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Effects of Problem Solving Team Processes on Student Outcomes

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EFFECTS OF PROBLEM SOLVING TEAM PROCESSES ON STUDENT OUTCOMES

An Abstract of a Thesis

Submitted

in Partial Fulfillment

of the Requirements for the Degree

Educational Specialist

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University of Northern Iowa

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ABSTRACT

Systematic data collection and case documentation are vital components in the consultative problem solving process. Carefully documented and easily understood data allow problem solving teams to make informed decisions about intervention development and implementation, as well as future programming for struggling students. The Instructional Consultation (IC) Team Model was developed as an organized and efficient process for conducting pre-referral problem solving (Rosenfield, 1987). The present research explores the relationship between processes and/or procedures as prescribed by the IC Team Model and student outcomes. Processes utilized by problem solving teams following the IC Team Model and other models of problem solving are compared. The results of this study demonstrated that IC teams implement more of the critical steps in the problem solving process than non-IC teams. Teams that meet more frequently and teams that have specific steps for collecting and recording data are more likely to continue interventions rather than terminate because of success or IEP consideration.

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INTRODUCTION

Discussion surrounding consultation in educational settings is on the rise. Increasingly, consultation is being recommended as a strategy for delivering intervention services to students struggling to meet expectations. However, exactly what defines consultation is unclear. At its most basic, consultation can be seen as any type of interaction among two or more professionals, ranging from a few minutes of casual advice to more formalized training over several weeks or months (Green & Shinn, 1990). When considering school-based consultation, though, the bottom line is clear. Experts agree that improved student outcomes are the major purpose of consultation in the educational setting (Green & Shinn). Consultation essentially enhances services to clients and empowers consultees.

One purpose of consultation is solving a problem. Consultation supports a problem solving process. The main focus of the consulting relationship is to give the consultee the tools he/she needs to help the client. Consultants work in unison with consultees on a more level playing field. While the consultant may or may not be seen as an "expert" in the area of concern, he/she generally does not take an authoritative role in the relationship. Open and equal communication is primary to the success of the consultation relationship (Brown, Pryzwansky, & Schulte, 2001).

Specific requirements under No Child Left Behind (NCLB) focus on embedded professional development, increased alignment of curriculum and instruction with standards, and adoption of empirically based programs. A major emphasis is placed on professional development to support improved teacher quality and academic success of

students. Additionally, the need for intervention services prior to consideration for special education services has been re-emphasized in the recent revision of Individuals with Disabilities Education Improvement Act (IDEA, 2004).

The present research will explore the relationship between processes and/or procedures as prescribed by the IC Team Model and student outcomes. Processes utilized by problem solving teams following the IC Team Model and other models of problem solving will be compared. First, models of consultation will be overviewed and a general problem solving process presented as it intersects with consultation. Processes specific to the IC Team Model will be discussed and empirical work related to the outcomes of consultation and the problem solving process will be reviewed. Next, methods and results of the study will be presented. Finally, implications of the results and suggestions for future research will be discussed.

Models of Consultation

Interest in consultation has been gaining momentum in recent years as helping professionals increasingly look to each other in developing and implementing interventions for clients. Historically, teachers have not utilized collaboration in their profession, often working in isolation, not realizing how colleagues could be valuable resources for improving instruction. However, collaboration and consultation supporting educators' reflective activities are basic to the well being of students (Rosenfield, 2002). As children with special needs are increasingly spending more time in the general education classrooms, more collaboration, information and responsibility sharing becomes necessary among teachers and support staff (Kerwin, 1995). Such collaboration

can be effectively accomplished through consultation. Over the years, three major models of consultation have developed: mental health consultation (Caplanian), behavioral consultation, and organizational consultation. The fourth model of consultation discussed here, instructional consultation, has been developed in more recent years. These models have been researched and modified and are now being applied in school settings as the push for consultation surges through education.

Mental health consultation. The early roots of human service consultation can be traced back to medicine in the 13th century. Being used widely by the 19th century, clinical consultation involved a specialist examining the patient, prescribing treatment, then leaving the physician to implement and monitor the treatment plan. Although the clinical model of consultation declined over the years, such practice is still continued today by mental health consultants (Brown et al., 2001).

Mental health consultation has been developed over the years by psychiatrist, Gerald Caplan. In his definition of mental health consultation, Caplan (1970) wrote that consultation is a process of interaction between two professionals, one being the consultee and the other the consultant or specialist. In effect, the consultee is seeking help from the consultant on a current work problem the consultee feels is within the consultant's area of specialized expertise. More specifically, Caplan views consultation as occurring between professionals about a client.

Caplan (1970) identified four types of consultation in his model: client-centered, consultee-centered, program-centered and consultee-centered administrative consultation. First, client-centered consultation is prescriptive in nature, focusing on the consultee's

management of a client or group of clients for whom he or she is responsible. The consultant in effect examines the client and provides information to the consultee so that he or she can take care of the client. The second type of consultation in the mental health model is consultee-centered consultation. Still concerned with the consultee's management of the client, the focus is shifted to the consultee, with the client concerns being secondary. The goal is to improve the consultee's skills by focusing on his or her difficulties in dealing with the client in question. Thirdly, program-centered administrative consultation essentially involves the consultant working as an expert in mental health and social systems. The consultant provides recommendations for program development or administrative concerns for certain agencies. The last type of consultation highlighted by Caplan is consultee-centered administrative consultation. The focus of this approach is on increasing consultee effectiveness to organizational concerns rather than relying on consultants' solutions.

Caplan (1970) has identified five basic assumptions to mental health consultation. First, emphasis is placed on intrapsychic and environmental factors that affect behavior change. Specifically, mental health consultation focuses on consultee feelings, attitudes and beliefs important in behavior change. Assessment might encompass characteristics of the client, communication between the consultee and the client, consultee skill level, consultee perceptions and attitudes, organizational factors, or community concerns. Overall, this focus on environmental factors is in alignment with current systems frameworks of consultation.

A second assumption of mental health consultation is that the consultant needs more than just technical experience to develop and implement effective interventions. In other words, because interventions are most often carried out and monitored by consultees, the consultees should in fact lead the decision-making process with guidance from the consultant. Consultants often find it difficult to design interventions appropriate for consultees from other organizations or professions. Thus, by having the consultee involved in the process, the intervention will better suit the consultee situation (Brown et al., 2001).

Involvement of the consultees leads to the third assumption of mental health consultation, which is that consultees learn more and are better able to generalize their skills to other situations when they are actually responsible for the consultation process. In his model, Caplan (1970) suggests only brief involvement of the consultant in order to encourage consultees to learn to manage problems independently. Further, consultees' attitudes affect how they use the learned skills. If they do not see value in the whole process, they will likely not use the skills even if they are proficient in doing so. Specifically, if consultees cannot see the situation objectively or a particular strategy does not fit with their belief system, consultees are more likely to not utilize a skill they have learned in the consultation process (Caplan, 1970). The current model of mental health consultation is quite collaborative in the sense that consultants not only take a direct role in the intervention, but take on more responsibility for the outcome as well (Kerwin, 1995).

Another assumption of the mental health model of consultation is that it supplements other methods of problem solving within an organization. According to Caplan (1970), problems with clients can be solved through a variety of mechanisms, not only consultation. After all, consultation, in his view, is a process designed to increase the consultee's capacity to do what they already know. In other words, Caplan suggests consultees possess the skills needed to perform their professional duties but are often blocked by other factors. Therefore, consultants actively work to refer some types of problems to more appropriate persons within an organization.

The last assumption attributed to this model of consultation is that of "using a displacement object" to solve a consultee's problem (Caplan & Caplan, 1993). While consultee attitudes are important to the process, they cannot be dealt with directly. Instead, the consultant works to form hypotheses about issues interfering with the consultee's ability to function. The consultant effectively helps the consultee resolve the issue by simultaneously dealing with the work problem and the personal conflict (Brown et al., 2001).

