this case, but these brief summaries appeared to facilitate the discussion and very few reminders about the problem solving process were required thereafter. The intervention strategies were fairly straightforward and relevant to the problem behaviors. In general, the resolution of this case appeared somewhat less complex than the problem solving tasks required in other cases (i.e., case #10), which likely accounted for the smaller proportion of Process Overt statements required of the consultant.

There was no significant difference in the proportion of Summarization statements alone by case type and effect size. Within the context of group discussions, the summarization statements did appear to serve a facilitative function in refocusing and structuring the group within the context of the discussion. For example, after extensive discussion about how to facilitate a self-monitoring intervention, the consultant said, "So it sounds like starting with something in which he's a little more successful at the beginning would be good for him to see some progress too". In another case, after input from several participants describing problem behaviors, the consultant summarized, "so what I am hearing here is talk-outs....our goal is to decrease talk-outs". Although these brief statements did not occur frequently, they effectively summarized the previous discussion and allowed the group to move forward in the intervention planning. Nonetheless, the power to detect statistical differences in this category was too low due to sample size and case variability (i.e., range of .99 to 20.7 percent across cases).

Regarding Elicitors, there was no significant difference in the proportion of Elicitor communication by case type or effect size. In these cases, both consultants and consultees appeared to ask questions for clarification or to gather information. The Elicitors did not seem to serve so much as a directive function, but rather as an information gathering tool for both consultants and consultees.

Summary of Findings and Clinical Applications

Across all the functional communication categories, the only significant difference by case type and effect size was in the average proportion of Operating Procedures communicative acts. A higher average proportion of Operating Procedures

communicative acts was observed in cases with small effect sizes and in FBA cases overall. In general, it appeared that problem solving teams with a higher average proportion of Operating Procedures communication required more redirection or reminders regarding how to accomplish the problem solving tasks, and had more difficulty reaching effective problem solving outcomes, thus contributing to weak treatment outcomes. Particularly in the more complex FBA cases, teams may have experienced more difficulty accomplishing task objectives, thereby requiring more procedural redirection and contributing to small effect size outcomes.

Regarding the Behavioral communication, the proportion of Behavior Setting communicative acts were greater in CBC cases across both effect size categories. Within CBC cases, a greater proportion of Behavior Setting communication was associated with small effect sizes, whereas the opposite was observed in FBA cases (i.e., greater Behavior Setting in large effect size cases). Likewise, when Behavior and Behavior Setting communicative acts were combined in the Behavioral category, a greater proportion of Behavioral communication was associated with large effect sizes within the FBA cases only. Between the FBA and CBC cases, it appeared that the systematic functional assessment process required in the FBA model accounted for the greater proportion of Behavioral communication associated with large effect sizes, whereas in CBC cases without the systematic assessment linked to the intervention the inverse of this relationship was observed.

Regarding the Directive communication, no significant differences were observed in the average proportion of Summarization or Elicitors by case type and effect size,

however when these subcategories were combined with Process Overt communication there was a greater average proportion of Directive communicative acts in cases with small effect sizes and in FBA cases overall. Thus, it appears that in cases with small effect sizes, the greater proportion of Process Overt, and the Directive behaviors combined, appeared to be symptomatic of difficulties both in the complexity of the problem solving process and the specifics of the problem behaviors the teams were attempting to address. The FBA cases with small effect sizes in particular seemed to present more challenging and complex problem solving tasks for the respective teams.

Across all the types of communicative behaviors, a systematic problem analysis (i.e., greater proportion of Behavior and Behavior Setting communicative acts) in FBA cases likely contributed to better treatment outcomes. The FBA process required that teams systematically evaluate variables related to the problem behavior, establish consensus on functional hypotheses, and design interventions in accordance with this analysis. Whereas, in the CBC cases the problem analysis was not part of the systematic process of considering and empirically validating the factors potentially influencing the behaviors in the settings in which they were observed. In spite of an extensive discussion of problem behaviors and the contexts within which they occurred, this analysis did not directly inform subsequent intervention planning. Particularly in the more complex CBC cases, this lack of connection between the extensive problem analysis and intervention selection may have contributed to weaker treatment outcomes.

Problem solving teams with higher proportions of Directive consultant behaviors (i.e., Operating Procedures, Process Overt, Directive) may have required more redirection

or reminders regarding how to accomplish the task at hand, and may have had more difficulty reaching effective problem solving outcomes, thus contributing to weaker treatment outcomes. Specifically, teams with the more complex task of accomplishing task objectives within the FBA model may have experienced more difficulty than those utilizing the CBC model. In contrast, within the CBC cases, the less complex process of considering problem behaviors and why they occurred without an empirical validation of possible functions of the behaviors was associated with small effect sizes, and less process redirection was observed overall.

These findings provide support for the theory that incorporating the FBA process into behavioral support planning can increase the prospect of a positive intervention outcome (Sugai, Horner, & Sprague, 1996). In spite of the additional time, resources, and training required to conduct the functional assessment prior to intervention planning in natural school settings, school consultation practitioners should considering incorporating a comprehensive FBA in behavioral support planning to improve the effectiveness of intervention outcomes. If school-based teams take the time to analyze the problem behaviors from a functional perspective, the results of this analysis can directly inform individualized behavior support plans and may have a positive impact on intervention outcomes.

Consultant leadership can also play an important role in problem solving and treatment outcomes. In the current study, it appeared that directive communication (i.e., making explicit statements about the problem solving process) at the beginning of the meetings effectively set the stage for the problem solving discussion that followed.

However, an excessive amount of directive communication appeared to be symptomatic of problems experienced by the group in accomplishing task objectives. Particularly in adherence to the more complex FBA model, school-based consultants could set an agenda at the beginning of the problem solving meeting and ensure that the participants understand the importance of sequentially accomplishing the task objectives (i.e., analyzing the problem behavior prior to discussing intervention options). Brief reminders about the problem solving stages throughout the process could effectively facilitate the team discussion. However, if a team appears to be experiencing difficulty, the consultant may need to assess the team's level of understanding regarding the essential components of the problem solving model and whether or not the problem being discussed can adequately be addressed with the information that has been gathered prior to the meeting.

Directions for Future Research

Functional Communication

The PSF was derived from previous studies in which the problem solving or predecisional functions were coded in single, time-limited meetings with a limited number of participants in analog settings. However, the meetings in this study often involved different participants across several meetings of varying lengths for each case. The PSF was designed as a tool for assessing functional communicative acts during the initial stages of the problem solving process in which team members collectively analyzed and made decisions about potential solutions to the problem. However, the PSF coding system did not lend itself to analyzing subsequent stages of the problem solving process such as analyzing intervention effects and discussing modifications and

generalization or maintenance strategies, which are essential components of both the FBA and CBC models. Thus, only the first transcript of each case was coded using the PSF, and the data in subsequent meetings could not be analyzed using this system.

Nonetheless, the functional approach to understanding how group communication impacts the problem solving process and related outcomes is relevant to school-based consultation. The PSF is a comprehensive direct measure of functional communicative behaviors that are relevant to the goals of school-based problem solving teams. The PSF message categories essentially encompass many of the CAR categories that are relevant to the problem solving process, but are broader in their definitions and can be related directly to the accomplishment of problem solving task objectives. For example, the PSF subcategory Operating Procedures encompasses the CAR process overt subcategory. Likewise, the PSF Summarization and Question behaviors include the CAR Summarization and Elicitor process codes.

Researchers have suggested that it is not necessarily the time that groups spend addressing the functions that predicts quality decision making, but rather whether or not these types of communicative behaviors bring the group closer to satisfying important requirements of effective decision making, such as assessing the problematic situation and acceptable courses of action (Gouran & Hirokawa, 1983; Hirokawa, 1988). Hirokawa (1988) illustrated that groups arrived at higher quality decisions when the group was able to accomplish certain critical task requirements. In contrast, the group's inability to perform these decisional functions had a negative impact on the decision quality. Future research in school-based consultation should examine the direct link between satisfying

the essential components of the FBA and CBC problem solving models and the effectiveness of problem solving outcomes, mediated by the types of functional communication that occur among team members.

Hirokawa (1980b) demonstrated that effective and ineffective decision-making groups were not distinguishable based on the types of communicative behaviors produced within the discussion, but rather the sequencing of those behaviors over time (i.e., the interaction processes). The presence of directive, behavioral content, and functional communication are relevant only insofar as these types of communicative behaviors are presumed to have an impact on subsequent problem solving phases and eventually child treatment outcomes (i.e., contributing to problem behavior identification and analysis). However, what happens in the problem solving process after these types of communication occur has not been explored with these act-by-act coding schemes.

In future research, the PSF system could be used in conjunction with global measures (i.e., ratings of the quality of communicative messages) to provide insight into the relationship between group communication and problem solving outcomes. For example, trained judges could observe and rate the extent to which groups satisfy problem solving objectives throughout with a rating scale designed specifically to assess this type of school-based problem solving process. Nonetheless, the PSF, like the CAR, only measures the frequency of communicative acts in isolation does not permit an analysis of what happens before and after these types of communicative acts are emitted in the problem solving meetings, and how this relates to outcomes.

Analyzing coded communicative behaviors sequentially would facilitate an exploration of what happens after certain types of communicative acts occur and how this communication relates directly to subsequent stages in the problem solving process (i.e., generating alternative solutions from problem analysis discussion). Lag sequential analysis has been used to identify the nature of different interaction patterns in both consultation and small group research (e.g., Benes et al., 1995; Hirokawa, 1983). Coded behaviors are treated as target behaviors, and the transitional probabilities for other behaviors occurring subsequent to the target behavior are calculated to assess the patterns of interaction that emerge over time (Benes et al., 1995; Hirokawa, 1983). Benes et al. (1995) liken this type of analysis to 'moving pictures' as compared to 'static still photographs' from coding systems that analyze only summative information (i.e., percentages of statements) (p. 694). In the future, a study analyzing coded behaviors sequentially in conjunction with global ratings of the extent to which communicative behaviors contribute to the accomplishment of specific task objectives could contribute further to our understanding of how these communication processes impact problem solving and related outcomes.

Regarding the functional communicative acts measured, future research should investigate the extent to which extensive problem analysis either helps or hinders the problem solving process in naturally occurring problem solving teams. The Problem Analysis category could be subdivided into (1) communicative acts related to identifying the nature, extent, and seriousness of the problem behavior and (2) problems with current

solutions to the problem behavior, to further distinguish between group discussions considering the problem behaviors and environmental contingencies surrounding them.

Future investigations should also focus on the impact that generating alternative solutions have on the quality of the resulting intervention plans, plan implementation, and subsequent treatment outcomes. The Evaluation subcategory should be divided into two distinct categories, evaluating the positive qualities of alternative choices and evaluating the negative qualities of alternatives, to further investigate the true nature of this relationship. This evaluation process should be measured in relation to the group's process for reaching consensus on the resulting intervention plan. Further distinctions should be made between the last two subcategories, Establishing Evaluative Criteria and Evaluation, as there may have been overlap in the coding of the data with these subcategories.

In the current study, the small number of cases and lack of power contributed to the failure to yield significant findings across several communication categories. For example, in the Generating Alternative Solutions subcategory the observed power between the means tested, sample size, and the standard deviation ranged from .12-.25, and in the Criteria for Evaluating Solutions and the Evaluation subcategories the observed power ranged from .05-.12. In a controlled study with a larger sample size, the PSF coding system could be used to sequentially code the communicative behaviors. Including global ratings of the accomplishment of task objectives could contribute further to our understanding of the relationship between functional communication and child treatment outcomes.

