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Creative Problem Solving For GeneralEducation Intervention Teams: Examining Student Outcomes

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by

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ABSTRACT

The Individuals with Disabilities Act 2004 (IDEA, 2006) emphasizes that examining a student's responses to interventions, and knowing the variables that better predict student outcomes, will improve outcomes for students going through the intervention process. This study examined four issues regarding a specific intervention process, Creative Problem Solving for General Education Intervention Teams (CPS for GEI): (a) whether students referred to the CPS for GEI teams process progressed differently based on student outcomes relative to the area of concern; (b) whether the overall quality of the action plans differed across schools; (c) whether there was a difference in student outcomes across schools; and (d) whether the process had an impact on student outcomes in terms of problem-solving components, including definition of the problem, baseline data, goal setting, action plan, and interventions built on student strengths.

Six CPS for GEI trained teams participated in the study with 76 individual cases reviewed, but only 32 cases included student outcomes. Data used, including a Team Accomplishment Sheet (TAS) and individual Action Plans, were completed by the schools and were scored against a rubric replicated from Telzrow (2000) of best practice indicators. Student outcome data were examined based on the student's reaching the goal set by the team. Findings indicated that the distribution of student outcomes did not differ

significantly by area of concern. The overall quality of the action plans between schools differed significantly and when teams developed better plans they tended to have better student outcomes. Finally, having a quality goal was positively correlated with student outcomes. Therefore, this study suggests that through the use of CPS for GEI, educators can meet the requirements of the law and monitor a student's progress by focusing on these components.

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CHAPTER 1

INTRODUCTION

Although the Individuals with Disabilities Education Act (IDEA) Amendment of 1997 and reauthorization of IDEA in 2006 do not specifically address school-based teams, they have many implications for school-based teams (Telzrow & Tankersley, 2000). School-based teams expand the role of service provisions, thereby enabling educators to meet IDEA regulations at both the pre-service and in-service levels. One way in which students can be served by school-based teams is through general education intervention teams. Indiana's Special Education Rule (Indiana State Board of Education, 2002; Indiana State Board of Education, 2008) requires Indiana's schools to have in place a written system, at the building level, of methods and procedures used to address academic or behavioral difficulties that are impacting educational performance. However, the manner in which a school-based team is to be conducted is not specified. Most schools meet the requirements of the law through the use of intervention teams. Even though the purpose of an intervention team is to improve student outcomes, thus far the literature lacks studies examining such outcomes. The present study examines one intervention team approach, Creative Problem Solving for General Education Intervention (CPS for GEI) teams, as related to student outcomes.

The present study used Upah and Tilly's (2002) conceptual work on quality interventions and Telzrow, McNamara, and Hollinger's (2000) work to determine best practice indicators and develop a rubric based on these problem-solving components. Specifically, Upah and Tilly suggest that the field of school psychology, as a whole, has shifted towards developing interventions to enhance student outcomes. This is also supported by the National Association of School Psychologists (NASP; e.g., Thomas & Grimes, 2002) and other researchers (e.g., Telzrow et al.). This means that school psychologists and school-based teams will need to assess student progress based on designing and implementing interventions and evaluating student outcomes. In order to evaluate interventions, several problem-solving components to use were listed by Telzrow et al. and Upah and Tilly. These problem-solving components include: a behavioral definition of the problem, baseline data, clearly identified goal or target behavior for student, hypothesized reason for the problem, systematic step-by-step action plan, treatment integrity, data including student response to intervention, direct comparison of the student's postintervention performance with baseline data, and student outcome.

Telzrow et al. (2000) examined the relationship between problem-solving and student outcomes by studying 227 multidisciplinary teams. These teams were recruited on a voluntary waiver through Ohio's network of 16 Special Education Regional Resource Centers. The design and implementation of training and technical assistance to the teams was coordinated through the Special Education Resource Center. Two instruments were used for the study. The first was a Problem Solving Worksheet

(Telzrow, 1995) that examined behavioral descriptions of the problem, baseline data, measurable goals, hypothesized reason for the problem, systematic interventions plan, evidence of treatment integrity, data on student response to intervention, and comparison of student data with baseline data. The second tool was a case evaluation instrument, or rubric, developed to evaluate the fidelity of problem-solving (i.e., the implementation of problem-solving in an applied setting and the degree of student change), accuracy of the description to what is involved in problem-solving, and student outcomes. The teams were instructed to submit case documentation for one student, which included a completed Problem Solving Worksheet and an Evaluation Team report, both completed by the team. The case submitted was to be the "best case" documentation chosen by the individual teams.

The case documentation was then evaluated using the scoring rubric. A Likert scale scoring rubric was used to evaluate the fidelity of problem-solving and the degree of student change. For the scoring rubric, a Likert score of 1 indicated no elements were evident based on the documentation provided; a score of 3 indicated some elements were present; and a score of 5 reflected all of the elements needed for the component were evident. Telzrow and two graduate students scored the data, which yielded high inter-rater agreement (.87 to .97 for all components). The fidelity of the problem-solving implementation was evident in the mean rating for each of the problem-solving components. Ratings of implementation for six of the eight components were significantly correlated with the student outcome ratings. These data were analyzed using stepwise multiple regression to determine what indicators gave the highest fidelity rating.

The order of the predictor variables was determined by the relationship with student outcomes. Based on the results of this analysis, both the Behavioral Definition of the Problem and Clearly Identified Goal had the highest scores, and both Hypothesized Reason for the Problem and Treatment Integrity had the lowest scores.

Telzrow et al. (2000) noted two limitations to the study. First, sample composition was a limitation because the researchers did not have control over site selection, so it was possible that the sample used for the study was composed of schools that were committed to school-based change and problem-solving approaches. The second limitation relates to records keeping. The information for the study was collected through case documentation, so it is possible that the schools implemented problem-solving components correctly, but that this was not reflected in the case documentation. At the same time, it is also possible that the teams generated elevated self-ratings of their work, which makes the data vulnerable to a misrepresentation of the actual work.

Based on the work of Telzrow et al. (2000), and the CPS for GEI team process, the current study examined six problem-solving components that evaluated interventions generated by CPS for GEI teams and affected student outcomes. These indicators include (a) definition of the problem, (b) baseline data, (c) goal setting, (d) action plan, and (e) student outcome data. Furthermore, based on the unique approach of CPS for GEI teams process and the literature based on Positive Behavioral Supports, a sixth problem-solving component was developed and is named (f) interventions built based on the student's strengths. It is important to study the fidelity of these problem-solving components and the effects on students due to the fact that many schools employ problem-solving

components (Carter & Sugai, 1989). Thomas and Grimes (2002) represent these problem-solving components as "best practice," and the components are implemented in some states' departments of education (e.g., Iowa).

Background to the Problem

Both IDEA (Telzrow & Tankersley, 2000) and Article 7 (Title 511 Article 7, 2008) require a school-based intervention assistance process to assist students in the general education setting who appear to be struggling academically or behaviorally, but the procedures for such are not specified. Research (e.g., Buddle et al., 2005) indicates that many schools have implemented intervention teams at the building level in order to comply with federal and state special education mandates. The literature shows that different terms have been used both in Indiana and in other states, and have included, but are not limited to, Prereferral Intervention Teams (Graden, Casey, & Christenson, 1985), Teacher Assistance Teams (Chalfant, Pysh, & Moultrie, 1979), General Education Intervention Teams (Grimes, 2001; McKinney, 2001), and Mainstream Assistance Teams (Fuchs, Fuchs, Bahr, Fernstrom, & Stecker, 1990).