Meyers (2002) has developed a model of mental health consultation that empowers the consultee, or in a school setting, the teacher, by emphasizing indirect service to the child along with methods to prevent the development of learning and adjustment problems. Research has shown that consultation results in improved skills for teachers, generalization of skills, modified teacher attitudes relative to the problems of students, increased understanding by teachers of problems faced by children, increased academic performance and reduced special education referral rates (Meyers, 1995).

In attempt to focus on the school setting, Meyers replaced Caplan's four types of consultation with three levels of service varying in terms of how directly services are provided to the student by the consultant. In Meyers' adjusted model of mental health consultation, he identifies Level I as focusing on the child or helping the teacher develop a strategy for dealing with a specific student problem. Level II focuses on the teacher, or helping the teacher modify instructional strategies to help all students with a particular difficulty learn in the classroom. Level III focuses on the whole system, or the consultant helping to develop a professional development activity for school staff addressing a particular problem or difficulty (Meyers, Brent, Faherty & Modafferi, 1993).

Behavioral consultation. Over the years, a number of models of consultation have been developed based on behavioral psychology. However, behavioral consultation is typically divided into two main models, the operant learning theory and the social learning theory (SLM). Both models rely upon a problem solving approach to consultation.

Bergan developed the first model of behavioral consultation based on the operant learning theory in 1977. Having extended and clarified the original model, Bergan and Kratochwill (1990) define consultation as an indirect problem-solving service between the consultant and the consultee wherein the consultant gathers psychological data relative to the consultee's problem then communicates psychological ideas that will enable the consultee to use the data. They identify three goals of consultation: (a) to change a client's behavior; (b) to change the consultee's behavior; and (c) to generate

change in organizations, specifically to improve both problem solving and communication.

Additionally, Bergan (1995) believes that consultation can be either problem-centered or developmental in nature. Isolated behaviors are addressed through the problem-centered approach, reducing time requirements and fitting in with current needs for cost containment. The developmental approach addresses more complex abilities. Such an approach is necessary in order to meet current needs of children and their families. Currently, the behavioral model first established by Bergan and his colleagues has evolved to include parent-based consultation, or conjoint consultation whereby parents and teachers work together to solve problems. Because so much of what happens at home affects school and vice versa, such consultation could potentially increase the effects of interventions across home and school settings (Kerwin, 1995).

Setting this model apart from other models of consultation is the communication technique involved. Specifically, the consultant uses verbal structuring techniques (e.g. forming questions to draw out specific data) and systematic reinforcement to guide consultee responses and encourage the consultee to agree with the consultant's point of view. In other words, the consultant primarily works to increase the likelihood that the consultee will accept the consultant's recommendations (Brown et al., 2001). Such consultant control does not align with other consultation models, which promote collaboration in the consultation process.

The social learning theory model (SLM) of consultation is based on reciprocal determinism or the idea that "human functioning is the result of a dynamic

interrelationship among behaviors, the environment and certain cognitive variables" (Brown et al., 2001, p. 58). These constructs guide the process in the SLM of consultation. While this model reflects a systematic problem-solving model seen in all behavioral approaches, SLM consultants hold two important assumptions. First, the outcomes of the consultation relationship are the result of the interaction of behavior, internal personal factors and environmental factors. Hence, understanding the consultee or client requires that each factor be examined at the same time. Secondly, under the SLM model of consultation the goal of the consultant is to somehow change the relationship between the behavior, the internal psyche and the environment, which is keeping the consultee from effectively dealing with the client. The consultee will then perform the same task with the client to effect change (Brown et al., 2001).

Behavioral approaches to consultation rely on a problem-solving approach to consultation. Additionally, such models accept the empirical tradition of behaviorism. Behavioral consultation is increasingly being applied in school settings as educators have begun implementing problem-solving teams in response to the latest changes with IDEA (2004). While the traditional model of behavioral consultation formulated by Bergan is still used today in school settings, ideas from the social learning theory model are also being incorporated as educators place more emphasis on assessing cognitive processes rather than just overt behavioral issues presented. Both models follow a typical problem-solving process, emphasizing problem identification, assessment of the problem, plan implementation and problem evaluation in some form (Brown et al., 2001).

Organizational consultation. In response to shifting economical and social climates, organizational consultation was developed to help businesses adapt in order to remain competitive in the marketplace. Although similar to the mental health and behavioral models, one major difference in organizational consultation is that the client is typically a business, organization or some subsystem of such, as opposed to the other models' individual or program-oriented approaches (Brown et al., 2001). In the educational setting, organizational consultation focuses on the client as being a school or a school district as a whole system. Broadening the focus presents opportunities for primary prevention as well as risk reduction. For instance, consultants can help a maximum number of students through universal interventions, interventions for groups of at-risk children, and screening strategies to pinpoint children in need of various early interventions (Meyers, 2002).

Currently, the goals of organizational consultation in the schools include improving student performance, along with improved interpersonal functioning. Essentially, organizational consultation comes in to play any time a team is designated to work on a given task. Schmuck (1995) iterated in his research that such team-based consultation would continue to become more and more popular, as is now evidenced by the push for pre-referral interventions and teams of professionals to address those interventions. Although the push is toward systemic changes, the focus of this paper is on problem solving processes at a more individual and/or team level.

Instructional consultation. By definition, instructional consultation integrates instructional practices with classroom management while utilizing consultation

techniques to emphasize the collaborative relationship between teachers and consultants (Brown et. al., 2001). Some describe instructional consultation as a sort of extension of behavioral consultation, applied when the purpose of the consultation is to change or modify teacher behavior in order to enhance the learning of all students in the class (Rosenfield, 1987). The characteristic that may best describe this model of consultation is the focus on actual instructional processes rather than the nature of what is being taught (Hicks, 1999). According to Rosenfield (1987), you cannot have a discussion about students' learning problems without talking about curriculum and instructional methods being used. The instructional consultation model focuses on improving the quality of instruction and ensuring a better match between students and instruction (Kerwin, 1995).

This model of consultation is essentially a stage-based problem-solving process bringing team members together to focus on school-based academic and behavioral concerns. Instructional Consultation (IC) teams directly confront existing school culture by bringing together a diverse group of professionals skilled in and committed to a change (Gravois, Knotek, & Babinski, 2002). While not a quick fix to teachers' every day classroom dilemmas, the IC Team Model offers excellent resources and guidance to organizational change toward more collaborative teaching and problem solving. Research clearly shows the need for working with teachers to help them provide quality instruction to all children (Rosenfield, 1992).

Further, research provides evidence that the most effective results are seen when consultants work with teachers on a number of occasions over a period of time rather than presenting a new concept at a one-time professional development. "IC teams

represent a system of early intervention with a primary focus on resolving student learning and behavioral concerns within the general education classroom by offering support to teachers" (Gravois, Knotek, & Babinski, 2002, p. 116). Through the consultation-based service delivery system, each team member works to develop and apply consultation skills by serving as a case manager to an individual teacher. This structure shifts the focus away from group or team problem solving, moving toward more of a consultant-consultee relationship (Gravois, Knotek, & Babinski, 2002). Case mangers are given the responsibility to meet with the students' teachers to develop and implement interventions in the classroom to address the presenting problem(s). Therefore, instructional consultation is a potentially powerful in-service training opportunity for both the consultant and the consultees or teachers (Rosenfield, 1992).