Behavioral Content Communication

The current study was unique to other consultation studies in that the cases were some of the most difficult, chronically behaviorally challenged students that had been resistant to prior interventions in the school districts that participated. This study required that school-based teams engaged in systematic problem solving in adherence to the FBA and CBC models while remaining flexible in their approaches in consideration of the unique learning needs of these students. The CAR was designed specifically for analyzing dyadic consultation within the Behavioral Consultation model (Bergan & Tombari, 1975), and has been utilized primarily in analyzing time-limited, structured consultation sessions in laboratory settings with real or imagined students (e.g., Busse et al.,1999; Gutkin, 1996). As school psychology practitioners often work within team-based models similar to those in the current study, analyzing the consultation process with this system does not contribute sufficiently to our understanding of consultation practice in natural school settings.

Previous studies utilizing the CAR coding system have produced some findings of interest regarding the presence or absence of communication factors that may be related to treatment outcomes in school-based problem solving teams (i.e., directive behaviors, e.g., Sheridan, 1997). However, results across studies have been inconsistent (e.g., Busse, 1996; Erchul & Chewning, 1990) and have failed to capture the dynamic, interactive nature of communication that occurs within these problem solving groups. A large number of different communication-outcome relationships have been explored, some with very low frequency categories, which makes replication of significant findings

difficult (Hughes et al., 1997). A majority of studies have measured communicative behaviors only in relation to perceptions of consultation effectiveness (e.g., Gutkin, 1996), and many have found only marginal relationships between verbal behaviors and outcomes (e.g., Hughes et al., 1997; Witt et al., 1991). Other large-scale studies of consultation dyads have found only minimal relationships between the frequencies of individual CAR categories and actual treatment outcomes (e.g., Busse, 1996).

In over thirty years of research utilizing the CAR in consultation research, there is still relatively little empirical data to guide school-based consultants on what should be said and done in consultation (Gutkin & Nemeth, 1997; Witt, 1990). In order to contribute to our understanding of how practitioners can be most effective in their leadership roles within school-based teams, perhaps the time has come to move away from the reliance on this static method of analysis to incorporate more comprehensive, dynamic analyses relevant to actual school-based models of practice.

In future research, perhaps the relationship between behavioral content communication and outcomes can be further examined at the initial stages of the problem solving process in which this type of communication occurs most often. Utilizing the CAR in a controlled study analyzing coded behaviors sequentially could inform an analysis of the extent to which the communication that occurred during initial problem solving phases either helped or hindered the team's ability to accomplish task objectives. The presence of behavioral content communication may only be predictive of treatment outcomes insofar as the discussants' use of these communicative acts helps the group establish clear definitions of the problem behaviors and the contexts within which they

occurred. Direct measures of the communication that occurs sequentially during this process and how this relates to the accomplishment of task objectives and treatment outcomes would provide a better understanding of the clinical implications of communication in problem solving teams. In conjunction with global ratings of the extent to which communicative behaviors contribute to the accomplishment of specific task objectives, this sequential analysis could contribute further to our understanding of how these communication processes impact problem solving and related outcomes.

Directive Communication

Research in school-based consultation can be informed by the group communication literature regarding group leadership and the impact on problem solving outcomes. Barge (1989) summarized the Group Leadership Influence Model (GLI) as the perspective that leadership is an active and directive 'social influence process' through which limited members control the group's activities (p. 237). In contrast, in the Leaderless Group Discussion (LGD) Model, leadership is a form of mediation engaged in collectively by all group members to facilitate goal achievement. In testing the assumptions of these two competing models, Barge (1989) illustrated that collective group leadership behavior (i.e., the LGD model) was a better discriminator of group productivity than individual leadership behaviors.

These findings are in contrast to research in school-based consultation. Compared to dyadic consultation, Sheridan (1997) suggested that the added complexity of a second consultee in Conjoint Behavioral Consultation warranted more deliberate and active attempts by the consultant to guide the consultation process. Other researchers have

suggested that consultants and consultees both play positive leadership roles in relationship to the content being discussed, but that consultants made unique contributions in guiding the process (Gutkin, 1996; Zins & Erchul, 1995). These models assume that the consultants or leaders contribute uniquely to the problem solving process, whereas Barge's (1989) study emphasizes collective leadership behavior across all discussants.

The nature of these relationships should be further explored within the context of school-based problem solving teams. Further research is needed to assess both the frequency and the quality of directive communication in relation to group outcomes. Global ratings of leadership emergence (i.e., which participants emerge as leaders within the group) and leadership behaviors, as well as direct measures of directive or leadership communicative behaviors, could be utilized to examine the unique contributions of both consultants and consultees in the problem solving process. With a larger sample size in a controlled study, manipulations and measures of leadership could offer valuable insight into these relationships in school-based problem solving models.

Study limitations

There are several limitations that need to be noted in this study. In terms of the time period for data collection, the research and school-based teams processed cases over an extended period of time, ranging from two to six months depending on the nature of the cases, for a total of two consecutive school years to collect data for all the cases. Experimental control over extraneous factors such as student absences, subject attrition, parent participation, and treatment fidelity across time were compromised in some cases.

The study included measures of process integrity and treatment integrity to bolster investigations of treatment efficacy. However, attempts to facilitate and measure both process and treatment integrity did not always ensure that teams could adhere to the models and the treatment plans as intended. For example, in one case the student was hospitalized for a psychiatric evaluation after only two days of intervention implementation. In another case, the teachers agreed upon intervention ideas discussed during the meetings, however failed to follow through with plans for implementation in a timely manner following the meetings, and this case was eliminated from the study.

Research assistants provided feedback to school-based teams throughout the process to facilitate adherence to the intervention plans to the maximum extent possible. Nonetheless, several cases were eliminated from the analysis because one or more of the essential meetings were not audiotaped, and other cases were eliminated because the teams did not reach the intervention phase by the end of the school year. This elimination of cases had a negative impact on the power to detect statistically significant differences between cases.

As noted by several researchers in the field, multi-component interventions are often administered as packaged treatments, including academic interventions (i.e., reducing task length and incorporating experiential learning) and other behavioral supports. The individual contributions of each intervention element are often unknown (e.g., Dunlap, White, Vera, Wilson, & Panacek, 1996; Umbreit, 1995). In some cases, intervention plans resulting from the FBA and CBC processes included multiple academic and/or behavioral components, thereby impeding analysis of individual

intervention effects. In the FBA model, the Competing Pathways model is a multi-component treatment, in that teachers and school personnel devise a plan to both decrease the occurrence of the problem behavior and teach a positive alternative behavior.

The research assistants, as opposed to the school psychologist or some other school personnel, facilitated the FBA and CBC problem solving discussions. Thus, these consultation sessions may not be representative of the interactive nature of problem solving discussions in school-based teams in natural school settings. For example, traditional Behavioral Consultation was initially designed to occur across three sessions (problem identification and problem analysis in the first meeting, program evaluation in the second meeting, and a third meeting for follow-up). In school settings these distinctions among phases are often not so clear. In natural school settings, issues such as scheduling, time constraints, and inadequate training of school personnel may induce teams to proceed through several phases of the model in an unspecified order during one single meeting.

The research assistants received several hours of training and ongoing supervision in adherence to both the FBA and CBC models. The RA was responsible for ensuring that team meetings focused specifically on accomplishing these task objectives to the maximum extent possible, and maintained a directive leadership position throughout the process. In terms of generalizability, the differences in communicative acts across cases in the current study may have been minimal compared to differences that naturally occur in school settings where adherence to specific consultation models is far less controlled.

As consultants not employed by the school district, the RAs generally maintained directive roles in facilitating the meetings and guiding the school-based teams through the problem solving processes in efforts to adhere to the research models. Whereas, school-based consultants facilitating meetings among team members with whom they maintain working relationships may be less directive, and more eclectic in terms of their approaches to consultation, drawing from several different models when facilitating team meetings. In addition, the analysis of only the audiotaped team meetings failed to capture the impact of the communication and problem solving that occurred outside the formal team discussions. These factors may have introduced sources of variance unaccounted for by the frequency counts and measured treatment effects.

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Appendix A

Problem Solving Functions (PSF) Coding System

Case # _____ Meeting #:_____ Date: _____

Source: CN=Consultant, CT=Consultee-Teacher (1,2,~), CP=Consultee-Parent, CS=Consultee-Student, CO=Consultee-Other (principal, teaching assistant)
Code: OP=Establishing operating procedures, PA=Problem analysis, CS=Criteria for evaluating alternative solutions, GS=Generating alternative solutions, EV=Evaluating positive and negative qualities of alternative solutions, OT=Other
Purpose: 1. F=Fact, 2. O=Opinion, 3. AG= agreement , 4. DS= disagreement, 5. SU=Summary/synthesis, 6. QU=Question

	Source				Function							Purpose					
	CN	CT	CP	CO	OP	PA	CS	GS	EV	OT	IF	IO	RF	RO	DF	DO	
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
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Appendix B

Brief Overview of Problem Solving Functions

The five Problem Solving Functions are the general task-achievement functions of the communicative utterances (e.g., establishing operating procedures). The other category includes any utterance which does not fit into one of the five specified categories. The specific purpose of the utterance is identified by the six behavioral categories. This more specific function relates to the type of verbal action conveyed by the message (e.g., Summarize), which conveys a broader task-achievement function within the discussion. Each thought unit is coded for the following: source (indicates the person speaking), problem solving function (indicates the general task-achievement function), purpose of the utterance (indicates the sixteen behavioral categories).

Source: CT=Consultant, CE-T=Consultee-Teacher (1,2,~), CE-P=Consultee-Parent, CE-S=Consultee-Student, CE-O=Consultee-Other (principal, teaching assistant)

Problem Solving Functions:

1. OP (Establishment of a set of Operating Procedures). The discussants decide what needs to be done to solve the problem, and how they should go about doing it. Behaviors which function to establish Operating Procedures: Any statement or question which helps the group:
    a. Decide on actions, what needs to be accomplished during the team meeting
    Example: "Okay, our goal for today is to come up with a set of functional hypotheses that everyone agrees on"
    b. Discuss how they should go about approaching/solving the task or problem Example: "We should probably give everyone a chance to say what they think and then maybe we can vote"
    c. Discuss how they should structure and organize the discussion to meet their goals and objectives
    Example: " Mrs. X, why don't you start with telling us what your concerns are for your son and then we'll hear from his teacher"

2. PA (Problem Analysis) Given the information available to the discussants, they need to arrive at a "correct" understanding of the:
    Behaviors which function to analyze the problem: Any statement or question which helps the group to identify:
    a. The nature of the problem, symptoms or signs of the problem
    Example: "He is getting out of his desk all the time without asking permission"
    b. The extent and seriousness of the problem
    Example: "Do you think his behavior is impacting his ability to learn?"

c. Problems with the present solution or set of circumstances
Example: "The whole-class point system doesn't seem to interest him"
d. Possible causes(s) of the problem.
Example: "I agree, he may be acting out because he doesn't know how to do the work"

3. GAS (Generation of Alternative Solutions): The group must generate a number of appropriate alternative solutions to solving the problem, considering as many feasible alternatives as possible before attempting to decide on a final decision or solution.