Just as the names of school-based intervention teams differ, the ways in which the general education intervention teams are organized also differs. Buddle et al. (2005) reported that the school-based intervention teams studied are being used to assist students who are in need of academic and/or behavioral supports. This support happens prior to or in conjunction with a referral to special education services. School-based intervention teams also function in other ways. For instance, Chalfant et al. (1979) studied teams called Teacher Assistance Teams (TAT) and found that there were three members who

had the goal of helping the teacher obtain assistance for students who were having difficulties in the classroom. The TAT process was later expanded upon by Hayek (1989) to include staff training and monitor attitudes toward the TAT process.

Another way in which school-based teams function was studied by Bahr, Whitten, Dieker, Kocarek, and Manson (1999) who examined school-based intervention teams across three states. They found that the majority of teams were identified as prereferral teams. Administrators were most frequently recognized by respondents as the team leaders. According to team members, special education teachers were viewed as most knowledgeable and best able to identify problems (i.e., "definition of the problem" [Telzrow et al., 2000]). In addition, verbal contact and follow-up meetings were rated as the most frequent type of follow-up procedures used by teams. Teacher judgment was the most frequently used type of quality index, followed by the use of team-assigned responsibilities to assist with both interventions and permanent products.

An additional function of a school-based intervention team includes meeting the diverse needs of students. Bahr and colleagues (1999) reported that school-based intervention teams are one approach to service delivery that has the potential to help meet the diverse needs of students. According to Zins, Heron, and Goddard (1999), once a need in the area of academic, behavioral, or social domains is established, Intervention Assistance Programs, which is one type of school-based intervention process, needs to be applied in a joint, systematic problem-solving method during which appropriate interventions are arranged. Furthermore, it was suggested that the interventions need to be developed and implemented before making a referral for special education assessment.

Sheridan, Welch, and Orme (1996) conducted a literature review to investigate empirically-based outcome research that had been published since 1985 on the topic of traditional consultation approaches in order to (a) analyze and critique different methodological features of recent research, (b) draw conclusions about the available outcome research, and (c) provide ideas for future research. Although their focus was on consultation (i.e., triadic service delivery involving a consultation working with one or more consultees to address concerns regarding the client) rather than on intervention teams, consideration of this research sheds light on school-based intervention teams because a similar indirect relationship is involved through the use of a general education intervention team between the consultant (the General Education Intervention team), the consultee (the teacher), and the client (the child). Furthermore, according to Upah and Tilly (2002), many intervention teams address the four stages of behavioral consultation based on the work of Bergan and Kratochwill (1990), which could be likened to the indirect relationships of the general education intervention team.

According to Sheridan et al. (1996), research prior to 1985 supported using the consultation method. For example, Sheridan et al. found that research since 1985 has utilized improved methodological rigor as compared to the past studies. In addition, it was concluded that studies with a well-articulated model or conceptual framework (e.g., behavioral consultation, mental health, organizational, etc.) yielded favorable results with behavioral consultation yielding the highest percentage of constructive change for the client. In order to come to these results, 46 articles were coded based on several variables through outcome measures including ratings, testing, observation, and referrals. Positive

results indicated that constructive changes in the client were related to the consultation services. Neutral results indicated that either no change or inconsistent changes (both positive and negative) in the client occurred. Finally, negative results indicated unwanted changes in the client's behavior. In general, it was found that meaningful changes took place in the client. Of the articles reviewed, 76% yielded some positive results indicating that constructive change took place in the client, 33% reported inconsistent or no change in the client, and 4% reported unwanted change for the client. Furthermore, 46% of the articles were behavioral, with 11% mental health, and 4% organizational in terms of their approach to consultation. Twenty-eight percent employed other consultation models, and 11% did not specify. Of the behavioral consultation models, 89% of the models yielded wanted change for the client as a result of the consultation, and no unwanted results for the client were found. Fifty-seven percent of mental health consultation yielded constructive change for the client based on the model, with another 43% having inconsistent or no change in the client.

Sheridan et al. (1996) concluded that although the majority of studies employed a type of theoretical approach, many yielded inconsistent or no change for the client. Furthermore, the authors stated that it was still too early to report on the effectiveness of school consultation services since there is a limited amount of research in this area. Sheridan et al. reported that most of the research examined utilized indirect measures, such as ratings, rather than student outcomes data.

Likewise, Welch, Brownell, and Sheridan (1999) conducted a literature review on school-based problem-solving teams (SBPSTs) and team teaching published from 1980

to 1997 in order to review and identify the types of articles on team-teaching and School-Based Problem-Solving Teams, summarize the conclusions of published articles, draw conclusions regarding current research trends, and present suggestions for future research. The articles reviewed were analyzed according to (a) type of article, (b) school-based teaming model used, (c) presence of objective dependent measures to assess outcomes, (d) direction of results, (e) type of experimental design used, (f) assessment of satisfaction, (g) the way in which integrity was maintained, and (h) the way in which follow-up was conducted. Results suggested most articles were anecdotal reports or technical guides for implementing a model. Fifty-seven percent of the articles were anecdotal or technical guides. Only 2.5% of the articles employed an experimental design with most of these (20%) employing a quasi-experimental design. Among the research articles, the most common type of measures were interviews (20%), surveys (12.5%), teacher satisfaction (12.5%) and direct observation (7.5%). It was also found that only 6% of the articles reported social validity, and 55% did not report any follow-up procedures. Many of the articles reviewed reported favorable attitudes of teachers towards SBPSTs and consumer (teacher) satisfaction, which supports SBPSTs and team teaching. However, these articles utilized self-report surveys and interviews regarding satisfaction rather than intervention outcomes. Thus, little is known about student outcomes for these approaches. Welch et al. recommended that future research examine the effectiveness of SBPSTs and meaningful change in student behavior and performance. Clearly, more research in the area of student outcomes is needed.

Although much of the research in the literature relating to school-based intervention teams has focused on issues related to the function, process, or approach; research relating to student outcomes is still lacking. According to Levinsohn (2000), student outcomes include measurement of student reading achievement and special education placement rates. Although other studies have considered student academic achievement and behavioral outcomes (e.g., Fuchs, Fuchs, & Bahr, 1990), the current study considered student outcomes in relation to the student's target goal by comparison of baseline to follow-up data.

Regardless of what the school-based intervention teams are named, or in what ways the teams function, the bottom line for most teams is to increase student performance. By examining the research on interventions teams and how the teams relate to Telzrow et al.'s (2000) problem-solving components and Upah and Tilly's (2002) best practice indicators, one can compare the studies in relation to problem-solving components and best practice indicators. In order to examine empirical evidence of intervention teams as it relates to student outcomes using Telzrow et al. work as a frame of reference, the following categories were used to define the parameters of the review: Mainstream Assistance Teams (MAT), School-Based Intervention Teams (SBIT), Prereferral Intervention Teams (PIT), Instructional Consultation Teams (ICT), Intervention Assistance (IA), Intervention-Based Assessment (IBA), Multifactored Evaluation, Collaborative Educational Teams (CET), and CPS for GEI teams. These subcategories were chosen based on the overall construct of school-based intervention teams in order to help identify articles that were related to such, regardless of the specific

name of the team or process, even with some articles naming the teams "School-Based Intervention Teams." In addition, Upah and Tilly's identified best practice indicators through a 12-component standard for designing, implementing, and evaluating quality interventions. These include behavioral definition of the problem, collecting baseline data, problem validation, problem analysis steps, goal setting, action plan development, measurement strategy, decision-making plans, progress monitoring, formative evaluation, treatment integrity, and summative evaluation. To be more specific, a behavioral definition of the problem refers to a behavior that is defined in specific, observable, and measurable terms. Problem validation refers to the presence of a discrepancy between the student's performance and the standard that is large enough to warrant an intervention. Problem analysis steps include the way in which data are collected to generate a hypothesis as to why the problem exists so that the intervention design can be linked to the reason. Goal setting is defined as the direction or extent to which behavior is to be changed. Action plan development includes who will do what intervention and how it will take place. A measurement strategy includes where, by whom, and when data will be collected. Decision-making plans indicate the frequency of data collection, how to summarize the data, and guidelines to make a decision. Progress monitoring refers to continuous evaluation to modify interventions as needed. Formative evaluation occurs when the team determines if the plan is working throughout intervention. Treatment integrity indicates that interventions were implemented as planned. Finally, summative evaluation conveys if the plan worked at end of intervention.