According to one study, even though 69% of states mandate some type of prereferral intervention process and roughly 86% require or recommend prereferral intervention teams, very few states provide direction about how to implement such services (Truscott et al., 2005). In response to educators' requests for help in developing alternative service-delivery systems, the IC Team model was developed. Building upon literature surrounding school-based teams, the IC Team model was essentially developed recognizing that schools often require greater structure for service delivery. "Functional teams have members who are skilled in and share clearly articulated processes of problem solving" (Rosenfield & Gravois, 1999, p. 1026). Delivery of the consultation process is through individual team members or case managers, including, but not limited to administrators, general education teachers, special education teachers, specialists such

as reading teachers or librarians, guidance counselors, at-risk personnel and/or support services staff from other agencies (e.g. school psychologists, school social workers, etc.). The idea is that by bringing all these "specialists" together on one team, brainstorming, problem solving and decision making will be more efficient and effective (Rosenfield & Gravois, 1999).

Instructional consultation teams operate under three critical assumptions: (a) all students are learners; (b) focus on instructional match, not place; and (c) build a problem solving learning community in the school. Napoleon Hill (1990) once wrote, "Whatever the mind of man can conceive and believe, it can achieve," which gets at the heart of the first critical assumption of the IC Team Model. Traditionally in education, problem solving efforts have been dominated by "why" questions with student-centered interventions. With the IC Team model, "what" and "how" questions dominate the analysis with interventions targeted at students, parents, teachers, peers, and instruction (Gravois, Rosenfield & Gickling, 2003). Team members focus their attention on student gains, successful interventions and follow-up possibilities by collaboratively brainstorming ideas to help the students experience success in some form. The teams view all students as potential learners. Simply put, "the focus should be on facilitating learning for all students, not on documenting learning failures" (Rosenfield & Gravois, 1996, p. 16).

Secondly, the teams do not focus on the referred child separate from the task and the instruction. Rather than focus on the deficits of a student, the team instead turns its attention to the classroom environment and delivery of instruction. One goal of IC Teams

is to utilize data for classroom and school decisions (Gravois, Rosenfield & Gickling, 2003). Without concrete evidence, making informed decisions is virtually impossible. IC Teams shift from examining fixed input variables, like intelligence, to evaluating how outcomes can be improved in learner-centered terms (Rosenfield & Gravois, 1996).

The third assumption of the IC Model is that a problem solving community must be built within the school. "When the school itself becomes a learning community for faculty and staff, it can more easily succeed in providing a strong learning community for students" (Rosenfield & Gravois, 1996, p. 16). "Many innovations in schools fail because their critical components are never implemented with integrity" (Fudell, 1992, as cited in Rosenfield & Gravois, 1996, p. 19).

Instructional consultation is not unlike other models in basic structures and process. Like the other models dealing with client-centered and/or systems-based models, instructional consultation also functions at various levels, depending on the needs being addressed. Direct service to the client might occur when a child is being assessed, interviewed or observed in order to collect data for decision-making. Indirect service to the client occurs through the teacher or consultee when they collaborate with the consultant in developing and implementing interventions. Service to the consultee occurs when a desired change in consultee behavior is implemented with the idea that such change will positively impact student performance. Finally, services to the system take place when changes in the school structure lead to improved organizational functioning of the system as a whole (Rosenfield, 1992).

The IC Team Model integrates the research of behavioral and consultee-centered consultation with instructional and learning theory to produce a collaborative, structured and data-driven consultation process (Gravois & Rosenfield, 2002). Educators must continually work to discover effective teaching strategies for a variety of struggling students. This effort can be more easily accomplished through a team approach, as presented through the IC team model. Teachers are provided an opportunity to reflect on their own professional growth, altering teaching practices, ultimately improving performance of the student or students of concern (Gravois & Rosenfield, 2002). Instructional consultation teams are designed to provide systematic support to teachers through an "Instructional Consultation Case Management Model." Additionally, the Model assists in aligning school resources for both student and teacher support (Gravois, Rosenfield & Gickling, 2002). Through this data-driven, problem-solving process, teachers essentially put to use some of the same problem solving strategies they may in fact be teaching their students.

Developers of the IC Team Model cite a number of reasons a school might consider implementing this model. First, the IC Team Model is research-based, demonstrating improved achievement, both academically and behaviorally for students within the general education classroom (Gravois, Rosenfield & Gickling, 2002). The Model provides a data-based academic intervention process for students who do not meet expected standards. Such consultation is designed to identify potential problems, develop interventions and, based on the data, determine whether the interventions or change in instruction produce desired improvements in student performance (Green & Shinn,

1990). Professional development for staff in the areas of assessment, instruction and collaborative problem solving is embedded in the Model. Additionally, resources are maximized through coordinated, goal-directed service delivery for students and teachers. And, finally, the IC Team Model enables schools to recapture resources by reducing inappropriate referrals and addressing over-identification for special education services (Gravois, Rosenfield & Gickling, 2002).

Problem Solving Process

A generic view of problem solving might be characterized by an individual's response to the environment. "Problem solving occurs when people act to reduce the discrepancy between 'what they want and what they get'" (Deno, 2005, p. 11). Discrepancies between students' present levels of development and the desired level of development drive problem solving in the education setting. Essentially, a problem exists when a discrepancy is perceived. Problem solving then refers to activities designed to reduce or eliminate the discrepancies (Deno, 2005).

Systematic problem solving in the school setting requires a structure that supports the process. The system might involve a formal structure with specific forms and processes to document each step or be more informal with regular discussions about student academic and behavioral problems. Two major models of problem solving have been identified. First, teams with broad participation and problem-solving approaches place the initiative for action in the hands of general education teachers. The second, more formal model of team problem solving emphasizes consultative approaches whereby a specialist becomes the key provider to the referring general education teacher

(Telzrow, McNamara & Hollinger, 2000). In either case, utilizing a problem-solving model in schools is a matter of applying a structure to the process, based on a clear understanding of the presenting problem. Further, the process is a general approach to intervention planning and implementation, not something applied intermittently to select individual students. The overall goal of such processes is to reduce the gap between the behaviors or skills a student currently has and the level he or she is expected to achieve (O'Reilly & Tobin, 2005).

Team problem solving in the school setting is quite varied. Multidisciplinary teams focusing on the tasks of diagnosis and special education placement were mandated as the decision-making body for special education entitlement in 1975. However, recent team problem solving focuses more on intervention planning. Teams may be referred to as pre-referral teams, building assistance teams, teacher assistance teams, student assistance teams, or simply problem solving teams. No matter what the team is called, the goal remains the same: to plan and implement interventions to help children be successful in the general education curriculum (Iverson, 2002).

Although authors differ in the characterization of stages, research supports the idea that viewing consultation as a problem-solving model with specific stages is most helpful. Practical models of problem solving generally consist of five steps: (a) identifying the problem to be solved, (b) defining the problem, (c) exploring alternative solutions, (d) applying the chosen solution, and (e) looking at the effects. Common to all models of problem solving, these five basic steps help clarify and sequence decision-making in the problem solving process (Deno, 2005). Aligned with that process, the IC

Team Model places particular emphasis on systematically collecting data and relying on that data for decision making throughout the process. Each stage in the IC Team Model of problem solving defines specific tasks to be accomplished before moving on to the next stage (Rosenfield & Gravois, 1996).

Instructional Consultation Process

The Instructional Consultation Model is one example of the move toward a more systemic consultation service delivery system (Gravois & Rosenfield, 2002). Because the focus of this paper surrounds the IC Team Model, the general consultation process described below is derived mainly from the work of Rosenfield (1996) and her colleagues as well as literature surrounding instructional consultation. The IC Team Model of problem solving follows four important steps in addressing concerns: (1) entry and contracting, (2) problem identification and analysis, (3) implementation of interventions and (4) termination (Rosenfield, 1987).

Entry and contracting. All of the initial interactions in the consultation process really serve as a foundation for a working alliance. The rapport the consultant, or in this case the case manager, develops with the consultee, in this case the teacher, will essentially be a factor in the success or demise of the consultation process. One key element for successful consultation is that there must be an "authentic working relationship between partners in the process" (Rosenfield & Gravois, 1996, p. 22). Such working relations must be developed early on, generally during the entry/contracting phase of the process. The ability to establish and then maintain working alliances stands out as a key factor during the entry and relationship building phases of the consultation

process. All other skills and characteristics seem somehow interrelated or perhaps play a role in the development of these important partnerships.