Behaviors which function to generate Alternative Solutions: Any statement or question which helps the group identify an alternative solution to solving the problem:

Examples: "Do you think if he had a quiet space to work and you checked on him at specified intervals, like every 5 minutes, that might help him to concentrate?"
"We'd probably have to keep some kind of log of each time he can work for five minutes without getting out of his desk"

4 . CEAS (Criteria for Evaluating Alternative Solutions) (3) - Appropriate understanding of the requirements for an acceptable solution, how the intervention choice will be evaluated

Behaviors which function to establish evaluation criteria: Any statement or question which helps the group decide:
a. What a "good" solution or intervention would look like, qualities or characteristics of a good solution
Example: "It would have to be something that he's interested in or he won't go for it"
b. Appropriate evaluative criteria- how team will know it's working, discussing the specific aspects of the problem that the solution would remedy
Example: "It that would keep him from feeling like he needs to scream at other kids to get attention then that would be great"
c. Discussing tasks of team members – what things will need to be done to implement the intervention to alleviate the problem
Example: "Would you be willing to be the one that checks with him every 5 minutes?"

5. EVAL (Evaluation of positive and negative qualities of each solution or intervention choice):

The group must carefully evaluate all alternative solutions, making certain that all important implications and consequences of accepting such a solution have been considered, and the one finally selected meets the criteria for a "good" solution. The

group's evaluation of the positive and negative qualities of available alternatives in terms of acknowledged criteria relates to the appropriateness of its choices.

Behaviors which function to evaluate alternative solutions: Any statement or question which helps the group to:

a. Discuss positive aspects or desirability of the intervention plan-evaluate, weigh or assess the desirability of a given alternative
Example: "It sounds like you think giving her the time to calm down in a quiet space would help to alleviate her anger"

b. Discuss potential negative consequences of the intervention plan, or any statement or question which helps the group identify implications and consequences of accepting or not accepting a particular alternative solution
Example: "I don't think he's going to like having to check in with you when he comes to school"

B. Purpose of the utterance:

1. Fact
2. Opinion
3. Agree
4. Disagree
5. Summary
6. Question

(Gouran, et al., 1993; Hirokawa, 1980; 1983; 1985; 1988).

Appendix C
Consultation Analysis Record Form (CAR)

CONSULTANT _____ CASE NUMBER _____

CONSULTEE _____ INTERVIEW TYPE _____

PAGE _____

CONSULTATION-ANALYSIS RECORD

	Message Source		Message Content							Message Process							Message Control	
P	Consultee	Consultant	Background Environment	Behavior Setting	Behavior	Individual Characteristics	Observation	Plan	Other	Negative Evaluation	Positive Evaluation	Inference	Specification	Summarization	Negative Validation	Positive Validation	Elicitor	Emitter
1																		
2																		
3																		
4																		
5																		
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Appendix D

Brief Overview of the Consultation Analysis Record (CAR) Codes

Source Codes: Consultant-Consultant is talking, Consultee-Consultee is talking
Source codes on coding sheet: CT= Consultant, T=Teacher, P=Parent, O=Other

Control Codes
Elicitor – "an utterance that calls for a response in particular content subcategory and a particular process subcategory" (p. 60)
Emitter – "a verbalization that provides content and process information to a listener but does not call for a specific response on the part of the listener" (p. 62).

Content Codes
Background Environment - "verbalizations concerning 'remote' environmental conditions related to behavior" (p. 47)-"remote" - (in time or location or both) events that occurred earlier a child's life or current home conditions that could influence the child's actions at school
(i.e., "tell me about the conditions surrounding the child's birth", "How many brothers and sisters does he have?", "When Carol gets home after school no-one is home")
Behavior Setting – "verbalizations referring to antecedent (*factors that signal the occurrence of the behavior, happen before*), consequent (*factors that occur after the behavior*), and sequential conditions (*sequential variables that could affect retention or response rate*) occurring contiguously with a client's behavior" (p. 48)-factors that are in the immediate environment in which the behavior occurs.
(i.e., "what happened before Ted hit Bob?", "What do you usually do to teach addition?", "The classroom is generally hot when Ted gets sleepy").
Behavior – statements addressing "what the client does" (p. 50)- covert processes (thinking/feeling) and overt actions (talking/walking). Also included are tasks currently performed by the client, the strength of the behavior (e.g., graphs or anecdotal reports of the behavior), and behavioral goals.
(i.e., "what does she do to demonstrate her anger?", "Let's look at the data on his hitting behavior", "Let's establish a goal for her", "I want to focus on his math skills".
Individual Characteristics – "verbalizations about individual attributes of the client" (p. 51) (e.g. gender, personality, physical characteristics, age, intellectual characteristics)
(i.e., "How old is she?", "He has a hot temper", "I think it's because he's immature", "she is ready to read now").
Observation – verbalizations referring to "observations and recording activities such as those involved in gathering data on client behavior" (p. 52)-
(i.e., "How would it be most convenient for you to observe him?", "I will record the data for the next 2 weeks").
Plan – statements describing "one or more plans to solve the problem or problems presented by the consultee" (p. 52)- procedures suggested to change client behaviors,

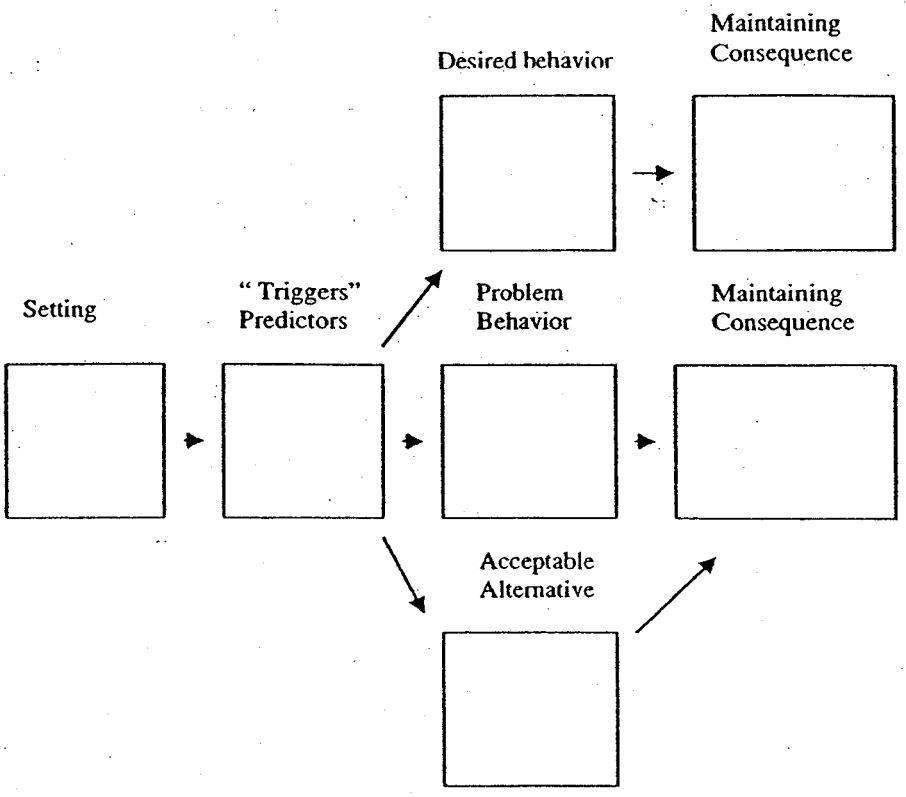
maintain desired behaviors, or generate behaviors (can be general strategies or specific ideas)
(i.e., "We might want to try peer modeling", "What are some ways we can reinforce the appropriate behavior?", "I don't like the idea of tangible rewards").

*Process Overt – verbalizations that address the problem solving process itself rather than aspects of the presenting problem (This code was added to the CAR by Gutkin, 1996).
Other – "a catch-all category to cover subjects not explicitly delineated in the other content subcategories" (p. 53)

Process Codes:

Specification – verbalizations that "provide or elicit descriptive or definitional information regarding the various content subcategories under discussion" (p. 54)
(i.e., "let's look at the data", "Tell me about his home life", "Did he hit her?").
Positive Evaluation – statements indicating positive "attitudes or emotional reactions of a speaker toward the things that he or she is discussing" (p. 54)
-for both evaluation subcategories - utterances that require a value judgment made in accordance with a value dimension, could be polar terms such as wise-foolish, good-bad, difficult-easy
(i.e., "Tell me what you like about his behavior", "I'm happy with the changes").
Negative Evaluation – statements indicating negative "attitudes or emotional reactions of a speaker toward the things that he or she is discussing" (p. 54)
(i.e., "This is not a good plan", "I don't think this is a good idea").
Inference – verbalizations that "provide or call for judgements as opposed to statements of fact" (p. 56)- may be verbs that suggest judgment, predictions, or generalizations.
(i.e.," I think she misspells words because she wants my attention", "I think he can do the work, he's just choosing not to").
Summarization – statements that "review information discussed earlier in the interview at some time before the interview" (p. 57)
(i.e. "So then we've agreed to collect data for 2 weeks", "Tell me again what the intervention will look like?", "Can we go over the recording procedure again?").
Positive Validation – verbalizations that "call for agreement....with regard to matters of fact" (p. 58)- validation elicitors can always be responded to with a yes or no, the central function is to establish consensus between the consultant and the consultee. - Verbalizations calling for validation are coded as positive. Requests such as "could you..." or "would you..." are not coded as validations, but are coded as specifications. Content is coded in accordance with the antecedent utterance to which validation refers.
(i.e., "Okay", "Is that correct?", "Did we agree we were going to use tangible rewards?")
Negative Validation – verbalizations that "call for....disagreement...with regard to matters of fact" (p. 58).
Note: Quotations describing each category were taken from Bergan & Kratochwill, 1990, as presented in Gutkin, 1996. Some examples are from Bergan & Kratochwill, 1990, and some examples are from cases in the present study.

Appendix E
Competing Pathways Template



Behavior Support Plan

Setting Events	Predictor Events	Problem Behavior	Maintaining Consequences

Appendix F
Student Archival Records Search (SARS)

Data Recorder: _____ Date Recorded: _____

Instructions: All information should be for the **current** school year unless otherwise noted. It is recommended that record searches be conducted either: (a) at the end of the school year or (b) at the beginning of the new school year for the previous year. *If the search is conducted at the beginning of a new school year, "current" year refers to the past school year.*

I. DEMOGRAPHICS

A. Sex _____

B. Grade _____

C. Number of different elementary schools attended (including present) _____

D. Number of different middle schools attended (including present) _____

E. Number of different high schools attended (including present) _____

F. Ethnicity: ☐ White ☐ Black ☐ Asian ☐ Hispanic
☐ Native American ☐ Other _____

II. ATTENDANCE

A. Number of days present during current year _____

B. Number of days absent during current year _____

III. ACHIEVEMENT TEST SCORES (National Norm Percentiles)

A. Test Name/Date Administered _____

B. Reading Total _____

C. Math Total _____

D. Spelling Total _____

E. Language Total _____

F. Overall Total _____

X. NEGATIVE NARRATIVE COMMENTS:

List each negative narrative comment separately (according to the definitions in the SARS Training Manual).

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____

Total number of negative narrative comments for current school year: _____

XI. DISCIPLINARY CONTACTS FOR THE CURRENT SCHOOL YEAR, WITHIN SCHOOL AND WITH SOMEONE OTHER THAN THE TEACHER

(e.g., secretary, principal, vice principal, counselor, etc.)