For ease of comparison, each type of team in the literature was examined in relationship to Telzrow et al.'s (2000) and Upah and Tilly's (2002) best practice indicators (see Appendix A). Specifically, Fuchs, Fuchs, Bahr, et al. (1990) reflected goal setting and summative evaluation in their research on Mainstream Assistance Teams (MAT). For School-Based Intervention Teams (SBIT), McDougal, Moody-Clonan, and Martens (2000) presented goal setting, hypothesized reason for the problem, and building an action plan. Regarding Prereferral Intervention Teams (PIT), Truscott, Cosgrove, Meyers, and Eidle-Barkman (2000) examined three studies of acceptability of the process and the teams appeared to be functioning at least adequately in the action plan development phase as evidenced by the teams' student referrals for counselors or special education and by the fact that PIT rarely undertook consultation services. The Instructional Consultation Teams (ICT) type was studied by Levinsohn (2000), who looked at treatment integrity, definition of the problem, baseline data, and action plan development. Rock and Zigmond (2001) examined Intervention Assistance Teams (IA) and tracked summative evaluation data. McNamara and Hollinger's (2003) research on Intervention-Based Assessment (IBA) dealt with the summative evaluation phase and also touched on progress monitoring and formative evaluation. In addition, definition of the problem and problem analysis or hypothesized reason for the problem were also examined. Formative evaluation and baseline data were reported by Hunt, Soto, Maier, and Doering (2003) for Collaborative Educational Teams (CET). Finally, the CPS for GEI teams process itself requires participants to examine behavioral definition of the problem, review baseline data, action plan development, goal setting, building

interventions built on the student's strengths, formative evaluation, and summative evaluation (Bahr et al., 2006).

Mainstream Assistance Teams

Fuchs, Fuchs, Bahr, et al. (1990) examined the Mainstream Assistance Team (MAT) process, which is based on behavioral consultation. MATs used written scripts to guide the process and scripted self-monitoring protocols, which were designed to channel the consultants' verbal behavior so that he or she could create a rationale for the meeting, establish a quick-paced flow of the meeting, and obtain information about the classroom environment. This approach was successful in decreasing the number of referrals to special education. With regard to goal setting, the students referred to the MATs met 75% to 85% of the goals that were identified for them. Since IDEA mandates that students be educated in the Least Restrictive Environment (LRE), which, for many students, could mean staying in their general education classroom with some supports offered through an intervention team, the process used in this study lends itself to potentially helping schools meet criteria for federal mandates through LRE.

School-Based Intervention Teams

McDougal et al. (2000) stated that prereferral intervention teams embody a consultation-based approach for providing academic or behavioral interventions to a student prior to recommending an evaluation for special education services. This is deemed important because consultation has become a means to service students in the school setting, and consultation is thought to reduce the burden placed on services available at the school, including special education. McDougal et al. used a prereferral

intervention program called the School-Based Intervention Team (SBIT), which was based on behavioral consultation (Kratochwill & Bergan, 1990), and was guided by a three-stage model for organizational change (Fairweather, Sanders, & Tornatzky, 1974). This process includes consultation between a teacher and a team of consultants all working toward the common goals of defining and analyzing the problem, as well as developing an action plan, which includes designing, implementing, and evaluating one or more treatments (Fuchs & Fuchs, 1989; Graden et al., 1985). The purpose of McDougal et al.'s study was to (a) describe the organizational change procedures that were used to promote acceptability of a prereferral intervention program being implemented in a district, and (b) to document the program's acceptability to team members and teachers participating in the process where the change was piloted. The second purpose of the study was important because the district in the study was in the fourth year of piloting a model for delivery of prereferral services. During the four years of the project, the piloting project had grown from four schools to nine. Therefore, discussing the acceptability of those involved in the project was important to continue the initiative in the district.

McDougal et al. (2000) examined four elementary level schools that were located in an urban district in New York. The SBITs at each school were composed of six to ten professionals. Forty-seven students who displayed academic and/or behavior problems were taken through the SBIT process. Teachers generally rated SBIT services favorably. Initial referral rates to special education in the first year dropped by 22% compared to two years prior to the SBIT project, and dropped by an additional 14% in the second year.

The SBIT program showed a mean drop of 36% in referral rates to special education, although the district as a whole had a 4% increase in referrals to special education. McDougal et al. note that the decrease in referral rates could have been accounted for by teachers' motivation to accommodate children's needs in a general education classroom, the school's readiness to adopt a change model, or increased prereferral activities, which limited the number of students referred. It is also possible that although McDougal et al. did not specifically investigate student outcomes, the teachers in the study decreased the number of referrals to special education, and the referral rate to special education was considered a student outcome by Levinsohn (2000). Therefore, it is plausible that the interventions generated through the SBIT program may have successfully impacted student outcomes, because if students did not improve performance, teachers would have been likely to pursue a special education referral. However, because the data on the student's achievement and behavior were not obtained, this remains speculative.

Prereferral Intervention Teams

Truscott et al. (2000) examined three studies on the acceptability of a school district's Prereferral Intervention Teams (PIT). The PIT process was implemented in one school district in an 18-month time period. The first study examined the overall acceptability of the PIT process. Results indicated organizational consultation methods and processes used in the PIT project were acceptable to PIT members.

The second study examined the association between PIT changes adopted by the schools in their processes and the acceptability of the consultation method. Qualitative analysis showed the teams did not view their roles as preventative. At the end of the first

year of the project, team members agreed to accept prevention as a goal of the PIT. The consultants noted that the teachers did not feel that they were a part of the team, which was evidenced by interviews, observations, a faculty survey, and inconsistent attendance of the referring teacher at the PIT meetings. However, when the project was completed, the teams had appointed members and referring teachers were encouraged to attend the meetings. Finally, throughout the study, team members reviewed records and gathered observational data as a form of problem-solving strategy. This study points toward stressing a preventive focus, including teachers as team members, and using systematic problem-solving for referrals. However, the authors noted that PITs seldom analyzed the outcomes of their efforts when interventions were planned.

In the third study, long-term acceptability of changes adopted by the PITs were examined. In the subsequent year after training, systematic problem-solving was acceptable to the teams, because it was incorporated into the teams' mission statement and implemented in their PITs. Although these three studies conducted by Truscott et al. (2000) showed changes in team behaviors, beliefs, and attitudes, they lacked empirical evidence of student outcomes related to specific academic or behavioral outcomes. The absence of assessment of student outcomes points out the great need for further research on the PIT training.

Truscott, Cohen, Sams, Sandborn, and Frank (2005) examined PIT regulations, prevalence, membership, goals, and intervention information from two national telephone surveys. Survey 1 examined regulations and recommendations from 51 state education departments (including Washington D.C.). It was found that 69% of the states mandate

prereferral intervention and 41% mandate prereferral intervention teams, but states provide little direction about how to implement such services, with only 14% having specified or recommended team composition. Survey 2 obtained information about elementary school PIT prevalence, membership, goals, and common intervention recommendations from 200 different elementary schools. It was found that 85% of the schools used multidisciplinary team members. In addition, there was not a clear school-based consensus on PIT goals and most PITs recommended additional services, testing, or easy classroom interventions and seldom recommended instructional modifications of substance. Based on the findings, it was suggested that research efforts need to concentrate on finding critical elements of effective PITs and evidenced-based interventions (EBI) increasing intervention repertoire. The noted need for research surrounding EBI suggests that student outcomes need to be measured since EBI involves progress monitoring and response to interventions.