Additionally, the entry/contracting phase of the consultation process gives those involved the opportunity to delineate responsibilities as problem solving gets underway. The teacher and the case manager must both understand the process and accept responsibility in the process. Often, teachers assume the case manager will take the lead in determining and resolving the problem. Case managers must be clear during entry/contracting that the process is a team effort with the teacher often taking the lead role, and the case manager serving as a support person in development and charting of interventions. By utilizing active listening skills such as reflection, the case manager can communicate to the teacher that both the verbal message and the affective content of the message have been heard. Additionally, keeping the lines of communication open and clear is important to be sure both parties are on the same page, with the same understanding of the tasks at hand (Brown et al., 2001).

Lastly, keeping the focus on the client is important to convey to the teacher. Many times, case managers find themselves in more of a "counseling" role as teachers discuss their own feelings of frustration or failure. When this begins to happen, the effective case manager will use strategies like supportive refocus to turn the discussion back to the student. A case manager's ability to successfully refocus the conversation will greatly depend on the level of rapport developed during the entry/contracting phase of the process (Rosenfield & Gravois, 1996).

Problem identification and analysis. No matter which consultation model you choose to follow, two important steps are common. In fact, problem identification and problem analysis are fundamental to any problem solving consultation process. Without these two factors consultants cannot fully understand the presenting problem or even begin to effectively offer assistance with solutions. Collecting baseline data helps to determine the severity of the problem and contributes to formulating alternative interventions. Additionally, data-based problem identification provides insight into whether the problem is student specific or systemic in nature (Green & Shinn, 1990).

The consultant or case manager along with the consultee or teacher will engage in a variety of information-gathering activities during this identification phase. Through record reviews, observations, interviews and various assessments, they can develop a more holistic picture of the student and presenting problem. Overall, throughout the process, the focus must remain on the entire system in great detail, not only on the student's performance and/or behavior (Rosenfield, 1987).

During the problem identification phase of the problem solving process, the case manager works with the teacher to determine the desired outcome of the consultation process. The "objectives should identify the client; specify the outcomes (changes) in measurable terms; establish an objective level of performance, either an increase or decrease; identify the conditions where, when and with whom the outcome is expected to occur; and establish a date by which the behavior is expected to be performed" (Brown et al., 2001, p. 52). Typically, the case manager will ask questions and seek out information to identify areas of concern and begin to brainstorm ideas toward resolution. Effective

interviews and classroom observations both play a valuable role in gathering important data during problem identification.

The problem analysis phase of the problem solving process moves the discussion toward "identifying variables that will lead to problem resolution" (Brown et al., 2001, p. 54). Bergan and Kratochwill (1990) have suggested focusing on variables in the setting that may contribute to the problem and skill deficits of the student. During this phase the case manager will work with the teacher to dig deeper for information regarding the student and the problem that has been brought to the table. Curriculum-based assessments (CBA) provide answers to questions raised about a child's academic problems by determining expectations of the child and providing a valuable error analysis. By examining a student's errors, a pattern will often emerge possibly signaling a deficiency in the instruction. After all, "determining the type of error the child makes in individual cases is prerequisite to planning appropriate interventions" (Rosenfield, 1987, p. 15-6).

Intervention implementation. General education interventions play a very important role in today's educational system. General education interventions are an integrated part of multi-sensory teaching and/or differentiated instruction, which foster learning in more diverse groups of children. Interventions serve as a precursor to special education services. Research has shown that effective implementation of general education intervention programs has significantly improved the number of appropriate referrals to special education. Additionally, such effective programs encourage teacher and support staff collaboration, in both general education and special education (Gravois, Rosenfield & Gickling, 1999).

After data have been collected in the problem identification stage, instructional interventions are developed and implemented with the child in the least restrictive environment, which for most children is the general education classroom setting. The case manager must work closely with the classroom teacher to examine the data and develop a few high quality interventions, which can be easily implemented in the classroom. Essentially, the intervention must meet two criteria: (a) enable the child to make progress; and (b) be accepted by those responsible for implementing and monitoring the intervention, typically the teachers (Rosenfield, 1987). Consultees are more likely to carry out interventions they help formulate. Therefore, they should be involved heavily in the development of intervention alternatives and final implementation of the chosen intervention (Green & Shinn, 1990).

Three diagnostic questions come in to play when considering possible interventions. First, is there a discrepancy requiring a special plan? Assessment data gathered during the problem identification stage provide valuable information in answering this question. Second, is the child being given work at an instructional level or a level at which the child is able to complete the work with minimal assistance? The case manager must work with the teacher to keep the focus on the child's needs. A child cannot be expected to make progress if not given materials at an instructional level. The last question to consider in developing an effective intervention involves the effectiveness of the current instructional program. How effective is the current instructional program? If determined ineffective, the case manager along with the teacher must look at four areas of the program for possible manipulation: work setting, curricular

materials, instructional procedure and the arrangement of consequences based on performance (Rosenfield, 1987).

Prior to implementing the intervention, a desired goal must be determined. Student progress during the intervention stage of consultation should be monitored on a regular basis in order to determine whether the intervention is effective. The case manager and teacher must determine appropriate intervals to measure progress, at least weekly. Students' rate of progress can only be measured by collecting such data. If the data show that the student is not improving or making progress towards the desired goal, the intervention should be modified to strengthen treatment and boost intervention effects (Green & Shinn, 1990).

Research has shown a need for working with educators on developing quality instruction and educational programs for all children, and especially those in need of more assistance to realize academic success (Rosenfield, 1987). Some teachers tend to view the intervention process as tedious and time-consuming. With the problem solving process embedded in the IC Team Model, one might argue that general education interventions could actually promote more active learning both for the teachers and students. For example, teachers are challenged to collaboratively identify problem areas, then develop and implement creative intervention programs to stimulate and motivate their students. Similarly, the students are challenged to put effective learning and studying strategies to use as they actively participate in their own intervention programs. Ongoing consultation is critical during this stage of the consultation process. The consultant or case manager must assist consultees or teachers by supporting them as they

attempt new procedures and ensuring the interventions discussed are being implemented appropriately (Rosenfield, 1987).

Termination. The termination stage is essentially the last stage in the consultation process, bringing all the work to an end. In the case of the IC Team Model, this last stage occurs either by realizing successful classroom interventions or by determining more intensive support is needed to help the student succeed. In most cases, such supports are provided through specialized services or special education. A final report or summary should be written to bring all the data together, providing a written record of findings and program recommendations.

Support for the Instructional Consultation Model

Historically, multidisciplinary teams processed referral problems from a diagnostic or administrative perspective, the typical "test and place" approach to problem solving. Either the student was determined to have a disability or the child qualified for special education. However, with problem solving teams, the decision frame changes to focus on intervention design, with which most team members are not familiar. Research has suggested one of the major underpinnings of quality problem-solving teams is a systematic decision making process. Group process skills must be used by all team members but are often unknown or even overlooked. Effective processes make a big difference on whether team members effectively develop interventions and feel their time has been worthwhile (Iverson, 2002).

Although problem-solving approaches have been influential in shaping assessment and consultation in educational settings for almost a decade, researchers have

only recently begun investigating the processes affecting success of problem-solving teams. Difficulties in measurement and research design in applied settings make examination of school-based teams difficult. A number of studies have examined key aspects of effective teams such as team composition (e.g. Huebner & Hahn, 1990; Fullan, 1991; Rosenfield & Gravois, 1996), team problem solving and collaboration (e.g. Ott, 1993), team communication (e.g. Kuralt, Hanson & Rosenfield, 1987), and team size (e.g. Maeroff, 1993; Thousand & Villa, 1992).