	Description of Offense	Date	Action Taken
1.			
2.			
3.			
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12.			
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16.			
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18.			
19.			
20.			
21.			
22.			

Total Number of disciplinary contacts for current school year: _____

IV. NUMBER OF GRADE RETENTIONS _____

(Count all, including multiple retentions within the same grade.)

V. ACADEMIC AND BEHAVIORAL REFERRALS (for current school year)

	Academic	Behavioral	Speech/Language	Other
Date				
Date				
Date				
Date				
TOTAL				

VI. SPECIAL EDUCATION

A. Current IEP? ☐ Yes ☐ No

B. If yes, currently certified as

- ☐ MR: Mentally Retarded
- ☐ SBD: Severely Behaviorally Disordered
  SED: Severely Emotionally Disordered
- ☐ SLI: Speech/Language Impaired
- ☐ LD: Learning Disabled
- ☐ OI: Orthopedically Impaired
- ☐ OHI: Other Health Impairment
- ☐ HI: Hearing Impaired
- ☐ VI: Visually Impaired
- ☐ MH: Multi-Handicapped

VII. PLACEMENT OUT OF REGULAR CLASSROOM? ☐ Yes ☐ No

If yes, ☐ Partial Day ☐ Full Day

VIII. RECEIVING CHAPTER I SERVICES? ☐ Yes ☐ No

IX. FREQUENCY OF REFERRALS OUT OF SCHOOL: State Protective Services _

Counseling _____ Medical _____ Other _____

Appendix G
Functional Assessment Checklist for Teachers and Staff (FACTS-A&B)

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

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

_____
_____

Problem Behavior(s): Identify problem behaviors

___ Tardy	___ Inapprop Language	___ Disruptive	___ Theft
___ Unresponsive	___ Fight/Physical Aggress	___ Insubordination	___ Vandalism
___ Withdrawn	___ Verbal Harassment	___ Work not done	___ Other _____

Describe problem behavior: _____

Identifying Routines: Where, When and With Whom Problem Behaviors are Most Likely.

Schedule (Times)	Activity	With Whom does Problem Occur	Likelihood of Problem Behavior	Specific Problem Behavior
			Low High 1 2 3 4 5 6	
			1 2 3 4 5 6	
			1 2 3 4 5 6	
			1 2 3 4 5 6	
			1 2 3 4 5 6	
			1 2 3 4 5 6	
			1 2 3 4 5 6	
			1 2 3 4 5 6	
			1 2 3 4 5 6	
			1 2 3 4 5 6	

Select 1-3 Routines for further assessment: Select routines based on (a) similarity of activities (conditions) with ratings of 4, 5 or 6 and (b) similarity of problem behavior(s). Complete the FACTS-Part B for each routine identified.

Routine(s)	Problem Behaviors
1.	
2.	
3.	

March, Horner, Lewis-Palmer, Brown , Crone & Todd (1999) 4/26/99

Student/Grade: _____ Date: _____

Interviewer: _____ Respondent(s): _____

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

Routine/Activities/Context	Problem Behavior(s)

Provide more detail about the problem behavior(s):

What does the problem behavior(s) look like?

How often does the problem behavior(s) occur?

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

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

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

Strategies for preventing problem behavior	Consequences for problem behavior

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

Related Issues (setting events)		Environmental Features	
___ illness	Other:_____	___ reprimand/correction	___ structured activity
___ drug use	_____	___ physical demands	___ unstructured time
___ negative social	_____	___ socially isolated	___ tasks too boring
___ conflict at home	_____	___ with peers	___ activity too long
___ academic failure	_____	___ Other	___ tasks too difficult
		_____	

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

Things that are Obtained		Things Avoided or Escaped From	
___ adult attention	Other: _____	___ hard tasks	Other: _____
___ peer attention	_____	___ reprimands	_____
___ preferred activity	_____	___ peer negatives	_____
___ money/things	_____	___ physical effort	_____

SUMMARY OF BEHAVIOR

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

Setting Events & Predictors	Problem Behavior(s)	Maintaining Consequenc(s)

March, Horner, Lewis-Palmer, Brown , Crone & Todd (1999) 4/26/99

Appendix H
Functional Behavioral Assessment Checklist for Teachers (FBAC)

Student's Name:_____ Teacher's Name:_____
Date:_____
Directions: Please check the most important behavior of concern,or write-in the behavior in the blank next to "other". Then check the event that best predicts the occurrence of the behavior, and your best guess about the consequence that maintains the behavior.

Behavior of Concern		
_____disrupts class	_____won't follow directions	_____stealing
_____verbally abusive	_____physical altercations	_____sleeping
_____withdrawn	_____sexually inappropriate	_____cries
_____incomplete work	_____self-injurious	_____teasing
_____destroys things	_____rushes through work	_____talks out
_____seems sad	_____threatens others	_____daydreaming
_____out of seat	_____won't volunteer	_____temper tantrums
other:_____		

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

Related Issues (setting events)	Environmental Features	
_____illness	_____reprimand/correction	_____structured activity
_____medication	_____physical demands	_____unstructured time
_____interpersonal conflict at school	_____socially isolated	_____tasks too boring
_____conflict at home	_____with peers	_____activity too long
_____academic difficulty	_____tasks too difficult	
other:_____	other:_____	

What consequences appear most likely to maintain the problem behavior?

Things That Are Obtained			
_____adult attention	_____peer attention	_____preferred activity	_____money/things
other::_____			

Or Things Avoided or Escaped			
_____tasks	_____reprimands	_____peer negatives	_____physical effort
other:_____			

Appendix I
Functional Behavioral Assessment Checklist for Students (FBAC)

Student's Name:_____ Teacher's Name:_____
Date:_____
Directions: Please check the most important behavior of concern,or write-in the behavior in the blank next to "other". Then check the event that best predicts the occurrence of the behavior, and your best guess about the consequence that maintains the behavior.

Behavior of Concern		
_____disrupting class	_____following directions	_____stealing
_____verbally abusive	_____physical altercations	_____sleeping
_____withdrawn	_____sexually inappropriate	_____crying
_____incomplete work	_____hurting yourself	_____teasing
_____destroying things	_____rushing through work	_____talking out
_____sad	_____threatening others	_____daydreaming
_____out of seat	_____will not work with others	_____temper outbursts
other:_____		

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

Related Issues (setting events)	Environmental Features	
_____illness	_____teacher correction	_____structured activity
_____medication	_____physical activity	_____unstructured time
_____conflict w/ someone at school	_____socially isolated	_____tasks too boring
_____conflict at home	_____with peers	_____activity too long
_____academic difficulty	_____tasks too difficult	
other:_____	other:_____	

What consequences appear most likely to maintain the problem behavior?

Things That Are Obtained from the Problem Behavior			
_____adult attention	_____peer attention	_____preferred activity	_____money or things
other:;_____			

Or the Problem Behavior allows you to Avoid or Escape			
_____tasks	_____teacher reprimands	_____negative peer behavior	_____physical effort
other:_____			

Appendix J
Student Directed Functional Assessment Interview (SDFAI)

Student: _____ Grade: _____ Sex: M F IEP: Y N

Teacher: _____ School: _____

Interviewer: _____ Date: _____

Opening

We are meeting today to find ways to change school, so that you like it more. This interview will take about 30 minutes. I can help you best if you answer honestly. You will not be asked anything that might get you in trouble.

Student Strengths and Skills

1. *What do you like to do, or do well, while at school?* (e.g., activities, helping others).

_____

_____

2. *What are classes/topics you do well in?*

_____

_____

Define the Behaviors of Concern

Assist the student to identify specific behaviors that are resulting in problems in the school or classroom. Making suggestions or paraphrasing statements can help the student clarify her/his ideas.

3. *What do you do that gets you in trouble or are a problem?* Prompts:-late to class?, talk out in class?, don't get work done?, fighting?

	Behavior	Comment
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____

4. *Which of these behaviors occur together in some way? Do they occur about the same time? In some kind of order"? In response to the same type of situation?*

   a. _____

   b. _____

   c. _____

5. *Of these groups of behaviors which one is the most concern? Let's focus on those behaviors.* Write the target problem behaviors in the box marked *1 Problem behaviors* on the last page of the interview.

   a. _____

Complete Student Schedule and Routine Matrix

Assist the student to complete the schedule and routine matrices to show the routines and activities where they have difficulty with the behavior(s) they talked about. First have the student complete the schedule column (or have this column completed before the interview). Add any routines unique to the teacher's classroom.

6. *We know that some times and activities are harder and easier for different students. Can you tell me which times during your day are easy and which are difficult? A "6" indicates it is likely that you will have a problem and a "1" indicates that no or few problem(s) occur.* (Repeat for routines).

Student Schedule and Routine Matrix

Typical Schedule	Rating
	6 5 4 3 2 1
	6 5 4 3 2 1
	6 5 4 3 2 1
	6 5 4 3 2 1
	6 5 4 3 2 1
	6 5 4 3 2 1
	6 5 4 3 2 1
	6 5 4 3 2 1
	6 5 4 3 2 1
	6 5 4 3 2 1
	6 5 4 3 2 1
	6 5 4 3 2 1

Routines	Rating
Getting help	6 5 4 3 2 1
Getting materials/drink, sharpening pencil	6 5 4 3 2 1
Working in groups	6 5 4 3 2 1
Working alone	6 5 4 3 2 1
Getting permission and going to the restroom	6 5 4 3 2 1
Moving between activities or locations	6 5 4 3 2 1
Working with substitute teachers/volunteers	6 5 4 3 2 1
	6 5 4 3 2 1
	6 5 4 3 2 1
	6 5 4 3 2 1
	6 5 4 3 2 1

Develop Competing Behavior Pathway

One of the reasons I want to talk to you is to learn about when and why problem behaviors occur and do not occur. So, I am going to ask you questions about when you are having problems and then I will ask you some questions about why you think you are having problems.

7. *What events trigger or start problem behavior? (appear to set-off the problem behavior?* Write answer in the box marked *2 Triggering Antecedents* on the last page of the interview. For example:

__ class demands (hard, boring, unclear, long) __ teacher reprimands
__ peers (teasing, encouraging) __ other

8. *What do you get after you do the problem behavior? What do you want to happen?* Write answer in the box marked *3 Maintaining Consequences* on the last page of the interview. *For example, to escape or avoid*:

__teacher (demands, reprimands) __ peers (teasing)
__tasks (hard, boring) __ other

Or it could be to get something like attention or an item. For example:

__ teacher attention __ peers
__ item (game, food, money, different task) __ other

9. *We know that certain events make some days easier and harder than others and sometimes these events occur outside of the school day. What important events, places, or activities tend to affect your day*? Write answer in the box marked *4 Setting Events* on the last page of the interview. *For example*:

__ lack of sleep __ illness __ physical pain __ hunger
__ trouble at home __ activity __ noise/distractions __other
__ fight/conflict with peer

10. Before we talked about things that trigger problems. What do you think the teacher wants you to do when these events happen? What should you do? Write answer in the box marked *5 Desired Alternative* on the last page of the interview.

11. *As with problem behavior, there are things that you get for doing what you should, or what the teacher wants. If you do the behavior(s) we just talked about what happens*? Write answer in box marked *6 Maintaining Consequence* on the last page of the interview.

Escape/Avoid:
__teacher (demands, reprimands) __ peers (teasing)
__tasks (hard, boring) __ other

Get/obtain:
__ teacher attention __ peers
__ item (game, food, money, different task) __ other

We know that what we get for problem behaviors is often different than what we get for desired behaviors. Another way of thinking about this is that problem behaviors work for us. For example, if a student doesn't want to take a math test, they might start teasing a peer so that the teacher will send them to the office and they get to miss the test.