Instructional Consultation Teams

Instructional Consultation Teams (ICT; Rosenfield & Gravois, 1996, 1999) focus on instruction and learning. Rosenfield and Gravois (1996) stated that ICTs are based on four assumptions: (a) all children are learners; (b) the focus needs to be on the match between the student's skills and his or her environment; (c) a collaborative problem-solving learning community needs to be fostered in a school; and (d) change is a process, not an event. Levinsohn (2000) compared an ICT process to a Student Support Team (SST) in which the children who went through the ICT process were instructionally matched using curriculum-based measurement (CBM). ICT team members in the study

were trained in a 20-hour session over the summer. Participants included several school professionals from different disciplines, such as school psychologists, school counselors, school nurses, and general education teachers. A teacher could begin the ICT process by making a referral to the ICT team. In this model, most of the interactions occurred between the referring teacher and a consultant, although the Instructional Consultation Team was available to help with the most difficult referrals. For clarification, Student Support Teams (SST) focused more on interventions and did not employ a specific strategy for problem-solving.

Levinsohn's (2000) study looked specifically at treatment integrity and used curriculum-based measures (CBM) to define the reading concern in such a way that it was observable and measurable. The results of Levinsohn's study indicated that although the students in the ICT group scored lower in reading than the SST students at the outset of the study, students in the SST condition were placed in special education at a rate seven times higher than ICT children by the end of the study. According to Telzrow et al.'s (2000) conceptual work, this study clearly used the baseline data and action plan development, and Levinsohn argues that these contribute to more appropriate referrals to special education. This is important to note because referral rates can be considered a type of student outcome, according to Levinsohn's definition. In addition, reading achievement was reported based on scores of children treated in the SST group and children who went through the ICT group, and neither group passed the district criterion for fluency levels at the end of the study. Levinsohn's study is unique in that no other

research has compared student outcomes (referral rates) based on two problem-solving models. This not withstanding, specific, idiographic data are still needed.

Intervention Assistance Teams

Rock and Zigmond (2001) examined 140 students across nine schools in grades K-5 who were referred for Intervention Assistance Teams. The authors tracked data including the percentages of students: retained who were referred for intervention assistance; promoted who participated in the intervention assistance; referred for special education who participated in the intervention assistance; participated in intervention assistance one year who were referred for intervention assistance the subsequent year; and experienced a delay in being referred to special education.

The number of students referred for intervention assistance ranged from 6 to 24 depending on the school. The study yielded varying results for retention by school as well. For instance, in one school, retention rates of students referred for intervention assistance was 80%, although another school retained only 8.3% of students referred for intervention assistance. The percentage of students across all schools who were referred for special education was 25.7%. Furthermore, by the end of the year, 74.3% of students referred to intervention assistance for academic and behavior challenges appeared to have had their concerns resolved without a referral to special education (Rock & Zigmond, 2001). Twenty-seven cases came through the intervention assistance process in the subsequent year and 23 of the 27 cases were available to use through the duration of the study, with 7 having been promoted, 5 retained, and 11 placed in special education. Because 11 students were placed in special education, Rock and Zigmond raised a

concern that a delay in the process of identifying children for special education services may violate the child's right to a Free and Appropriate Education. Furthermore, students who were African-American were referred and deemed eligible for special education more often than European-American children. Although this study examined placement rates, student outcomes related to specific academic and behavioral outcomes were not reported.

Intervention-Based Assessment

McNamara and Hollinger (2003) examined two types of multidisciplinary problem-solving team methods used to address the needs of children with learning and behavior problems. Specifically, the Intervention-Based Assessment (IBA) model was compared to the Intervention Assistance Teams (IAT) model in a sample of 80 Ohio schools involved in the IBA waiver program that were also involved in the pilot study during the baseline year immediately preceding the implementation of IBA. The study was conducted in order to document the implementation of an eligibility-linked problem-solving project with respect to several special education reform goals. The IAT and IBA methods differed from each other in several ways. IBAs are school-based multidisciplinary teams that serve as the primary resource for addressing the needs of children with academic or behavior challenges. The IBAs, described in this study, examined referrals to special education by considering the intensity of the interventions and matching characteristics of the child with the federal definition of a disability. The IBAs were required to document eligibility in a written report that included baseline behaviors and any progressing monitoring data describing the behavior of concern. The

primary emphasis of the IBAs were on the quality of interventions shown to address the area of concern and problem-solving continued until an effective intervention was found to adequately address the student's problem in school. The Multifactored Evaluation approach (MFE) was employed by school personnel when there was suspicion of a disability and the school was required by the state to make decisions for special education eligibility, which for the IBA method consisted of observing the student, assessing the environment, conducting interviews, monitoring planned interventions, and identifying those interventions found to be effective. MFE under the IBA method required direct measurement and documentation of baseline and progress-monitoring of interventions.

The IAT model, like the IBA model, also required delivery of interventions prior to making a decision of special education eligibility but it did not require the teams to identify effective interventions and required only a written summary of interventions attempted. That is to say, there were not provisions for collecting data and reporting progress. Moreover, the MFE, which was also required by the state to make decisions for special education eligibility, differed from the IBA method in that under the IAT method the MFE consisted of instruments that were administered by trained professionals with emphasis on the results of standardized, norm-referenced tests to help make determinations for special education eligibility.

When comparing students who went through the IBA approach versus the IAT approach, 53% of cases underwent MFE using the IAT approach, while 26% of cases underwent MFE when the IBA method was used (McNamara & Hollinger, 2003). Sixty-three percent of the children were found eligible for special education using the IAT

approach, and 77% were found eligible when the IBA eligibility determination procedure was used (McNamara & Hollinger). Thirty-six cases were found ineligible for special education services using the IAT method, in comparison to 17% who were found ineligible by teams employing the IBA procedure. Rather than only considering overall rates regarding special education, this study contributes to the literature concerning student outcomes of intervention teams because it examines the reductions in inappropriate MFE rates, which are rates that result in finding no special education eligibility. This study also contributes to the literature because it compared two intervention models used in one state rather than comparing an intervention model to a condition in which problem-solving was not employed. Specifically, outcomes under the pilot model of IBA were compared with the outcomes using an earlier intervention model (IAT; McNamara & Hollinger). This highlights the importance of interventions playing a crucial role in the eligibility determination process. This study also supports the notion that team-based problem-solving methods differ in many respects, including the quality of data collection and the degree of perseverance in devising and documenting effective interventions.

Collaborative Educational Teams

Hunt et al. (2003) examined the effectiveness of a general education/special education collaborative teaming process, known as Collaborative Educational Teams (CET), concerning academic and social behaviors of six students in a general education classroom at two different elementary schools. Three of the six students were identified with severe disabilities, such as cerebral palsy, autism, and muscular dystrophy. All of

the children had Unified Plans of Support (UPS; see Hunt, Soto, Maier, Miller, & Goetz, 2002) related to academic underachievement or the child's disability. UPS is a process involving regular team meetings to develop supports for students that includes a built-in accountability system and the flexibility to make changes as needed. A major focus of UPS is collaborating in order to create and implement individual instruction and supports to help increase academic and social success for students in the general education setting. The teams met once a month for about 1 hour and 30 minutes to initially develop and then to continue to refine support plans. The UPS meetings were designed to be collaborative in that each member of the team could share his or her knowledge, skills, and experience while building on the ideas of others. This collaborative problem-solving approach included four key elements: (a) identifying the academic and social profile for each child, (b) developing supports to increase academic success or engagement in classroom activities (e.g., increase the students' attempts to initiate communicative interactions by asking questions, making comments or answering questions), (c) implementation of the plans, and (d) a built-in accountability system. Each UPS was individualized with curricular or social supports. Student outcomes were measured using team interviews and systematic observation by use of The Interaction and Engagement Scale to determine non-engagement levels, that is, lack of participation in class activities by way of not asking questions, not making comments or not answering questions.