Telzrow, McNamara, and Hollinger (2000) examined the relationship between problem solving process and student outcomes. The Intervention Based Assessment (IBA) problem solving approach was the focus of the study. Combining a collaborative approach with problem-solving activities, the IBA approach encompasses features of behavioral consultation. This approach employs problem-solving components frequently identified as being critical for the design of effective interventions, such as defining the problem, collecting baseline data, clearly identifying a goal, developing a systematic intervention plan, collecting evidence of treatment integrity and data indicating student response to interventions.

Using two types of instruments, Telzrow et al. (2000) analyzed data for 227 multidisciplinary teams approved by the Ohio Department of Education to conduct IBA, during the 1996-1997 school year. Using a Likert scale and scoring rubric along with the required method of case documentation, Problem Solving Worksheets, researchers evaluated the fidelity of problem-solving implementation and student outcomes, essentially finding that reliable implementation of problem solving was not achieved. The

data reflected statistically significant relationships between student outcome and mean fidelity ratings for six of the eight problem-solving components, however, the magnitude of the relationships was modest and targeted student goals were not achieved or exceeded (Telzrow, McNamara, & Hollinger, 2000).

The emphasis on the process of implementation is one key component setting the IC Team Model apart from other models of problem solving. By assessing the degree of utilization of the IC Team Model through the Concerns-Based Adoption Model (CBAM), Kuralt (1990) found that the implementation of the IC Team Model aided schools in serving a greater number of teachers and students, provided a wider range of services and significantly redirected the collaborative professional effort toward classroom implementation of effective instructional strategies.

Subjects included elementary multi-disciplinary teams in five northeastern rural-suburban school districts. At the beginning of the study, a traditional model of referral was in place. A comprehensive field-based staff development treatment package was implemented over a two-year period in attempt to achieve system-wide institutionalization of a consultation-based service delivery system. Additionally, the study was designed to demonstrate the potential of team-based consultation models for increasing achievement of referred students (Kuralt, 1990).

In addition to providing a much needed model of field-based training, specific findings from this research concluded that students served through a collaborative team model made significant gains in reading comprehension. Further, referrals for special education evaluation were reduced (Kuralt, 1990).

In an examination of a Pennsylvania initiative to train and implement teams, Fudell (1992) found that the degree to which teams implemented the Project Link model increased as the team continued to develop skills. Additionally, Fudell (1992) discovered a significant positive relationship between the degree of implementation and utilization of specific team forms. Team members accurately using forms to document the problem-solving process tended to have higher implementation of the critical dimensions of the model, reinforcing the need to develop appropriate organizing structures to support the process skills being implemented by team members.

Present Research

The IC Team Model is a complex process resulting in a total school restructuring, involving multiple individuals and multiple processes. Instructional Consultation is about matching students and instruction, as well as teachers' rights to consult on tough issues. Above all, the concept of IC Teams "is based on a paradigm of individual differences that is not yet the dominant conception of the etiology of behavioral and academic problems" (Rosenfield & Gravois, 1996, p. 1). Overall, the goal of an IC team is "to enhance, improve and increase student and staff performance" (Gravois, Rosenfield & Gickling, 2002, p. A-1). This goal is realized through systematic support within the building, comprehensive enhancement of teachers' skills in instructional assessment, development of school-wide norms of collaboration and problem solving and utilization of data for decision-making (Gravois, Rosenfield & Gickling, 2002).

"Best practice in problem solving is data-driven" (Rosenfield, 2002, p. 610). Gathering of systematic data for instructional decision-making is a required component

of instructional consultation and best practice for all problem-solving models. Throughout the process, formal, written documentation is kept regarding intervention development and outcomes in order to foster follow-up efforts and to increase accountability, even when empirically supported interventions are used. On-going monitoring allows school-based teams to make informed decisions relative to effective programming for struggling students. Moreover, formative evaluation of interventions as they are implemented allows problem solving teams to make informed decisions on next steps to further the success of the interventions. Baseline comparison and intervention data are necessary to determine the effectiveness of the intervention and possibly the need to change the intervention design due to lack of progress (Rosenfield, 2002). Through an organized process, problems can be assessed directly and systematically rather than through inferential statements based on assessment data. Team decisions can be monitored and objectively evaluated more easily when data is current and readily available (O'Reilly & Tobin, 2005).

The present research will explore the relationship between processes and/or procedures as prescribed by the IC Team Model and student outcomes. Processes utilized by problem solving teams following the IC Team Model and other models of problem solving will be compared. Based on a review of the literature, I hypothesize that the processes used by IC teams will be more structured and consistent than those of other problem solving teams, and that the structure and consistency of the Instructional Consultation Model of problem solving will lead to more positive outcomes for students.

METHODS

In the summer of 2003, local education agency teams in the area were invited to take part in a training opportunity to learn more about the IC Team Model and implementing said model in their buildings. Todd Gravois led the intense, two-day training, sharing research and walking teams through the step-by-step process of the IC Team Model. Area education agency (AEA) staff then provided follow-up support and further training opportunities for IC Team facilitators. Follow up trainings included a two-day training provided the following summer by the AEA staff along with Todd Gravois' assistant, Lauren Costas to those teams who attended the initial training with Todd Gravois. A three-day summer training for school teams was offered in 2005, with a follow up meeting in the fall. The training focused on the general education intervention process as required by the rules of special education. In addition to the two summer training opportunities, every district in the area was invited to take part in a monthly meeting for team facilitators to collaborate, share and gain new information. Topics varied from meeting to meeting, but generally focused on a specific content area or intervention. Attendees were also given opportunities to review specific cases for further problem solving assistance.

Since that initial training with Todd Gravois, a number of teams have continued to follow the IC Team Model and develop staff skills to improve team implementation. Other teams have opted to follow more generic models of problem solving or develop their own processes for pre-referral problem solving. As a result, more recent monthly team development opportunities provided by the AEA have been geared toward the

general early intervention problem solving process versus the specifics of the IC Team Model.

For the present research, IC teams and non-IC teams were identified and evaluated to determine components of the problem solving process utilized, and whether one type of team was more effective by looking at outcomes for students in terms of success (interventions worked, student continued in general education setting with little to no support), continuation (interventions were showing progress, student to continue with interventions into the next school year) or IEP (interventions were not effective or interventions were too intensive to be sustained in a general education environment, student referred on for comprehensive evaluation to determine eligibility for special education support services). Secondly, data were collected relative to the extent to which the teams engaged in the essential components of the IC process. This served two purposes: first it allowed validation of the identification of IC and non-IC Teams (IC teams would be expected to engage in more of the components than non-IC teams) and it allowed investigation of the extent to which individual components of the process are related to student outcomes.

Procedures

Identification of problem solving teams. Support services to school districts in the state of Iowa are provided through intermediate education agencies called Area Education Agencies or AEAs. The present research was conducted in one AEA. Representatives from the 49 problem-solving teams in the area were asked to complete a questionnaire relative to the structure of their respective problem solving teams as well as

the processes employed by the teams. Representatives identified a variety of characteristics about their teams and the procedures utilized. Representatives were asked to identify the name of their respective teams (e.g. Instructional Consultation Team, Building Assistance Team, Student Assistance Team, etc.), the members on the teams (e.g. classroom teacher, case manager, special education teacher, counselor, administrator, AEA building contact, etc.), the frequency with which the team meets (e.g. weekly, bi-monthly, monthly, other), and whether or not the teams followed a formal process. A copy of the questionnaire is included in the Appendix.

Identification of problem solving components utilized. In the questionnaire, problem solving team representatives identified by check mark which of the eleven key components of problem solving their teams employ during the problem solving process (see Table 1). Representatives were asked how student progress on interventions is documented and monitored (e.g. chart, tally, assignments/tests, observations, other) and what forms or paperwork are used to document the overall process (e.g. Student Documentation Form, Phase II Form, other). Representatives were also asked how communication occurred with parents (e.g. telephone, mail, in person) and whether parent involvement was documented.