12. *Let's talk about ways to make the problem behavior better. Before you said you did problem behavior to* ___(3 Maintaining Consequence)___. *What do you think the teacher would like you to do instead of the problem behavior? What is an alternative response you could make that would get you same thing as the problem behavior?* Write answer in box *marked 7 Desired alternative* on the last page of the interview.

Developing Behavior Support Plan

The information collected about when, where, and why problem behaviors are occurring provides the foundation for developing a comprehensive behavior support plan. The following questions provide information about the features of multi-component support plan. Use the Behavior Support Planning matrix on the following page to summarize the plan and to make sure that all components of the Competing Behavior Pathway are addressed in the plan.

13. *What are ways to reduce the effect of things that make the problem behavior worse?* (Setting Event Manipulations).

__Clarify rules/expected behavior for whole class
__Written contract with the student
__Counseling
__Change schedule
__Change seating
__Other

14. *What are ways to prevent the problem behavior?* (Antecedent Manipulations).

__Reminders when problem behavior is likely
__Modify assignment to match student skills
__Provide extra assistance
__Other

15. *What can be done to increase desired behavior or to teach an alternative behavior?* (Behavior Teaching Manipulations).

__Practice expected behavior in class
__Other
__Self-management program

16. *What should happen when a problem behavior occurs?* (Consequence Manipulations).

__Reward/punishment program
__Reduced privileges
__Reprimand in class
__Contact with parents
__Time out
__Other

17. *What should happen when the desired or alternative behavior occurs?* (Consequence Manipulations).

__Reward program
__Increased privileges
__Praise from teacher
__Other

Student-Directed Functional Assessment Interview

Student Name: _____ Interviewer: _____

Referring Teacher: _____ Date: _____

I. Opening. *"We are meeting today to find ways to change school so that you like it more. This interview will take about 30 minutes. I can help you best if you answer honestly. You will not be asked anything that might get you in trouble."*

Assist the student to identify specific behaviors that are resulting in problems in the school or classroom. Making suggestions or paraphrasing statements can help the student clarify his or her ideas. You should have a list of behaviors nominated by the referring teacher.

II. Define the behaviors of concern.* *"What are the things you do that get you in trouble or are a problem?" (Prompts: Late to class? Talk out in class? Don't get work done? Fighting?)*

	Behavior	*Comment*
1.		
2.		
3.		
4.		
5.		

III. Complete student schedule. *Use the "Student Daily Schedule" matrix to identify the times and classes in which the student performs problem behavior. Focus the interview on those times that are* ***most likely*** *to result in problem behavior.*

* You will use the numbers to the left as codes for the identified behaviors as you complete the rest of the interview.

Student Daily Schedule

Please place an "X" in each column to show the times and classes where you have difficulty with the behaviors we talked about. If you have a lot of difficulty during a period, place an "X" on or near the 6. If you have a little difficulty during the class or hall time, place the "X" on or near the 1. We can practice on a couple together before we start.

Subject, Teacher	Before School	1st Period	Hall	2nd Period	Hall	3rd Period	Hall	4th Period	Lunch	5th Period	Hall	6th Period	Hall	7th Period	Hall	8th Period	After School
Most Difficult 6																	
5																	
4																	
3																	
2																	
Least Difficult 1																	

Student Directed Functional Assessment Interview (Secondary)

Student: _____ Grade: _____ Sex: M F IEP: Y N

Teacher: _____ School: _____

Interviewer: _____ Date: _____

Opening

We are meeting today to find ways to change school, so that you like it more. This interview will take about 30 minutes. I can help you best if you answer honestly. You will not be asked anything that might get you in trouble.

Student Strengths and Skills

1. *What do you like to do, or do well, while at school?* (e.g., activities, helping others).

_____

_____

2. *What are classes/topics you do well in?*

_____

_____

Define the Behaviors of Concern

Assist the student to identify specific behaviors that are resulting in problems in the school or classroom. Making suggestions or paraphrasing statements can help the student clarify her/his ideas.

3. *What do you do that gets you in trouble or are a problem?* Prompts:-late to class?, talk out in class?, don't get work done?, fighting?

	Behavior	Comment
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____

4. *Which of these behaviors occur together in some way? Do they occur about the same time? In some kind of order"? In response to the same type of situation?*

   a. _____

   b. _____

   c. _____

5. *Of these groups of behaviors which one is the most concern? Let's focus on those behaviors.* Write the target problem behaviors in the box marked *I Problem behaviors* on the last page of the interview.

   a. _____

Complete Student Schedule

Assist the student to complete the schedule to show the times and classes where they have difficulty with the behavior(s) they talked about.

6. We know that some times and activities are harder and easier for different people. Can you tell me which times during your day are easy and which are difficult? A "6" indicates it is likely that you will have a problem and a "1" indicates that no or few problem(s) occur.

Student Daily Schedule

	Subject	Teacher	Rating
Before School			6 5 4 3 2 1
1st period			6 5 4 3 2 1
Hall			6 5 4 3 2 1
2nd period			6 5 4 3 2 1
Hall			6 5 4 3 2 1
3rd period			6 5 4 3 2 1
Hall			6 5 4 3 2 1
4th period			6 5 4 3 2 1
Lunch			6 5 4 3 2 1
5th period			6 5 4 3 2 1
Hall			6 5 4 3 2 1
6th period			6 5 4 3 2 1
Hall			6 5 4 3 2 1
7th period			6 5 4 3 2 1
Hall			6 5 4 3 2 1
8th period			6 5 4 3 2 1
After school			6 5 4 3 2 1

Develop Competing Behavior Pathway

One of the reasons I want to talk to you is to learn about when and why problem behaviors occur and do not occur. So, I am going to ask you questions about when you are having problems and then I will ask you some questions about why you think you are having problems.

7. *What events trigger or start problem behavior? (appear to set-off the problem behavior?* Write answer in the box marked *2 Triggering Antecedents* on the last page of the interview. For example:

__ class demands (hard, boring, unclear, long) __ teacher reprimands
__ peers (teasing, encouraging) __ other

8. *What do you get after you do the problem behavior? What do you want to happen?* Write answer in the box marked *3 Maintaining Consequences* on the last page of the interview. *For example, to escape or avoid*:

__teacher (demands, reprimands) __ peers (teasing)
__tasks (hard, boring) __ other

Or it could be to get something like attention or an item. For example:

__ teacher attention __ peers
__ item (game, food, money, different task) __ other

9. *We know that certain events make some days easier and harder than others and sometimes these events occur outside of the school day. What important events, places, or activities tend to affect your day*? Write answer in the box marked *4 Setting Events* on the last page of the interview. *For example*:

__ lack of sleep __ illness __ physical pain __ hunger
__ trouble at home __ activity __ noise/distractions __other
__ fight/conflict with peer

10. Before we talked about things that trigger problems. What do you think the teacher wants you to do when these events happen? What should you do? Write answer in the box marked *5 Desired Alternative* on the last page of the interview.

11. *As with problem behavior, there are things that you get for doing what you should, or what the teacher wants. If you do the behavior(s) we just talked about what happens*? Write answer in box marked *6 Maintaining Consequence* on the last page of the interview.

Escape/Avoid:

__teacher (demands, reprimands) __ peers (teasing)
__tasks (hard, boring) __ other

Get/obtain:

__ teacher attention __ peers
__ item (game, food, money, different task) __ other

We know that what we get for problem behaviors is often different than what we get for desired behaviors. Another way of thinking about this is that problem behaviors work for us. For example, if a student doesn't want to take a math test, they might start teasing a peer so that the teacher will send them to the office and they get to miss the test.

12. *Let's talk about ways to make the problem behavior better. Before you said you did problem behavior to* ___(3 Maintaining Consequence)___. *What do you think the teacher would like you to do instead of the problem behavior? What is an alternative response you could make that would get you same thing as the problem behavior?* Write answer in box *marked 7 Desired alternative* on the last page of the interview.

Developing Behavior Support Plan

The information collected about when, where, and why problem behaviors are occurring provides the foundation for developing a comprehensive behavior support plan. The following questions provide information about the features of multi-component support plan. Use the Behavior Support Planning matrix on the following page to summarize the plan and to make sure that all components of the Competing Behavior Pathway are addressed in the plan.

13. *What are ways to reduce the effect of things that make the problem behavior worse?* (Setting Event Manipulations).

__Clarify rules/expected behavior for whole class
__Written contract with the student
__Counseling
__Change schedule
__Change seating
__Other

14. *What are ways to prevent the problem behavior?* (Antecedent Manipulations).

__Reminders when problem behavior is likely
__Modify assignment to match student skills
__Provide extra assistance
__Other

15. *What can be done to increase desired behavior or to teach an alternative behavior?* (Behavior Teaching Manipulations).

__Practice expected behavior in class
__Other
__Self-management program

16. *What should happen when a problem behavior occurs?* (Consequence Manipulations).

__Reward/punishment program
__Reduced privileges
__Reprimand in class
__Contact with parents
__Time out
__Other

17. *What should happen when the desired or alternative behavior occurs?* (Consequence Manipulations).

__Reward program
__Increased privileges
__Praise from teacher
__Other

Summary Statement Form

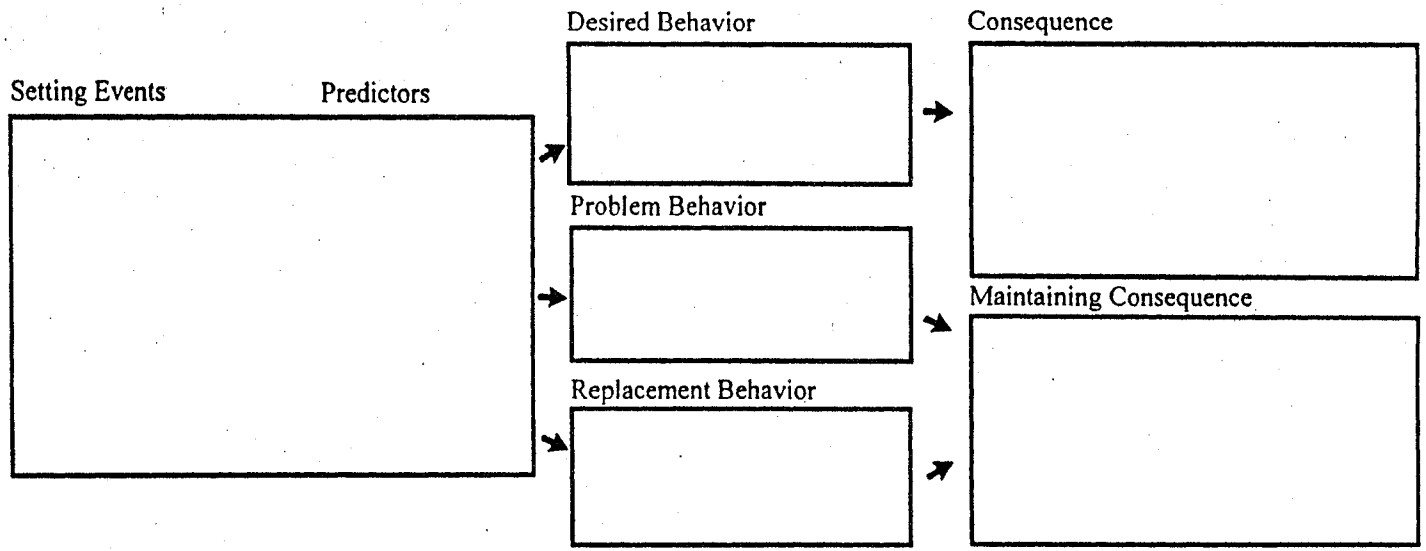
Place/Activity/Event	Predictor	Problem Behavior(s)	Maintaining Consequences

④ ② ① ③

Complete the summary statement diagram following the numbered sequence (Behavior(s) first, then Predictors, etc.). Consider the items below as possible elements for inclusion in the summary statement. Complete a different summary statement for each new consequence.