After implementing academic and social supports, non-engagement levels decreased with average scores ranging from 40% to 23% during baseline to .2% to 5% after treatment. In addition, students were more often initiating interactions with their

peers from an average range of .7% to 14% to an average range of 18% to 29% after treatment. Open-ended interviews were conducted with team members to gain their perceptions of changes in classroom behavior and academic progress for the students produced themes of increased assertiveness, demonstration of pride, increased positive interactions, increased levels of requesting help, and enjoyment in helping classmates. These findings suggest student outcome measures that are consistently implemented through the UPS developed through a collaborative teaming processes increased student engagement and student initiated interactions (Hunt et al., 2003).

Creative Problem Solving for General Education Intervention Teams

The Creative Problem Solving for General Education Intervention Teams (CPS for GEI) teams process is an approach for school-based intervention teams that is based on the framework of Creative Problem Solving (CPS). CPS is a problem-solving process that is based on the 1960's work of Alex Osborn and Sidney Parnes (as cited in Isaksen, Dorval, & Treffinger, 2000). CPS is based on five principles: (a) everyone has the potential to be creative; (b) everyone can express his or her creativity; (c) each person's creativity is related to his or her interests, preferences and/or styles; (d) people can be both productive and creative; and (e) creativity levels can be enhanced.

CPS offers a four-stage framework for change: (a) Planning your Approach, (b) Understanding the Challenge, (c) Generating Ideas, and (d) Preparing for Action (Isaksen et al., 2000). This four-stage framework is used during the problem-solving process. After a university based center observed inefficient team processes, the CPS process was adapted to General Education Intervention (GEI) teams, thereby named the CPS for GEI

teams process. CPS for GEI offers a specific process to make efficient use of group members' time. CPS for GEI teams go through the four stages in a prescribed manner in order to help the referring teacher and student with academic and/or behavior issues.

It should be noted that CPS for GEI teams is a very specific process and requires training. Teams that use the CPS for GEI teams process are trained during an all-day seminar. The teams receive support visits from their "coach" throughout the school year and a refresher day of training is offered later in the same school year.

According to Buddle et al. (2005), it is important to understand that there are three distinct team roles. The first role is that of the referring individual. This person, usually the student's teacher, has already attempted several interventions to address a student's challenge, but is in need of more intervention ideas. The second role is the resource group, and usually includes 4 to 10 educators or specialists, including school psychologists, social workers, and/or nurses, who possess expertise and experience. The resource group helps generate ideas and provide support for the teacher to implement interventions. The final role is the facilitator, who can be any team member, and conducts the meetings and monitors the process of the meeting.

The CPS for GEI teams process involves an initial meeting and at least one follow-up meeting. The initial team meeting consists of three parts: Understanding the Challenge, Generating and Selecting Interventions, and Action Planning. Each component takes approximately 15 minutes, with a total meeting time of 45 minutes for the meeting (Bahr et al., 2006; Buddle & Freeman, 2002). During each part of the process, the team goes through a generating and focusing cycle. During the generating

portions of the meeting, team members generate novel ideas by calling out ideas and writing these on Post-Its™ notes or half-sheets of paper, which are displayed for all to read. Focusing comes next and relies on the referring teacher to narrow the options by analyzing what has been generated and choosing ideas or interventions (Bahr et al.; Buddle & Freeman).

During the first 15 minutes of the initial meeting, which is called Understanding the Challenge, the team examines the behavioral definition of the problem and reviews baseline data. With this in mind, the team reviews a background information form which was completed by the referring teacher prior to the meeting and is distributed to team members ahead of the meeting. The background information form consists of relevant information including demographic information, personal information, strengths, a description of the problem, and previous interventions attempted. Once the background information form is reviewed, the team lists the student's individual strengths. Second, the team lists the challenges for the student. Next, the referring teacher is asked to confirm a desired outcome, or where he or she would like to see the child perform. The desired outcome is stated in a brief and broad manner (e.g., "We want to improve this student's math skills.").

Next, the team generates critical questions through a tool called Brainstorming with Post-Its™. This is done by writing a critical question on a Post-It™ note and then saying it aloud for all team members to hear. This is then posted for all to see as well. Critical questions have stems, such as "how to" and "in what ways might we," that, if answered, will help the student achieve the desired outcome. Then the referring teacher

focuses, which involves choosing 5 to 7 critical questions that are the most important in meeting the needs of the student. The Post-Its™ with the critical questions chosen by the referring teacher are then numbered and displayed for the team.

In the next phase of the meeting, Generating and Selecting Interventions, the team generates interventions based on the student's strengths that were specified earlier in the meeting. These interventions are intended to be directed by principles of empirically-based interventions. As previously mentioned, "Building Interventions Based on the Student's Strengths" is proposed in the current study as a problem-solving component. Each team member writes a list of interventions that address the critical questions selected by the referring teacher. Then team members are paired and asked to review their intervention lists in order to develop and continue generating interventions. These interventions are then written individually on a half-sheet of paper, called out for all to hear, and posted under the corresponding critical question. Once the teacher and the facilitator feel as though enough interventions are generated for each critical question, the referring teacher selects approximately 3-5 interventions that are manageable, utilize the strengths of the student, are based on best practices, and address the critical question.

Finally, during the Action Planning stage of the meeting, the team writes a measurable goal in order to evaluate the success of each intervention. The measurable goal is written on a wall chart, and the interventions chosen are posted beneath it. Beside each intervention are two columns: "Who or What Can Help?" and "Date to Begin." Together, the team then generates possible resources, including school personnel and materials, to help implement the intervention and support the referring teacher. Team

members who have experience or expertise in the area of concern also participate as resources. The date of implementation is set for each selected intervention. The Action Plan is then copied to a form with two additional columns that are completed at the follow-up meeting: "Degree of Success" and "What Did You Learn About the Student?" At the end of the meeting, the team sets a date for a follow-up meeting (usually 4 to 6 weeks later) that allows for an adequate period of time for interventions to be implemented as designed. The referring teacher and all involved in the interventions leave the initial meeting with a copy of the Action Plan and a date for the follow-up meeting.

Grimes (2001) and McKinney (2001) both examined Creative Problem Solving and its use with GEI teams. Grimes studied treatment acceptability using 117 General Education Intervention teams from 24 elementary schools in a single state. She used a survey to assess CPS for GEI team members' familiarity with, judgments of acceptability of, and perceived effectiveness of the interventions developed through the process. Grimes' study indicated that teams trained in the CPS for GEI teams process raised familiarity ratings of interventions and, for some, acceptability and perceived effectiveness ratings. Furthermore, teams trained in the school-based, problem-solving method increased the team's familiarity with interventions.

McKinney (2001) compared CPS for GEI teams trained schools to untrained schools' in terms of their referral rates to special education and their team effectiveness. McKinney found no significant differences when comparing 12 schools trained in CPS for GEI teams and 12 schools not trained in the process with respect to the number of

referrals to the general education intervention team. However, the number of non-verifiable referrals to special education--that is, referrals of students who did not qualify for special education--for teams trained in CPS for GEI teams process decreased from 35% one school year to 14% the following school year. Although many of these results were promising, and the drop in referral rates may be included in Levinsohn's (2000) definition of student outcomes, there is no research using the CPS for GEI teams process examining specific student outcomes.