Participants

Problem solving teams for the present study were identified based on responses to the questionnaire. The first criterion for selection was that teams serve students in an elementary building. The second criterion for selection was that teams must meet on a regular basis, either weekly or bi-monthly. The third criterion differentiated IC teams

from non-IC teams, or teams following a generic model of problem solving. Three teams were identified as implementing the IC Team Model based on their self-reported use of the case manager model of consultation whereby a case manager is assigned to each student referral. The case manager then meets with the classroom teacher on a regular basis to problem solve and look at data to determine next steps. In contrast, three non-IC teams were identified using a self-reported generic model of problem solving based on the implementation of a problem solving process other than the case manager model.

Area Education Agency contact persons verified the processes and procedures reported by team members on the questionnaires were consistent with actual practices. Additionally, each team provided a brief description of the process followed when a student is referred to the problem solving team. The extent and quality of the narrative problem solving process was examined to ensure components identified as being part of the team process on the questionnaire were consistent with actual practices.

Instructional Consultation Team A (ICA) was identified in a rural farming community of about 7,597 people (U.S. Census Bureau, 2000). The community has several manufacturing and wholesale factories, service businesses as well as a variety of retail establishments. About 1,448 students are enrolled in pre-kindergarten through 12th grade. The elementary building serves approximately 516 students in 1st through 5th grades (Iowa Department of Education, 2007). The identified team is called a Student/Teacher Assistance Team (STAT) and serves approximately 300 3rd through 5th grade students. Team members include classroom teachers, case manager(s), special education teacher(s), administrator, and AEA building contact. The team meets weekly

and collects data via the Student Documentation Form (SDF). Team members report engaging in all 11 of the essential components of the IC team model, as identified in Table 1. Team members attended the initial training with Todd Gravois as well as follow up trainings provided by AEA staff.

Instructional Consultation Team B (ICB) is located in a rural community with a population of approximately 1,983 people (U.S. Census Bureau, 2000). Total enrollment for the district is approximately 691 students, with about 287 students in the elementary building, pre-kindergarten through 5th grade (Iowa Department of Education, 2007). The identified team is called an Instructional Consultation Team (IC Team) and serves approximately 137 4th and 5th grade students. Team members include classroom teacher(s), case manager(s), special education teacher(s), counselor, administrator, AEA building contact and the school nurse. The team meets weekly and collects data via the SDF. Team members report engaging in eight of the 11 essential components of the IC Team model, as identified in Table 1. Team members attended the initial training with Todd Gravois as well as follow up trainings provided by AEA staff.

Instructional Consultation Team C (ICC) was identified in a smaller rural community of about 917 people (U.S. Census Bureau, 2000). Total enrollment for the district, kindergarten through 12th grade, is approximately 461 students (Iowa Department of Education, 2007). The identified team is called an Instructional Consultation Team (IC Team) and serves approximately 196 students Pre-kindergarten through 5th grade in two separate buildings. Team members include classroom teacher(s), case manager, special education teacher, guidance counselor, administrator, and AEA building contact.

The team meets every two weeks and collects data via the Student Documentation Form (SDF). Team members report engaging in all 11 of the essential components of the IC team model, as identified in Table 1. Team members attended the initial training with Todd Gravois as well as follow up trainings provided by AEA staff.

The first team identified as implementing a generic model of problem solving (PSA) is located in a rural farming community with a population of about 714 (US Census Bureau, 2000). The elementary serves 128 students in kindergarten through 6th grade. Total K-12 enrollment in the district is approximately 289 students (Iowa Department of Education, 2007). The identified team is called a Student/Teacher Assistance Team (STAT) and serves approximately 128 students in kindergarten through 5th grade. Team members include classroom teacher(s), special education teacher, guidance counselor, administrator, AEA building contact, AEA speech language pathologist and LEA Title I teacher. The team meets every two weeks, and collects data via the Student Documentation Form (SDF). Team members report engaging in four of the 11 essential components of the IC team model, as identified in Table 1. Team members did not attend the initial training with Todd Gravois or follow up trainings provided by AEA staff.

The second generic problem solving team (PSB) is in a small town of about 514 people (US Census Bureau, 2000). Total K-12 enrollment for the district is approximately 98 students (Iowa Department of Education, 2007). The identified team is called a Building Assistance Team (BAT) and serves approximately 51 students in Kindergarten through 5th grade. Team members include elementary classroom teachers, special

education teacher, administrator, and AEA building contact. The team meets bi-monthly and has an informal method of data collection, though generally tries to follow the format of the Student Documentation Form. Team members report engaging in four of the 11 essential components of the IC team model, as identified in Table 1. Team members did not attend the initial training with Todd Gravois or follow up trainings provided by AEA staff.

The last generic problem solving team (PSC) is in a school in a rural farming community with a population of 402 people (US Census Bureau, 2000). Local businesses include mainly independent service and small-town retail establishments. The elementary serves about 73 preschool through 5th grade students. The district reports a total enrollment of approximately 245 preschool through 12th grade students (Iowa Department of Education, 2007). The identified team is called a Building Assistance Team (BAT). Team members include the building administrator, the AEA building contact and the Title I teacher. The team meets every two weeks and collects data via the Student Documentation Form (SDF). Team members report engaging in five of the 11 essential components of the IC team model, as identified in Table 1. Team members attended the initial training with Todd Gravois as well as follow up trainings provided by AEA staff.

Student Outcome Data

The six identified teams were asked to submit an end-of-year report of student outcomes from the problem solving team. General education problem-solving teams in this AEA routinely keep track of information surrounding referrals made to the teams.

Such data is typically collected at regular team meetings, recorded by the team leader or other assigned team member on specified data forms or through other team-developed forms. End-of-year data is then routinely reported out to the AEA as part of ongoing efforts to help schools develop new, productive general education problem solving teams and/or support already functioning teams. Data collected and reported out generally includes information such as grade level, gender, the reason(s) for the referral, the types of intervention(s) developed and implemented, progress of the intervention(s), and the final outcome of the referral. Possible outcomes include: the intervention(s) helped the student meet with success, therefore was discontinued; the intervention(s) is showing some success and will continue the following school year; or the intervention(s) were not successful, resulting in a formal referral for evaluation for special education support services and development of an Individual Education Plan (IEP). A primary goal of problem solving is to meet children's needs in the general education setting without the need to identify the child as having a disability. Therefore, for the purposes of this study, positive outcomes are those in which the intervention was successful and the child no longer requires problem solving or that the intervention is successful enough to continue without consideration of an IEP.

RESULTS

An alpha level of .10 was used for all statistical tests because of the small number of teams examined and the exploratory nature of the study.

Problem Solving Process

Teams' self-reports of engagement in the eleven components of the IC Team Model indicate that IC teams engage in more of the components than non-IC teams. As presented in Table 1, teams following the Instructional Consultation Team model employed at least 8 of the 11 components identified as being key to the IC Team model of problem solving. The other teams employed only 4 or 5 of those key components. The mean number of components used by IC teams was 10.0 (SD = 1.73; range = 8 – 11); mean number for non-IC teams was 4.33 (SD = 0.58; range = 4 – 5). The difference is statistically significant ($t(4) = 5.367$, $p < .006$). As seen in Table 1, IC teams are more likely to engage in certain components than non-IC teams. Although chi square analyses can not be used because it results in too many cells with counts of less than 5, more IC teams than non-IC teams reported that they met weekly, collected baseline data, wrote a measurable statement of current performance, identified a long term goal, identified specific data to be recorded, decided how often data would be recorded, decided where information would be recorded and monitored integrity of the intervention.