What Important Events, Places, or Activities Tend to be Associated with the Behavior?	What Appears to Set off Problem Behavior	What do the Problem Behaviors Look Like?	What Does the Student Gain From the Problem Behaviors?
Lack of sleep _____	Class demands that are:	Late to class _____	Escape or Avoid
Illness _____	-too hard _____	Talk out in class _____	-teacher demands _____
Physical pain _____	-boring _____	Disruptions _____	-teacher reprimands _____
Hunger _____	-unclear _____	Inappropriate language _____	-teacher correction _____
Trouble at home _____	-long _____	Disrespectful behavior _____	-peer social contact _____ (teasing)
Fight/conflict with Peers _____	Teacher reprimands _____	Property destruction _____	-tasks (hard, long) _____
Noise/distractions _____	Peer teasing _____	Carrying weapons _____	
Activity/Class _____	Peer encouragement _____	Fidget _____	Get Attention
Other _____	Other_____	Not completing work _____	-from peers _____
		Steal _____	-from teacher/adult _____
		Threaten _____	
		Vandalism _____	Get Activity or Item
		Insubordination _____	-access to game _____
		Other _____	-access to toy _____
			-access to food _____
			-access to money _____
			-access to task _____

Building a Support Plan



What are ways to change the context to make the problem behavior unnecessary?	What are ways to prevent the problem behavior?
__Clarify rules and expected behavior for whole class __Written contract with the students __Student self-manipulator sheet __Change seating arrangements __Change schedule __Counseling __Other	__Reminders about behavior when problem behavior is likely __Provide extra assistance __Modify assignments to match student skills __Other

What can be done to increase expected behaviors or to teach a replacement behavior?
__Practice expected behavior in class __Self-management program __Other

What should happen when a problem behavior occurs?	What should happen when desired or replacement behavior occurs?
__Reward/punishment program __Contact with parents __Reduced privileges __Time out __Office referral __Reprimand in class __Other	__Reward program? __Praise from teacher __Other

Appendix K
Adapted Functional Assessment Interview for Parents (Adapted FAI)

Student name/number_____ Parent's name_____
School_____ Date _____

After introduction of yourself (the RA) state: **"I'm trying to gather some information about your son (or daughter) in regards to how you see his (or her) behavior at school."**

What kind of strengths does (student's name) **possess?** List strengths.

Describe the behavior that is most likely to get (student's name) **in trouble at school.**

Describe the conditions that this behavior is most likely to occur.

When:_____ **Where:**_____

With whom:_____

Describe what usually happens after the problem behavior occurs.

Describe what usually happens immediately before the problem behavior occurs.

Describe what you usually do when the behavior occurs.

Describe what others (i.e., students and teachers) **do when the behavior occurs.**

Appendix L
ABC Observation Form

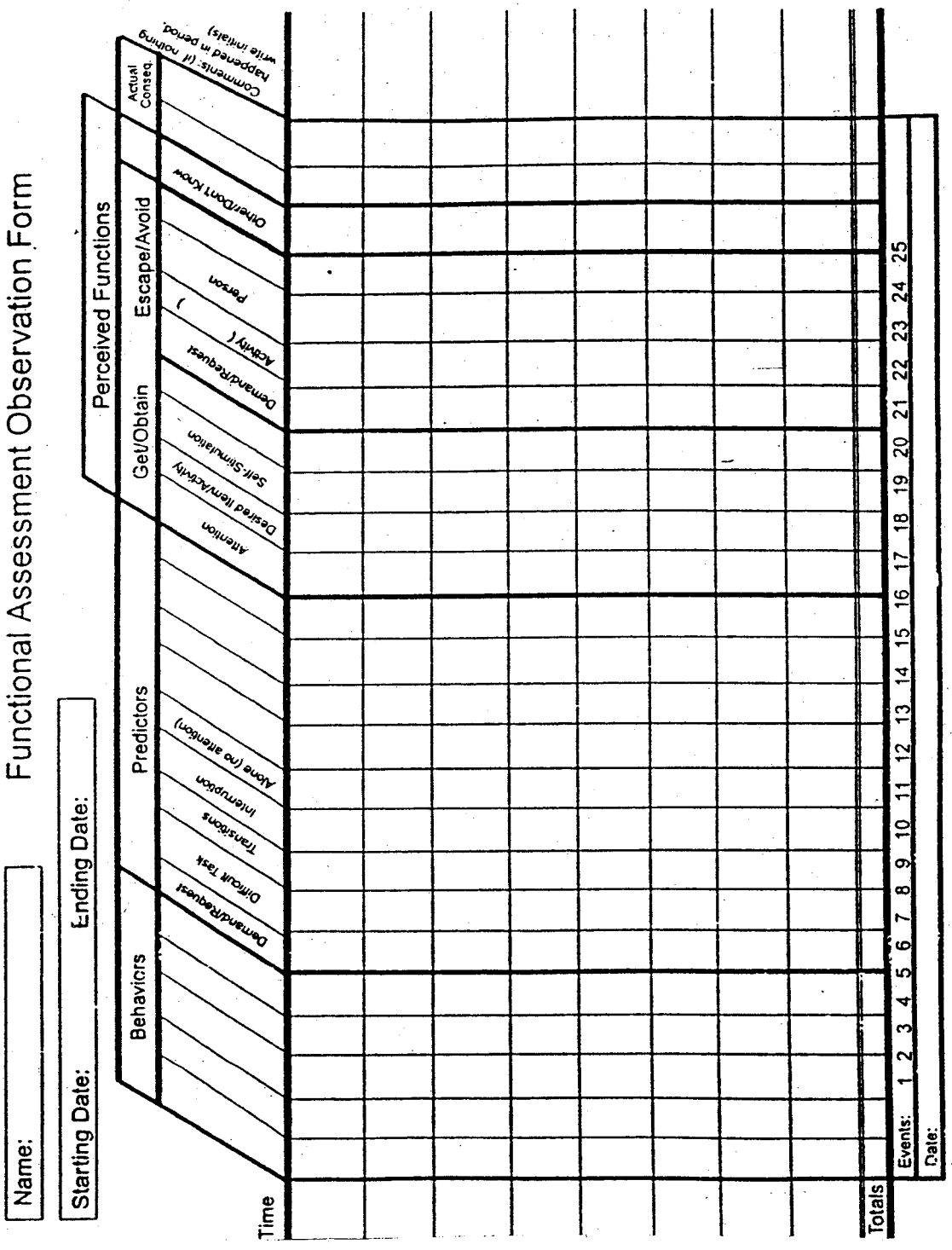
Student _____ Teacher _____

Date _____ Time _____ School _____

Setting:

Time	Antecedents	Behaviors	Consequences

Appendix M
Functional Assessment Observation Form (FAOF)



Appendix N
Intervention Evaluation Inventory-Short Form

Please complete the items listed below by placing a checkmark on the line next to each question that best indicates how you feel about the treatment. Please read the items very carefully because a checkmark accidentally placed on one space rather than another may not represent the meaning you intended.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I find this intervention plan to be an acceptable way of dealing with the student's problem behavior.	_____	_____	_____	_____	_____
2. I would be willing to use this procedure if I had to change the student's problem behavior.	_____	_____	_____	_____	_____
3. I believe that it would be acceptable to use this plan without a student's consent.	_____	_____	_____	_____	_____
4. I like the procedures used in this intervention plan.	_____	_____	_____	_____	_____
5. I believe this plan is likely to be effective.	_____	_____	_____	_____	_____
6. I believe the student will experience discomfort during the use of this plan.	_____	_____	_____	_____	_____
7. I believe this plan is likely to result in permanent improvement.	_____	_____	_____	_____	_____
8. I believe it would be acceptable to use this intervention plan with individuals who cannot choose treatments for themselves.	_____	_____	_____	_____	_____
9. Overall, I have a positive reaction to this intervention plan.	_____	_____	_____	_____	_____

Adapted from: Kelley, M. L., Heffer, R. W., Gresham, F. M., & Elliott, S. N. (1989). Development of a Modified treatment evaluation inventory. Journal of Psychopathology and Behavioral Assessment, 11, 235-247.

Appendix O
Student Intervention Rating Profile

1. What do you think of the support plan the teacher will use if the misbehavior happens again? Is the plan fair? Comments:	1. Great plan 2. Good plan 3. Not sure 4. Not a good plan 5. Bad plan
2. Is what the teacher plans to do too harsh? Comments:	1. Very harsh 2. Harsh 3. Not sure 4. Not very harsh 5. Not harsh at all
3. Will the teacher's plan make you worried about what your friends will say? Comments:	1. Very worried 2. Worried 3. Not sure 4. Not very worried 5. Not worried at all
4. Is there a better way to help you stop the misbehavior? Comments:	1. Much better way to help 2. Better way to help 3. Not sure 4. There may be a better way to help 5. A much better way to help
5. Is this a good plan for other students if they misbehave? Comments:	1. Great plan for other students 2. Good plan for other students 3. Not sure 4. Not a good plan for other students 5. Bad plan for other students
6. I like this plan. Comments:	1. I like this plan very much 2. I like this plan 3. Not sure 4. I do not like this plan 5. This is a very bad plan
7. Do you think this plan will be helpful? Comments:	1. Very helpful 2. It may be helpful 3. Not sure 4. It may not be helpful 5. It will not be helpful

Appendix P: Classroom Behavior Observation Data Collection Procedures

Using the Classroom Observation Form

Descriptive Information The observer fills out his/her name. The teacher's name is noted. Activity describes the classroom activity conducted. (i.e., individual seatwork, teacher or guest lecture, small group activity with more than one student, large group activity with more than 4 students, an entire classroom activity (describe it), movie either educational or entertainment, or individual presentations to the class.) If the activity changes during the session mark it on the interval that it happened and also note the change in activity at the top of the page with an additional description. Content area is noted as reading, writing, math (e.g., pre-algebra or calculus), history, science, computer, independent living, American literature etc. Reliability coder provides a space for the initials of the inter-rater observer if the session is a reliability check. Classroom setting is coded as a self-contained classroom, the woodshop, the gym, the cafeteria, or a general education classroom, etc. Page of pages is filled out with the first number identifying what page it is in the sequence, and the second blank is for the last page in the sequence of pages used.

Interval Recording Procedures A 15-minute tape is constructed that signals each 10 second-interval with a pre-recorded verbal prompt (i.e., "Observe 1-1." 10 seconds elapse. Then the pre-recorded prompt states, "Observe 1-2.") The person conducting the observation uses the pre-recorded tape with a recorder and an ear piece extension cord. The ear piece is used so that only the person conducting the observation can hear the prompts.

Momentary time sampling. After the verbal prompt (e.g., "Observe 1-1."), the observer notes whether the student is on-task (+) or off-task (-) at the moment that the prompt occurs.