In a separate study, Bahr et al. (2006) investigated two research questions related to CPS for GEI over a two-year period. One research question asked, "Is the CPS for GEI process effective relative to a non-CPS team process?" The second research question asked, "Is there a difference between direct training by project staff and a train-the-trainers approach?" First, 24 school teams were equally divided and randomly assigned to either a control group or an experimental group in which the teams were trained via the CPS for GEI process. The teams were then compared along several outcomes measures, such as type of team, length of initial team meeting, ratings of perceived effectiveness, follow-up, and quality indices. Results for research question one indicated that after the intervention a majority of experimental teams reported completing their meetings within the expected time frame (40 to 50 minutes). Second, team effectiveness, as determined by the total scores on the *Team Effectiveness Scale*, was higher at postintervention than at preintervention for the group trained in the CPS for GEI process. Furthermore, the teams trained in the CPS for GEI process had higher scores than the control group at postintervention. With regard to the overall adequacy of follow-up, both the experimental

and control groups reported similar frequencies on some follow-up practices, such as use of written or verbal follow-up procedures, and no statistical differences were found. However, at postintervention the teams trained in the CPS for GEI process reported higher levels of overall adequacy of follow-up and time devoted to follow-up. Finally, the teams trained in the CPS for GEI process increased their familiarity with and use of quality indices, or indicators that have been found to correlate positively with desirable treatment outcomes, from pre- to postintervention, while the control group decreased their familiarity ratings.

For the same study, research question two was answered by examining teams that received the CPS for GEI training directly from project staff and a group of teams that received CPS for GEI training from school district employees who were trained by the project staff (Bahr et al., 2006). Participants included twelve teams that were CPS for GEI trained by the project staff and 10 teams received their CPS for GEI training from school district employees. There were no statistical differences in team composition, referrals for academic problems, and desired outcomes. Overall, outcomes were comparable across types of training with the exception that the district trained teams conducted follow-up meetings in a shorter amount of time as compared to the project staff trained teams. The findings support district level training, therefore, allowing more teams to be trained in CPS for GEI method.

Summary and Critique

Based on this review, many of these studies included at least one best practice indicator based upon the work of Telzrow et al. (2000) and Upah and Tilly (2002). Some

studies (e.g., McKinney 2001) suggest that school-based intervention teams make more appropriate referrals for special education testing (i.e., referrals for testing of students who qualify for special education as opposed to those who do not), while other studies demonstrate an increase in teacher's acceptability ratings of the interventions developed through the problem-solving process (e.g., Grimes, 2001). However, only ICT, IBA, CET, and CPS for GEI processes considered student outcomes as related to specific academic and behavioral concerns, but the student outcomes examined usually referred to referral rates to special education rather than examining actual student progress. Research considering specific student outcomes is scant as related to teams and specific student outcomes.

An important finding across many studies is that positive outcomes for teams, and in some cases positive outcomes for students, occur through the use of team problem-solving approaches. Levinsohn's (2000) study, in particular, attributed the positive results to the collaborative, problem-solving process. However, training in these processes is not only expensive, but also time consuming. Therefore, convincing participants of the utility of being trained and using a problem-solving process is crucial to enhance team performance, which affects student outcomes. This further supports the need for more research based on specific academic or behavioral outcomes for students.

According to Iwata (1991), the applied research literature as a whole needs evidence for methods that increase effectiveness and efficiency. Therefore, research is needed not only on student outcomes, but also on outcomes related to a GEI process and/or team approach. Rosenfield and Gravois (1999) note that not all schools use a team

approach because its effectiveness is often in question. This may be one reason why data on school-based intervention teams and student outcomes are so scarce. However, Rosenfield and Gravois argue that a team may be more effective than one person's efforts. This is because the professional world continues to create and develop people who are skilled in one particular area, and a multidisciplinary team in a school, much like a General Education Intervention team, brings professionals together from different disciplines to better serve a particular child. Developing a school team may provide better ways to serve children because it allows strengths from team members to be used in ways that benefit students. Therefore, not only are more data needed on student outcomes, more data are also needed on teams.

The Current Study

The present investigation examined student outcomes using the CPS for GEI teams process. The current study is based on both some of Upah and Tilly's (2002) and some of Telzrow et al.'s (2000) components. The components used in the study were chosen based on information that was available to the examiner because the data used in the study was collected by a university-based center. This study differs from previous research in several important ways. First, this study looks specifically at the CPS for GEI teams process with regard to student outcomes data. Although Grimes (2001), McKinney (2001), and Bahr et al. (2006) examined the CPS for GEI teams process, specific student outcomes were not examined. Second, this study examined a specific type of prereferral team (CPS for GEI teams) using best practice variables to determine which had the greatest impact on student outcomes. The reauthorization of IDEA emphasizes that

educators will need to examine student's responses to interventions. Therefore, knowing the variables that better predict student outcomes will provide more insight into where more data are needed when a student is going through the CPS for GEI teams process. It will also be helpful to have an understanding of the relationship between the area of concern (specific academic subject or behavioral difficulty) and student outcome data. Finally, independent outcomes were derived from analysis of progress-monitoring data, rather than self-report or survey, which Flugum and Reschly (1994) judge to be superior to self-ratings.

Four important questions were investigated using the CPS for GEI teams process:

Research Question 1

How did students referred to the CPS for GEI teams progress based on student outcomes relative to the area of concern (Behavior, Language Arts, Language Arts and Math, or Math)? It is important to track the area of concern given that research demonstrates that many referral problems are related to reading difficulties (see Bahr et al., 2006); therefore, research is lacking in other areas as related to school-based teams. It was expected that when Language Arts is the area of concern student outcomes will be higher as compared to student outcomes when Behavior, Language Arts and Math, or Math are the concerns.

Research Question 2

Do schools trained in the CPS for GEI teams process differ in the overall quality of the action plans? It is important to determine whether differences exist between schools trained at the same time in the same process in order to point to or disregard

differences in student outcomes based on intra-school characteristics. Although each school received the same training, school cultures differ as do levels of expertise of team members across schools. Therefore, it was expected that the overall quality of the action plans would differ across schools.

Research Question 3

Is there a difference in student outcomes across schools? This is important to note based on information gained from Research Question 2. In other words, if the schools do differ in overall plan quality, it is important to compare those results with possible differences in student outcomes across schools. It was expected that there would be differences in student outcomes across schools.

Research Question 4

What impact did the CPS for GEI teams process have on student outcomes in terms of problem-solving components, including definition of the problem, baseline data, goal setting, action plan, and interventions built on student strengths? Problem-solving components were derived from two sources: a replication of several problem-solving components in the Telzrow et al. (2000) study and the unique intervention process used for CPS for GEI teams process. These indicators include (a) definition of the problem, (b) baseline data, (c) goal setting, (d) action plan development, which is referred to as action plan in this study, (e) interventions built on the student's strengths, and (f) student outcomes. It was expected that definition of the problem, goal setting, action plan, and interventions built on the student's strengths would be correlated to student outcomes. In addition, was also anticipated that definition of the problem, goal setting, action plan, and

interventions built on the student's strengths were all hypothesized to predict student outcomes.

CHAPTER 2

METHODS

Participants

Six CPS for GEI teams that were trained in a Midwestern state participated in the study. The teams were part of six different elementary schools across one state. The teams had varying numbers of students referred to the team ranging from 4 to 26 with a total of 76 individual cases reviewed but only 32 cases included student outcomes data. Of the 32 cases with student outcomes data, 18 (56%) were males, and 14 (44%) were females. In addition, the majority of students were Caucasian (n = 24, 75%), while seven were African American (22%) and one was multi-racial (3%). Grade levels varied from Kindergarten to sixth grade with five cases in Kindergarten, seven cases in first grade, 10 cases in second grade, three cases in third grade, four cases in fourth grade, two cases in fifth grade, and one case in sixth grade. The teams were recruited by an endowed, university-based center, rather than the researcher. The teams were part of a larger study conducted by the university-based center. The data used for the current study belonged to the university-based center, but permission was granted for the researcher to examine the data for purposes of this study.