Relationships Between IC Model Components and Student Outcomes

Chi-square tests of independence were performed to examine the relationships between the various components of problem solving and student outcomes as presented in Table 2. Student outcomes were broken in to three categories: cases in which students

are making progress thus are "continuing" with the interventions; students reported as having been "successful" with the interventions and were dismissed from the process; and cases whereby students were not successful with interventions and were determined to be eligible for support services through an Individual Education Plan (IEP). Additionally, two components of problem solving were not examined statistically. Each team reported using the "initial description of concern" and identification of the "person responsible for interventions," therefore analysis of those two components was not relevant for this study. Nine other components were examined for possible impact. Although standardized residuals were used following chi square tests to determine which cells contributed to the significance, no cells reached the 2.0 level which is generally considered necessary for interpretation. Thus, although general trends are noted, they should not be over interpreted.

A combined total of 47 cases were referred to the IC Teams and 28 cases were referred to non-IC Teams. Findings indicate a statistically significant relationship between teams identified as either IC or non-IC and student outcomes, χ^2 (df = 2, N = 75) = 66.10, p = .078. The general finding was that more cases conducted by IC Teams resulted in a continuation of interventions than expected, and fewer cases conducted by non-IC teams resulted in continuation than were expected.

The impact of the frequency of team meetings on student outcomes was also significant χ^2 (df = 2, N = 75) = 86.79, p = .034. For teams that met weekly, more cases than expected were continued and fewer than expected resulted in consideration for an

IEP. The opposite was true for teams that met bi-monthly. Fewer cases than expected were continued and more cases than expected were considered for an IEP.

Findings indicate the "identification of specific data to be collected" had a significant impact on student outcomes, χ^2 (df = 2, N = 75) = 66.10, p = .078. Teams that identified what specific data would be collected were more likely than expected to continue cases and less likely than expected to consider cases for an IEP or report cases successful. The opposite was true for teams that did not identify what specific data would be collected. Fewer cases than expected were continued and more cases than expected were reported successful or considered for an IEP.

Similarly, the "identification of how often intervention data will be recorded" showed a significant impact on student outcomes, χ^2 (df = 2, N = 75) = 57.37, p = .029. Teams identifying how often data would be recorded were less likely than expected to report successful student outcomes, but more likely to continue cases. Teams that did not identify how often data would be recorded were more likely than expected to report successful student outcomes and less likely than expected to continue cases.

The identification of "where the intervention data will be recorded" showed a significant impact on student outcomes, χ^2 (df = 2, N = 75) = 57.37, p = .029. Teams that reportedly identified where intervention data would be recorded were less likely than expected to be successful, but more likely than expected to report successful student outcomes. The teams that reportedly did not identify where intervention data would be recorded were less likely to continue cases and more likely than expected to report successful outcomes.

The remaining components of the problem solving process showed no significant relationships to student outcomes. These remaining components included: baseline data to support area of concern on student outcomes, χ^2 (df = 2, N = 75) = 21.99, p = .295; presence of a short term goal, χ^2 (df = 2, N = 75) = 12.57, p = .596; presence of a long term goal, χ^2 (df = 2, N = 75) = 1.57, p = .934; data-based decision making, χ^2 (df = 2, N = 75) = 2.39, p = .910; and monitoring of intervention integrity, χ^2 (df = 2, N = 75) = 33.72, p = .197.

DISCUSSION

The data from this study provided partial support for the effectiveness of the Instructional Consultation Team Model on student outcomes in the general education pre-referral problem solving process. The general finding with this study was that IC teams implement more of the critical steps in problem solving than non-IC teams. Further, teams that meet more frequently and teams that have specific steps for collecting and recording data are more likely to continue interventions rather than terminate because of success or IEP consideration.

The prediction was made that IC teams engage in a more structured and systematic process, which results indicate was true. Teams in the present study identified as following the IC Team Model engaged in more of the components key to the Instructional Consultation Model of problem solving than did non-IC teams. As Fudell (1992) found, teams accurately using a structure to document the problem solving process tended to show higher implementation of critical components of the model, which supports the need for teams to develop appropriate organizing structures to support the process being implemented. Through an organized process, problems can be assessed directly and systematically rather than through inferential statements based on assessment data (O'Reilly & Tobin, 2005).

Secondly, the prediction was made that teams following the IC Team Model report more positive student outcomes. Results indicate IC teams were more likely to continue interventions than were non-IC teams. The present study found that deciding which specific data to record, where to record the data and how often data would be

recorded made a difference, but the individual component identified as "data based decision making" did not, indicating that through the process, discussions about data occurred and perhaps lead to data-based decision making without the team actually realizing it. Focusing on a data-driven system as opposed to reliance on inferential statements to drive the process provides a systematic method for assessing problems and has a positive impact on teams' ability to use the process (O'Reilly & Tobin, 2005).

Lastly, the present research looked at possible relationships between specific steps in the problem solving process and student outcomes. Specific components that appear to have significant impact on positive student outcomes include the frequency of team meetings, identifying what specific data will be recorded, how often it will be recorded and where the data will be recorded. Although the individual data-based decision making component did not show statistical significance, identifying specific details related to the data appears more important in the problem solving process. Fudell (1992) found similar results in that teams more accurately using forms to document the problem solving process were assessed to have higher implementation of the critical dimensions of the specific model being investigated. According to Rosenfield (2002), decision-making should be data driven. Further, on-going monitoring of the data allows teams to make more informed decisions relative to interventions.

Data based decision making is vital to the process. One consideration relative to the significant results surrounding data collection is that IC Teams are perhaps more willing to let the process work because data is present and part of the discussion. Additionally, having those conversations about data in essence is a commitment to a

process. A commitment to implement a specific intervention with a specific goal in mind, collect a specific data set and record the data in a structured manner. Without the data, a team has more freedom to subjectivity with a tendency to look at random data when considering moving on to evaluation for an IEP.

Another consideration is that teams following the IC Team Model of problem solving may have a better understanding of the overall purpose of the pre-referral intervention process, individual components of the process and the expected outcomes associated with the Model separate from the decision to move to eligibility for an IEP. Teams seem to recognize pre-referral interventions may be connected to eligibility for an IEP, but one does not automatically assume the other. Ongoing conversations during regularly scheduled, structured meetings likely lend to the awareness of the process and result in more buy in from team members. Team members understand more clearly the importance of collecting data to inform decision making when the process is intervention-focused rather than eligibility focused (O'Reilly & Tobin, 2005).

Limitations

Reliance on a broad outcome measure brought about a specific set of results. More information could have been gained from an in-depth analysis of actual progress monitoring. Examining actual team records and specific case studies would allow validation of self-reported implementation of the components of problem solving. Additionally, a more in-depth analysis of specific cases could provide insight as to where the breakdown in the process occurs most often, or specifically which components lend themselves to more positive outcomes.

The rural area where the research was conducted is generally made up of small school districts boasting total enrollments of fewer than 500 students, some fewer than 100. As such, the smaller school districts in the study were more apt to develop a generic model of problem solving or a variation of the IC Team Model to better meet their unique needs. While research has shown the formality and structure associated with the IC Team Model can be highly effective, a school district serving a total of 50 or 75 students may find success in an alternate model.

Another consideration could be that with small school districts come small class sizes. When a teacher has six or seven students in the classroom, more individualized instruction is easier to accomplish. Smaller class sizes means teachers can more easily focus on struggling students and provide more intensive instruction without necessarily going through the structured problem solving team processes.

Research has shown that a complex change such as developing and implementing a pre-referral problem solving team could take as long as three to five years with major system restructure taking anywhere from five to ten years (Rosenfield & Gravois, 1996). As such, "introducing quality teams into the culture of schools, particularly those in which the norms of isolation and lack of collaboration have been dominant, requires extensive investment and support – investment in the form of training and facilitation and support as the responsibility of management to remove the barriers to success from the team's path" (Arcaro, 1995, p. vii). Teams that are hastily conceived and implemented are rarely effective.