Partial-interval time sampling. After the observer records on- or off-task behavior, the observer notes any occurrence of the student performing any of the coded behaviors (i.e., talking, T; out-of-seat, S; provoking, P; noise, N; or, aggression, Ag). In addition, teacher behavior directed at the target student is noted (i.e., interaction, X; approval, A; and, disapproval, D). The observer also records peer behavior directed at the target student (i.e., talking, Tp or provoking, Pp).

Peer comparison interval. Every sixth interval a non-target student is randomly selected and observed using the same codes described above. These data provide a normative comparison in the same environment with similar setting characteristics as the target student.

Coding Student Behaviors

+ = On-task behavior. Defined as the student oriented towards the appropriate activity. For example, the student is oriented to his textbook, paper and pencil, or teacher. On-task is also coded for examples where the student is oriented to other students when the activity is a group activity. Otherwise, the behavior is considered off-task. Non-exemplars include talking to others when the teacher expectation is to complete independent seatwork.

- = Off-task behavior. Defined as the student not being oriented to the instructional material or activity. For example, the student is staring at persons or objects not related to the student's instruction. Non-exemplars include when the student is supposed to be talking to other students, or when the student is talking to the teacher.

T = Talking. Defined as the student talking with others. Non-exemplars include talking with students after teacher directions to engage in small group discussion about a classroom project.

O = Out-of-seat. Defined as the student being out of his seat. This is coded when the student's buttocks are no longer making contact with the seat. Non-exemplars include lying on the desk with feet between the chair and student's buttocks.

P = Provoking. Defined as derogative name-calling (i.e., "four-eyes", "drug addict", "slob", "jerkosaurus", etc.), or performing physically threatening postures or gestures (i.e., Shaking a fist at someone or flipping someone off), or throwing spit wads or paper balls to get someone's attention. Non-exemplars include verbal threats of aggression or throwing pencils or books or chairs, see aggression below.

N = Noise. Any audible noise produced by the student that is superfluous to the task at hand. For example, humming, whistling, singing, rapping, snapping fingers, making popping sounds, or tapping pencils or feet. Non-exemplars are talking to others.

Ag = Aggression. Defined as forceful contact with another person. That is slapping, hitting, shoving, punching, swinging at another, swinging an object at another, throwing something at another person that could result in injury (i.e., throwing pencils or books). This also includes verbally threatening behavior such as stating that the student will physically attack another (e.g., "Step outside and I'll knock your teeth out!"). Non-exemplars include throwing wadded paper balls or name-calling.

Tm = Tantrum. This includes behavior such as stomping feet, shoving books off desktops or pushing chairs in a fit. Non-exemplars include physical aggression or verbal aggression, which are directed specifically at other persons.

R = Refusal. This category of behavior includes defiance to the teacher, argumentative behavior, and work refusal to teacher request. This is an overt behavioral response to teacher request. Non-exemplars would include off-task behavior (e.g., the student is staring at persons or objects not related to the student's instruction).

Teacher Behaviors

X = Interaction. Defined as teacher interaction with the target student. For example, giving directions, explanations, or teaching that is not intended as reward or punishment. Non-exemplars include teacher approval or disapproval, see below.

A = Approval. Teacher offers verbal approval for the student's social behavior. For example, praising classroom behaviors such as working diligently. Non-exemplars include giving directions to complete an assignment.

D = Disapproval. Teacher disapproval for the student's social behavior. For example, "Stop talking!" Non-exemplars include giving directions (e.g., "I would like everyone to work quietly.").

Peer Behaviors in Relation to Target Student

Pv = Peer Talking to Target Student. Defined as a student talking with the target student. Non-exemplars include talking after teacher directions to engage in small group discussion about a classroom project.

Pp = Peer Provokes Target Student. Defined as derogative name-calling or performing physically threatening postures or gestures or throwing spit wads or paper balls directed at the target student. Non-exemplars include verbal threats of aggression or throwing pencils or books or chairs. See aggression.

Classroom Observation Form
Observer_____Teacher_____Activity_____
Content area_____Reliability coder_____Classroom setting _____
Page____of pages_____Time started_____Time ended_____Date_____

	Interval-1	Interval - 2	Interval -3	Interval - 4	Interval - 5	Interval - 6
1	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN XADPvPpAg
2	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN XADPvPpAg
3	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN XADPvPpAg
4	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN XADPvPpAg
5	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg-	+TOPTmRN XADPvPpAg	+TOPTmRN XADPvPpAg
6	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN XADPvPpAg
7	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN -XADPvPpAg	+TOPTmRN XADPvPpAg
8	+TOPTmRN - XADPvPpAg	+TOPTmRN -XADPvPpAg	+TOPTmRN -XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN XADPvPpAg
9	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN -XADPvPpAg	+TOPTmRN XADPvPpAg
10	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN XADPvPpAg
11	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN XADPvPpAg
12	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpA	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN XADPvPpAg
13	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN XADPvPpAg
14	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN XADPvPpAg
15	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN - XADPvPpAg	+TOPTmRN XADPvPpAg

Coding Behavioral Observation Data

1. Coding the Overall Proportion of Target Student and Peer Comparison Behavior

The overall proportion of the Target Student is compared to the Peer Comparison data in the Proportion of Target and Peer Comparison Behavior data coding sheet. The coding sheet uses the overall proportion of behaviors per observation compared to the peer comparison. In the first row, the Target Student's Behavior is recorded and the Peer Comparison is recorded in the second row.

	On-task	Off-task	Talking	Out-of-Seat	Provoke	Noise	Aggression
Target Student	+= n/75	-=n/75	T=n/75	S=n/75	P=n/75	N=n/75	Ag=n/75
Peer Comparison	+=n/15	-=n/15	T=n/15	S=n/15	P=n/15	N=n/15	Ag=n/15

The table above shows that based on 75 intervals (15 rows x 5 intervals) the frequency of the target student behavior per observation is calculated by dividing the occurrences by 75. For the Peer Comparison Data, the proportion of behavior is calculated by dividing by 15. The date of the observation, the student code-number, and classroom teacher is also recorded for each observation.

This data is also transformed into Excel spread sheets to make graphs for the Positive Behavioral Support Plan Reports (i.e., reports summarizing baseline data for Behavioral Consultation cases) or Functional Behavioral Assessment Reports (i.e., for cases involved in FBAs).

Proportion of Target and Peer Comparison Behavior

Date
Student #
Teacher

	On-Task	Off-Task	Talking	Out-of-Seat	Provoke	Noise	Aggression
Target							
Peer							

Date
Student #
Teacher

	On-Task	Off-Task	Talking	Out-of-Seat	Provoke	Noise	Aggression
Target							
Peer							

Date
Student #
Teacher

	On-Task	Off-Task	Talking	Out-of-Seat	Provoke	Noise	Aggression
Target							
Peer							

Date
Student #
Teacher

	On-Task	Off-Task	Talking	Out-of-Seat	Provoke	Noise	Aggression
Target							
Peer							

Date
Student #
Teacher

	On-Task	Off-Task	Talking	Out-of-Seat	Provoke	Noise	Aggression
Target							
Peer							

Appendix Q: Behavioral Sequence Coding System

Each 5-interval sequence is coded in an Antecedent-Behavior-Consequence (A-B-C) sequence. Each 3 10-second sequence is coded as a unit.

On the Behavior Sequence Coding Sheet each A-B-C sequence interval is recorded in the accompanying A. Symbol – B. Symbol - C. Symbol column. The first column labeled Sequence indicates the row it was coded from and an alphabet letter is used to determine which of the 3 sequences is being coded. For example, on line 1, the 1st 10-second interval, the 2nd 10-second interval, and 3rd 10-second interval would be coded in an A-B-C sequence denoted as 1a. The 2nd 10-second interval, the 3rd 10-second interval, and 4th 10-second interval would be coded in an A-B-C sequence denoted as 1b. The 3rd 10-second interval, the 4th 10-second interval, and 5th 10-second interval would be coded in an A-B-C sequence denoted as 1c. In the cases where there are multiple possibilities use additional letters. (See below).

After coding the A. Symbol – B. Symbol - C. Symbol sequence code the number codes for the sequence under the respective columns: the A. Number accompanying the A. Symbol, the B. Number accompanying the B. Symbol, and the C. Number accompanying the C. Symbol.

The number codes for the symbols are given below:

Numeric Key: The antecedent and consequent numeric codes are identical and correspond to the Classroom Observation code with the exception of 15, which denotes an interaction between the teacher and peer behavior in the antecedent or consequent behavioral sequence code. The behavior code under the heading Behavior is used only to code the target student's behavior. When using the numerical code active problem behavior (i.e., T = 3, O = 4, P = 5, Tm = 6, R = 7, N = 8, Ag = 14) from the target student is always given precedence over passive behavior (i.e., + = 1 or - = 2).

Antecedent:
+ = 1, - = 2, T = 3, O = 4, P = 5, Tm = 6, R = 7, N = 8, X = 9, A = 10, D = 11, Pv = 12, Pp = 13, Ag = 14, (Social Combinations of teacher-peer behavior. XPv, XPp, APv, App, DPv, or DPp) = 15, Combination of target student behaviors (i.e., O, P, Tm, R, and N) = 16
Behavior: + = 1, - = 2, T = 3, O = 4, P = 5, Tm = 6, R = 7, N = 8, Ag = 14, Combination of target student behaviors (i.e., O, P, Tm, R, and N) = 16
Consequence:
+ = 1, - = 2, T = 3, O = 4, P = 5, Tm = 6, R = 7, N = 8, X = 9, A = 10, D = 11, Pv = 12, Pp = 13, Ag = 14, (Social Combinations of teacher-peer behavior. XPv, XPp, APv, App, DPv, or DPp) = 15, Combination of target student behaviors (i.e., O, P, Tm, R, and N) = 16

Behavior Sequence Coding Sheet

Date of Observation:____________

Observer:____________________

Sequence	A. Symbol	A. Number	B. Symbol	B. Number	C. Symbol	C. Number

Appendix R
Functional Behavioral Assessment (FBA) Essential Components Checklist

Collect Parent Consent, Student Assent, Teacher Consent, and Record Analysis Consents_____

A. Problem Identification and Baseline Assessment Phase

		Yes	No
Functional Assessments - FACTS; - ABC - FBAC; - FAOF - SDFAI - Adapted FAI	• All assessments complete	___	___
	• All demonstrate face validity (e.g., functions of problem behavior have support in the research literature, setting events are relevant to the conceptual model)	___	___
Summary of Testable Hypotheses (Worksheet 1 & Worksheet 2)	• Worksheets complete	___	___
	• "Level of Confidence" & "Recommendation" sections are reasonably justified	___	___
Report on Assessment Phase	• Report is complete; conclusions and recommendations are justified	___	___
Baseline Data	• Discuss the adequacy of baseline data with supervisor in regard to the level difference from peer comparison and variability of data.	___	___

B. Intervention Planning & Implementation Phase

Case Review @ Team Meeting	• Discussed assessments, testable hypotheses, recommended next steps (behavior support planning or more assessment)	___	___
Design & Implement Alternating Assessment Conditions (if necessary)	• Alternating assessment condition resulted in the manipulation of relevant factors in an effective manner	___	___
Behavior Support Planning Meeting	• Plan prevents occurrence of problem behavior, teaches new skills, & arranges effective consequences	___	___
	• Teachers, parents, and the student believe the plan is acceptable (SIRP / TEI data collected)	___	___
	• Behavior support plan appears to be a good contextual fit with clear implementation guidelines	___	___
	• Discuss use of ABAB design	___	___
Implementation & Monitoring	• Monitoring and data collection strategies are developed to evaluate the fidelity / integrity of implementation	___	___
Written Behavior Support Plan - Report	• Report documents plan as well as monitoring and evaluation strategies	___	___