The university-based center developed the CPS for GEI process and project staff trained school teams across the state in the process for several years. The project staff trained each team in the CPS for GEI process in one session in the fall. In the spring of the same school year, each team received a refresher course as well. In addition, each team was assigned a coach from the project staff's training team who would provide follow-up visits to the school to ensure the team was implementing the process correctly, which was done through evaluation and feedback procedures developed by the project staff to help ensure the teams were implementing the process with integrity. After the teams received the training, the coaches may have also assisted in training the entire school in the process.

The teams in the study had become aware of the CPS for GEI team process through information sent to the special education administrator or via information from other schools or other state agencies. Once the principal of a school became interested, a CPS for GEI project staff member interviewed the principal, who had to commit to providing time and resources for the team to participate in the CPS for GEI team process. This included allowing team members to attend trainings in both the fall and spring. For the training sessions, all of the schools being trained traveled to one location to be trained in the specific process by the project staff for a day long training session in the fall and one day in the spring for what was considered a refresher course. Each principal also (a) ensured time and pay for substitutes that permitted team members to attend the trainings; (b) allowed the team to spend 45 minutes on each case; (c) agreed to collect research data for the project; and (d) made other commitments to make certain the process was carried

out effectively. It should be noted that the school could withdraw from the study at any time without penalty. GEI teams in the study did not receive any monetary compensation for their participation; however, training and materials were provided to all participating teams through a grant.

Each GEI team consisted of approximately five or six members. Members of each team varied and were frequently voluntary. Many teams included an administrator, a school psychologist, a counselor, one or two general education teachers, and a special education teacher, although teams could include other professionals who served children in the educational setting, such as social workers. The teams consisted of the same core members throughout the year. The teams addressed approximately 10 referrals per school over the course of one academic year for students who were brought to the GEI team by the student's teacher. The students either had academic or behavioral difficulties. Each team was trained in the process during the fall of 2005 by CPS for GEI project staff. The CPS for GEI project staff included full-time employees of, or consultants with, a university-based program and were highly trained in the CPS for GEI method.

Instruments

Team Accomplishment Sheet (TAS)

The TAS (See Appendix B) is an instrument designed by CPS for GEI project staff to help the university-based center evaluate the process. The TAS is used to track information throughout the CPS for GEI process and is used to collect general data for the CPS for GEI project staff regarding the process. This includes the outcome of cases, specifically, whether a child is referred for special education. To date, there have not

been any validity or reliability analyses conducted on the TAS. The data on the TAS are recorded by the schools. For the purposes of this study, several variables on the TAS were used. These included the following: primary area of concern (Language Arts vs. Math vs. Language Arts/Math vs. Behavior), baseline assessment data, and updated assessment data. A GEI team member at each school completed the TAS.

Action Plan

The Action Plan (See Appendix C) is an instrument developed by CPS for GEI project staff that lists the interventions chosen for the student, a goal for the student, baseline data, and follow-up data (completed at the follow-up meeting). The Action Plan was completed by a CPS for GEI team member during the first meeting, and at subsequent meetings if changes to the form were made. The researcher used specific information from the Action Plan, including the interventions generated by the team and chosen by the referring teacher, who or what could help implement the interventions, the degree of success for each intervention, the student's strengths assessed and generated by the team, the date of the follow-up meeting, and the critical questions generated and chosen by the team, which helps to define the problem. A GEI team member at each school completed the Action Plan during the meeting as part of the process.

Rubric

The rubric used in this study is essentially a coding device replicated from Telzrow et al. (2000; See Appendix D). The rubric was used to evaluate problem-solving components documented in the TAS and the Action Plan. The rubric consists of several 5-point Likert scales with higher scores reflecting higher quality indicators. Telzrow et al.

used the rubric in a similar study and found it to be reliable (.87 to .97 inter-rater agreement). Five of the eight components on the scale as discussed by Telzrow et al. were used in the current study, with an additional one, interventions built on the student's strengths.

The six problem-solving components were operationally defined. The first problem-solving component is a definition of the problem, which includes a clear definition or description of the problem behavior. This is a statement that outlines the area of concern in a specific, observable, and measurable manner. The problem definition ensures that everyone involved shares a common understanding of the area of concern. Furthermore, the definition must be objective and measurable (refers to observable characteristics of the behavior), defined in behavioral terms, and be related to the student's area of concern, which is identifiable (Telzrow et al., 2000). For the purposes of this study, the definition of the problem was assessed on the rubric through the critical questions listed on the Action Plan. If the problem was described in measureable, observable, or behavioral terms, and was related to academic or behavioral functioning, a Likert scale score of five on the Rubric was given. However, at the other extreme, if the target behavior was not identified, a Likert scale score of one was given. Scores of two, three or four were given based on specific criteria for each score that fell in between a score of one or five.

The second problem-solving component is baseline data, and this is described as a direct measurement of the target behavior in the natural setting before interventions are implemented. The baseline data serve as a means to verify the existence of a problem,

evaluate the effectiveness of interventions, and evaluate student progress. In addition, at least three data points are needed in order to provide a consistent illustration of the target behavior (Telzrow et al., 2000). For the current study, baseline data was assessed on the Rubric via information from the Action Plan, which clearly requests baseline data. If samples of direct measures of the student's behavior were reported (e.g., at least three data points), a Likert scale score of five was given. On the other end of the scale, a Likert scale score of one was given if only estimates about the student's performance were given.

Goal setting was the third problem-solving component. Goal setting is the act of stating the desired outcome that the intervention team would like to observe the student performing. In the present study, there is a specific place on the Action Plan to write the goal. It should be noted that goal statements are based upon a problem behavior and specify the time frame, condition, behavior, and criterion (how much and when) for which the behavior is to be performed. Furthermore, a goal statement should be stated in measurable terms (Telzrow et al., 2000). In this study, goal setting was assessed on the Rubric by way of the Action Plan as it has a specific place to write the goal and specifies to include measures of success. If the desired goal was stated with specific and clear criterion (e.g., how much and when), a Likert scale score of five was awarded. On the other hand, if there was not a specific goal stated, a Likert scale score of one was given.

Action plan development was the fourth problem-solving component and is equivalent to the Action Plan in this study. It specifies who is to be involved in implementing the intervention and when the intervention will begin. Other relevant

information includes where and how the intervention will be implemented, as well as procedures and strategies to be followed (Telzrow et al., 2000). In this study, action plan development was assessed on the Rubric via the Action Plan. The more details about the logistics of the intervention, such as describing what would occur and when the intervention would take place, the higher the Likert scale score on the Rubric. If the plan was vague and only listed general information about the intervention, a lower Likert scale was given on the Rubric.

The fifth problem-solving component was not derived from Upah and Tilly (2002) or Telzrow et al. (2000). Rather, it was based on the conceptual needs related to the work of CPS for GEI teams and is named "interventions built on the student's strengths." This component was the only one in the study that was not based on the rubric developed by Telzrow et al. This is because generating student's strengths is unique to the CPS for GEI teams. These strengths are used in the process to help generate and choose interventions. The researcher used the rubric developed by Telzrow et al. as a guide to develop Likert scale ratings to address the component of interventions built on the student's strengths. Information from the Action Plan was used to determine Likert scale scores on the Rubric. Specifically, if the student's strengths were written on the Action Plan and the interventions chosen appeared to be based on at least two of the student's strengths, a Likert scale score of five was given. On the other extreme, if it did not appear as though the strengths were considered or were not even written on the Action Plan, a Likert scale score of one was given.