The roll out of problem solving teams, specifically the IC Team Model, really got under way with the schools in the present study in 2003, indicating that by the 2006-2007 school year, full implementation may not yet be possible. While research does support the positive impact school-based teams have on specific student outcomes, full implementation of a consistent and structured problem solving process likely is not yet occurring.

Smaller schools appear to implement more loosely formed problem-solving teams, which do not necessarily meet on a regular basis. Implementing a consistent and structured process with integrity may prove more difficult, for instance, in rural school districts that have teachers with more than one role (e.g. a classroom teacher in the morning who transitions to a Title I reading teacher in the afternoon, or a classroom teacher covering multiple grade levels and content areas). Additionally, the small rural school districts, particularly in this area, struggle with high turnover, which results in less buy-in from the teachers and less opportunity to master the process.

Future Research

Selection of a specific model is only the first step in the process of developing and implementing an effective general education pre-referral problem solving team. Implementing and continuing effective and efficient teams require complex changes in existing structures and practices. As Rosenfield and Gravois (1996) have pointed out, school districts must be willing to put forth time and effort to effectively utilize a model such as the Instructional Consultation Model of problem solving. Without appropriate buy-in from the district, only meager results will be realized.

Future focus should be placed on appropriate and effective training for professionals relative to developing and implementing effective methods of pre-referral problem solving. One pervasive problem is the lack of adequately defined and implemented training programs to use as models. "Without training in team process skills, some teams are no more effective than individuals" (Huebner & Hahn, 1990). Evidence has shown that appropriate training conditions can possibly increase the fidelity of implementation (Telzrow, McNamara & Hollinger, 2000). This finding is supported by Fudell's (1992) research as well, citing the need to develop appropriate organizing structures that support process skills being implemented by team members. In sum, selection of a specific model of problem solving is only the first step in the change process. Implementing and continuing effective and efficient teams require complex changes in existing structures and practices.

Additionally, future research should focus on the development, and specifically the implementation of research-based interventions with integrity and fidelity. Research has suggested a connection between the process of implementation and overall team effectiveness (Fudell, 1992; Fullan, 1991; Rosenfield & Gravois, 1996). However, studies have proven difficult due to the complicated scope such an in-depth study would involve. Additionally, Green-Resnick and Rosenfield (1989) found that poor training relative to implementing specific interventions prohibited a full investigation on student outcomes. Demonstrating fidelity of problem solving implementation in school-based settings must be accomplished before more specific benefits can be confirmed.

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Table 1

Components of Problem Solving Utilized in Teams' Processes and Procedures.

Problem Solving Component	ICA	ICB	ICC	PSA	PSB	PSC
Frequency of meetings (weekly/bi-monthly)	W	W	B	B	B	B
Initial description of concern (operational definition)	X	X	X	X	X	X
Baseline data to support area of concern	X	X	X			X
Observable/measurable statement of current performance	X	X	X			X
Short-term goal (expected performance by certain date)	X		X			X
Long-term goal (expected performance by certain date)	X		X			
What specific intervention data will be recorded	X	X	X			
How often intervention data will be recorded	X	X	X	X		
Where the intervention data will be recorded	X	X	X	X		
Person(s) responsible for interventions	X	X	X	X	X	X
Data-based decision making	X		X		X	
Monitoring of intervention implementation integrity	X	X	X		X	

Note: the last 11 components are considered key components in the IC Model of problem solving.

Table 2

Student Outcomes Reported by Teams at the End of the 2006-2007 School Year.

Outcomes	ICA	ICB	ICC	PSA	PSB	PSC
Continue	8	13	10	6	3	2
Successful	2	2	4	1	3	4
IEP	2	1	5	5	2	2
Other		1		2		1

Table 3

Relationships of Instructional Consultation Components and Student Outcomes.

		Student Outcomes			
		Continued	Successful	Consideration for IEP	
	N	N Observed (%)	N Observed (%)	N Observed (%)	χ^2
IC Team status					66.1*
IC team	47	31 (65.96)	8 (17.02)	8 (17.02)	
Non IC team	28	11 (39.3)	8 (28.57)	9 (32.14)	
Meeting frequency					86.8**
Weekly team meetings	28	21 (75)	4 (14.29)	3 (10.71)	
Bi-monthly team meetings	47	21 (44.68)	12 (25.53)	14 (29.79)	
Baseline data to support the area of concern					21.99
Baseline data present	55	33 (60)	12 (21.82)	10 (18.18)	
Baseline data not present	20	9 (45)	4 (20)	7 (35)	
Observable/Measurable statement of current performance					21.99
Statement present	55	33 (60)	12 (21.82)	10 (18.18)	
Statement not present	20	9 (45)	4 (20)	7 (35)	
Short term goal					12.47
STG identified	39	20 (51.28)	10 (25.64)	9 (23.08)	

STG not identified	36	22 (61.11)	6 (16.67)	8 (22.22)	
Long term goal					1.57
LTG identified	31	18 (58.06)	6 (19.35)	7 (22.58)	
LTG not identified	44	24 (54.55)	10 (22.73)	10 (22.73)	
What specific intervention data will be recorded					66.1*
Data identified	47	31 (65.96	8 (17.02)	8 (17.02)	
Data not identified	28	11 (39.29)	8 (28.57)	9 (32.14)	
How often intervention data will be recorded					57.4**
Identified	59	37 (62.71)	9 (15.25)	13 (22.03)	
Not identified	16	5 (31.25)	7 (43.75)	4 (25)	
Where intervention data will be recorded					57.4**
Identified	59	37 (62.71)	9 (15.25)	13 (22.03)	
Not identified	16	5 (31.25)	7 (43.75)	4 (25)	
Data based decision making					2.39
Present	39	21 (53.85)	9 (23.08)	9 (23.08)	
Not present	36	21 (58.33)	7 (19.44)	8 (22.22)	
Monitoring intervention implementation integrity					33.72
Monitored	55	34 (61.82)	11 (20)	10 (18.18)	
Not monitored	20	8 (40)	5 (25)	7 (35)	

* $p < .10$ ** $p < .05$

APPENDIX

Questionnaire

Building Level Problem-Solving Process
(General Education Interventions)

To align AEA's focus on providing research-based strategies to improve the achievement of struggling learners, it is important to determine current procedures used by district problem-solving teams. To assist in this effort, please answer the following questions:

District Name: Building:

Please indicate the name of your problem-solving team:
___Instructional Consultation Team
___Building Assistance Team
___Student Assistance Team
___Student/Teacher Assistance Team
___Other_____

Who are the members on your team?
(Check all that apply)
___Classroom teacher
___Case manager
___Special education teacher
___Counselor
___Administrator
___AEA Building Contact
___Others (list)_____

Do these members participate all year or do members attend based on the referral?

How often does the team meet? ___Weekly ___Bi-Monthly ___Monthly ___Other_____

Does your team follow a formal process? Yes No Does your process include the following:

___Initial description of concern (operational definition of concern)
___Baseline data to support area of concern
___Observable/measurable statement of current performance (following baseline data)
___Short-term goal (expected performance by a certain date)
___Long-term goal (expected performance by a certain date)
___*What* specific intervention data will be recorded
___*How often* the intervention data will be recorded
___*Where* the intervention will be recorded
___*Person(s) responsible* for interventions
___Data-based decision making (3 point decision-making rule)
___Monitoring of intervention implementation integrity

What forms or paperwork (e.g., SDF, Phase II) do you use to document the above?
How do you communicate with student's parent(s) in the problem-solving process? ___Telephone ___By mail ___In person

Is parent involvement (and dates) documented? ___Yes ___No

How is student progress on interventions documented and monitored? ___Assignments/tests ___Chart ___Observations ___Tally ___Other (list)

Please explain your GEI process and procedures. (Use back)