C. Evaluation Phase

Date-based Decision Making	• Teacher, student, & parent feedback, as well as observation data is used to evaluate the effectiveness of the support plan and degree to which it was implemented as written (treatment fidelity)	___	___
Implement Reversal Phase (if possible)	• Adequate data is collected during reversal condition	___	___
Plan for Maintenance & Generalization	• Discuss the use a specific strategies for help the student demonstrate prosocial skills / improved performance in new environments	___	___
	• Develop follow-up plans	___	___
Develop Final report	• Report includes evaluation of plan & student's performance, and recommendations	___	___

Appendix S
Conjoint Behavioral Consultation (CBC) Essential Components Checklist

A. Problem Identification conducted by telephone or in person with the teacher

		Yes	No
Goal specification	Obtain a behavioral description of the student's problem behavior from the teacher.	___	___
	Obtain a description of conditions under which the problem behavior occurs.	___	___
	Obtain an estimate of the level of incidence of the problem behavior.	___	___
Assessment Objectives	Obtain agreement regarding the type of measure used to assess performance, what is to be recorded, how recording is to be done, and the schedule of recording.	___	___
Initial Meeting Date	Set date for the first meeting to present a tentative plan.	___	___

B. Collect 5 Baseline Data Observations

Baseline Data	Discuss the adequacy of baseline data with supervisor in regard to the level difference from peer comparison and variability of data.	___	___

C. Problem Analysis and Plan Implementation for the Teacher, Parent(s), and Student

Write Tentative Plan Report	Write Tentative Plan report with (PI, PA, graph of behavior data, and Proposed Plan sections)	___	___
Problem Identification (Validation)	In the meeting determine the discrepancy between the existing and desired student behavior levels as depicted in the report.	___	___
	Determine a behavioral objective based on the data that is measurable.	___	___
Problem Analysis	Discuss conditions (e. g., setting events, antecedents, and consequences) that influence the problem behavior as written in the report.	___	___
Plan Design	Discuss proposed plan (i.e., DR+, group contingencies, or self-monitoring) based on your construction of the problem analysis.	___	___
	Validate plan with participants using Intervention Evaluation Inventory for parents and teachers and the Student's Intervention Rating Profile student.	___	___
	Discuss use of ABAB design.	___	___
Skill Development	Determine whether plan executors possess the skills needed for implementation.	___	___
	Determine the necessary materials.	___	___
	Schedule training if necessary.	___	___
Implementation Monitoring	Determine the schedule for data collection and treatment integrity measures.	___	___
Next Meeting Date	Schedule next meeting within a month to review treatment.	___	___

D. Problem Evaluation within the Month of the Treatment Plan Implementation

Write Behavioral Support Review Report	Write Behavioral Plan report with review of previously written section and an update of treatment data from baseline (PI, PA, graph of AB phase data, and Treatment Plan sections)	___	___
Goal Attainment	Review report and focus on attainment of behavioral goals.	___	___
Plan Effectiveness	Discuss difference in level of problem behavior from baseline to treatment.	___	___
	Have student, parent(s), and teacher discuss attribution for change or lack of change in behavior.	___	___
	Discuss necessity for changing treatment plan.	___	___
Next Meeting or Terminate	Schedule next meeting or termination and additional data collection with SARS.	___	___

VITA

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DOCTORAL CANDIDATE/PREDOCTORAL INTERN

9/01-present University of Washington, Parenting Clinic, Seattle, WA
Prospective Candidate for Doctor of Philosophy in School Psychology
Research assistant for the Incredible Years Child, Teacher, and Parent Training programs and Psychometrist for the Center on Human Development and Disability

EDUCATION

9/93-6/96 Tufts University, Medford, MA
Certificate of Advanced Graduate Study in School Psychology, June 1996
Master of Arts in School Psychology, May 1995

9/89-6/92 University of Western Ontario, London, ON
Honors Bachelor of Arts in Psychology, May 1992

CERTIFICATIONS

10/96 Nationally Certified School Psychologist
8/96 Continuing Educational Staff Associate in WA state, School Psychologist

PROFESSIONAL AFFILIATIONS

National Association of School Psychologists
Washington State Association of School Psychologists
Council for Exceptional Children

SCHOLARSHIPS, AWARDS AND DISTINCTIONS

Washington State Association of School Psychologists, "Best Practices" Award, Nov '98
Practitioner Award for Innovative Practice in the Field of School Psychology
Rachel Royston Permanent Scholarship Foundation recipient, June 1999, June 2001
Award for promising women pursuing graduate studies in education
Tufts University Departmental Scholarship, September 1993

PROFESSIONAL EXPERIENCE

Predoctoral Intern, University of Washington Parenting Clinic (9/01-present)

Currently fulfilling requirements for predoctoral internship for psychologist licensure with the Incredible Years Child, Teacher, and Parent training programs at the Parenting Clinic. Delivering empirically validated school-based interventions to address the needs of diverse families. Responsibilities include leading the Dinosaur Social Skills Program for children in kindergarten and first grade, emphasizing social problem solving, anger management and conflict resolution in collaboration with teachers and parents. Responsibilities also include co-leading weekly parenting groups for high-risk families and conducting parent interviews and child assessments during pre-and post-intervention phases.

Behavioral Specialist, Issaquah School District (9/01-2/02)

Conducted Functional Behavioral Assessments and facilitated behavioral support planning for high school students expelled or suspended from school.

Teaching Assistant, University of Washington (9/99-12/00)

Supervised masters-level school psychologists in training. Responsibilities included teaching portions of classes in social-emotional assessment, educational assessment, consultation, and intervention, and facilitating students' mastery of related assessment activities.

Trainer, Sound Partners Early Literacy Program (8/00-6/01)

Conducted training sessions for volunteers and school staff participating in the one-to-one tutoring program promoting early literacy skills in young elementary students.

Intervention Specialist/School Psychologist, Puyallup School District (9/96-6/99)

Collaborated with parents and school personnel in promoting an optimal learning environment for students. Utilized consultative problem solving model to assess student learning needs and design appropriate interventions. Conducted functional behavioral assessments and facilitated comprehensive behavior support planning to reduce problematic behaviors and increase positive alternative behaviors for students with moderate to severe developmental/behavioral disabilities. Conducted full cognitive, academic, social-emotional, and behavioral assessments and presented results in comprehensive reports and in conference with parents and teachers. Facilitated team decision-making regarding special education entitlement decisions. Led school-wide classroom guidance program based on state essential learning requirements for social/emotional, educational, and career development. Participated in district-wide task forces for aligning

assessment practices with federal and state regulations, and classroom guidance curriculum with state essential learning requirements.

School Psych Intern, Belmont Schools/Parents' and Childrens' Services (9/95-6/96)

1,200 hours of supervised experience in elementary/middle school setting and community mental health setting. Provided individual, group, and conjoint family counseling to children and families weekly. Conducted full cognitive, academic, social-emotional and behavioral assessments and presented results to parents and teachers. Participated in Early Screening Program for Boston's Homeless Children, and attended weekly and bi-monthly seminars on assessment, play therapy, group counseling, disabilities, diversity, child advocacy, and legislative changes.

School Psychology Practicum Student, Wellesley Public Schools (9/94-9/95)

600 hours of supervised experience as practicum student in elementary school. Led therapeutic individual/group counseling interventions, participated in classroom social competency program, observed parent support group. Conducted full psychological assessments, consulted with teachers and parents to address student needs. Trained in Early Reading Intervention program and assisted in implementation with first grade students.

Teaching Assistant, Dr. Caroline Wandle, Tufts University (9/94-6/95

Conducted literature reviews, organized certification/training materials for students, assisted in proposal for APA accredited doctoral program, facilitated monthly departmental colloquia.

School Psychology Prepracticum Student, Cambridge Public Schools (9/93-9/94)

150 hours of supervised experience as prepracticum student in elementary school.

RESEARCH EXPERIENCE

Research Assistant, Positive Behavioral Support Project, University of Washington (9/01-6/02)

Consulted with school-based teams to conduct Functional Behavioral Assessments (FBAs) and to facilitate Behavioral Consultation with school staff for students exhibiting chronic behavioral challenges. Worked collaboratively with University-based research team to evaluate the efficacy of the FBA approach compared to the traditional Behavioral Consultation approach. Currently conducting analyses for doctoral dissertation investigating the impact of group communication in this collaborative process on child treatment outcomes.

Student Responsive Service Delivery, Pilot Site Project (9/98-6/00)

Participation in local project to pilot a collaborative problem-solving approach to the provision of school psychological services, using curriculum-based measurement and functional behavioral assessments to design appropriate interventions and promote data-based decision-making regarding services for students.

Curriculum-based Measurement Task Force, Puyallup School District (9/97-6/99)

Facilitated a within-district project designed to explore alternative assessment models and enhance assessment and intervention activities to students. Investigated curriculum-based measurement, criterion-referenced assessment, and functional behavioral assessment approaches, and incorporated assessment activities into practice as a school psychologist. Presented information to colleagues within district and facilitated opportunities for additional training.

Consultant, Cambridge Public Schools Office of Assessment (9/94-6/95)

Interviewed founders and current members of Cambridge Partnership for Public Education, a cooperative school-business venture for promoting school-to-work training opportunities for students. Qualitatively analyzed data, summarized, and reported results.

Test Administrator, Psychological Corporation/American Guidance Service (93-99)

Participated in standardization/tryout studies of CASL, WIAT-II, ILS, WMSC, DAS, PPVT-III.

PRESENTATIONS/PUBLICATIONS

Gardinier, T., Gastil, J., Black, L., & Moscovitz, K. (2000). *Democratic deliberation and decision quality.* Submitted for publication to Communication Studies.

Gastil, J., Black, L., & Moscovitz, K. (2001). *Ideology, attitude change, and deliberation in small groups.* Submitted for publication to Political Communication.

Moscovitz, K. (2003). The effects of group communication processes on treatment outcomes in school-based problem solving teams. Unpublished dissertation. University of Washington. Seattle, WA.

Moscovitz, K. (2000). *School-Based Consultation: An analysis of the verbal interactions in a collaborative problem solving model.* Presented at the University of Washington in partial fulfillment of doctoral program requirements for Research and Inquiry phase.

Moscovitz, K. (2000, 2001). *Curriculum-based measurement and its use in a problem solving mode*l. Presentation at the University of Washington to the school psychology masters students.

Elliott, E., Johnson, M., Moscovitz, K., Peterson, L., Sack, D., Schulz, K. (1998). *Curriculum-based measurement task force: Alternative approaches to the provision of school psychological services in Puyallup.* Panel presentation at the Washington State Association of School Psychologists Summer Institute, July, 1998.

Krusky, K.L. (1995). *Family-oriented school psychology practice: A proposal for expanding the role of school psychologists.* In C.H. Wandle (chair) Perspectives on the Future by Future School Psychologists. Panel presentation at the National Association of School Psychologists Conference, Chicago, IL: March 1995.

Krusky, K.L. (1992). *Coping with stress: an analysis of situational and dispositional coping styles.* Unpublished senior honors thesis at the University of Western Ontario.