Student outcomes was the sixth problem-solving component. For the purposes of this study, the student outcomes were defined by measures on the Rubric and refer to student performance at follow-up in the CPS for GEI process as compared to baseline data. Specifically, a score of five on the rubric indicates that there is evidence the student's performance improved from baseline and the target goal was achieved or exceeded. On the other hand, a rubric score of one indicates that there was evidence that the student regressed compared to baseline. The student outcome data used includes a variety of data sources and is based on what each individual CPS for GEI team chose to use for the student, such as academic scores (e.g., spelling test scores, curriculum-based measurement probes, and similar data) or behavioral change scores (e.g., classroom observations using frequency counts or momentary time sampling). Information from the Action Plan and TAS was used to determine the Likert scale score regarding student outcomes. If there was evidence that performance improved from baseline and the target goal was achieved or exceeded, a Likert scale score of five was given. If, however, the student regressed from baseline, a Likert scale score of one was awarded.

Procedures

The data collected were part of a larger study and the university-based center granted the researcher permission to examine the data for the purposes of the study. This study was approved by a university review board on human subjects with all identifying information, including names of schools, names of school staff, and any identifying information concerning the students, unknown to the researcher. The project staff at the fall training identified and explained data collection procedures to the schools

participating in CPS for GEI training. The project staff asked the teams to collect certain data that would be used for research purposes. These data included a Team Accomplishment Sheet (TAS) for each team and a corresponding Action Plan for each student in the process. To assure confidentiality, the names of schools, the GEI team members, and students in the process were coded and unknown to the researcher. Instead, student initials or case numbers were used to correspond with the individual TAS and Action Plan sheets. All participation was voluntary and teams could withdraw at any time during the study without consequences.

Interrater agreement was calculated from the Likert scale rubrics evaluating problem-solving components. The researcher served as the criterion rater. A school psychology graduate student served as the second rater. This second rater was trained by the researcher using the rubric and mock TASs and Action Plans. After the second rater was trained, she was given 20% of the data. A minimum criterion of 80% agreement on each of the six scales between the criterion rater and the second rater was the goal. For all cases available, interrater agreement was achieved at 88.16% (Agreements/Agreements + Disagreements X 100).

Design and Analysis

Research Question 1

For research question one, "How did students referred to the CPS for GEI teams progress based on student outcomes relative to the area of concern (Behavior, Language Arts, Language Arts and Math, or Math)?" two analyses were conducted. First, in order to determine if there was a difference in the distribution of student outcomes based on

area of concern, a 5 (Likert scale score of student outcomes) X 4 (Behavior, Language Arts, Language Arts and Math, Math) chi-square was conducted. For the chi-square, significance was determined by a criterion of $p < .05$. The Likert scale score was the dependent variable and the independent variable was the area of concern (Behavior, Language Arts, Language Arts and Math, Math). It was expected that when Language Arts is the area of concern student outcomes would be higher as compared to student outcomes when Behavior, Language Arts, Language Arts and Math, or Math are the concerns.

Second, a one-way ANOVA was conducted to determine whether the average outcome scores by area of concern were statistically different. For this analysis, significance was determined by a criterion of $p < .05$. The average outcome scores was the dependent variable and the independent variable was the area of concern (Behavior, Language Arts, Language Arts and Math, Math). It was expected that when Language Arts was the area of concern average student outcome scores will be higher as compared to average student outcomes scores when Behavior, Language Arts and Math, or Math are the concerns.

Research Question 2

For the second research question, "Do schools trained in the CPS for GEI teams process differ in the overall quality of the action plans?" a one-way ANOVA was conducted to determine the interaction effects of the factors. For this analysis, significance was determined by a criterion of $p < .05$. The overall plan quality was the dependent variable and independent variable, or factor, was the individual school. It was

expected that overall plan qualities would differ across schools. If there were differences in overall plan qualities across schools, Fisher Least Significant Difference post hoc analyses was conducted to determine which group means differed from one another. For the post hoc analysis mean differences would be considered significant at the .05 level.

Research Question 3

For research question three, "Is there a difference in student outcomes across schools?" a one-way ANOVA was conducted to determine the interaction effects of the factors. For this analysis, significance was determined by a criterion of $p < .05$. The student outcomes scores on the rubric was the dependent variable and the independent variable, or factor, was the school. It was expected that there would be differences in student outcomes across schools. If there were differences in student outcomes across schools, Fisher Least Significant Difference post hoc analyses was conducted to determine which group means differed from one another. For the post hoc analysis mean differences would be considered significant at the .05 level.

Research Question 4

For research question four, "What impact did the CPS for GEI teams process have on student outcomes in terms of problem-solving components, including definition of the problem, baseline data, goal setting, action plan, and interventions built on student strengths?" two analyses were conducted. First, a series of correlations was conducted in order to determine the strength of the relationship between the variables. For this analysis, correlation was considered significant at the .05 level. The rubric score for student outcomes was the dependent variable and the independent variable was the

problem solving component (definition of the problem, baseline data, goal setting, action plan, and interventions built on the student's strengths). It was expected that definition of the problem, goal setting, action plan, and interventions built on the student's strengths would be correlated to student outcomes.

For the second analysis, a stepwise regression analysis was conducted to predict the variance in the dependent variable. The dependent variable was the student outcome and the independent variable was the problem-solving component (definition of the problem, baseline data, goal setting, action plan, and interventions built on the student's strengths). For this analysis, regression was considered significant at the .05 level. It was expected that definition of the problem, goal setting, action plan, and interventions built on the student's strengths would predict student outcomes.

CHAPTER 3

RESULTS

Data were collected from six schools trained in the CPS for GEI teams process in the fall of 2005. There were a total of 76 student cases available for analysis across the six schools, but only 32 cases included student outcomes data. A significance level of .05 was used to analyze the quantitative data because the sample size was small.

Student Outcomes by Area of Concern

The first research question, "How do students referred to the CPS for GEI process progress based on student outcomes (Likert scale scores) relative to the referral problem (Behavior, Language Arts, Language Arts and Math, or Math)?" was examined using outcome data derived from the TAS and the Action Plan, which was recorded on the Rubric. Likert scale scores ranged from one to five with higher scores reflecting higher quality indicators. For these analyses, a Likert scale score of five was given if there was evidence that the student's performance improved from baseline or met his or her goal. If however, the student regressed from baseline the lowest Likert scale score was given. Two analyses were conducted to answer this question. First, a 5 (Likert scale score for student outcomes) x 4 (Behavior, Language Arts, Language Arts and Math, Math) chi-square was used to analyze these data to ascertain the degree to which there was a

difference in the distribution of student outcomes based on area of concern. Table 1 presents the frequencies and percentages for this data. The distribution of student outcomes was not significantly different, based on area of concern, $\chi^2(12, n = 32) = 11.85, p = .458$.

The outcome data can be considered interval level data because the scores from the rubric form a somewhat equidistant continuum. Therefore, an ANOVA was conducted to determine whether the average outcome scores by area of concern were statistically different (see Table 2 for means and standard deviations). Average student outcomes were not significantly different across areas of concern, $F(3, 31) = 1.12, p = .356$. Based on the results of this analysis, student outcome scores were not significantly different across areas of concern.

Quality of Plan by School

For the second research question, "Do schools trained in the CPS for GEI process differ in overall quality of action plans?" a one-way ANOVA was conducted. The overall rubric score was the dependent variable. Results indicated that the quality of the plans differed significantly by schools (see Table 3), $F(5, 75) = 10.67, p < .001, \omega^2 = .39$. Fisher Least Significant Difference post hoc analyses indicated that the action plans produced at School 102 ($M = 11.63$) received significantly lower ratings compared to the average overall quality scores awarded to each of the other schools with mean differences ranging from -9.34 to -6.22. The action plans from School 103 ($M = 21.00$) were significantly higher in quality compared to those produced by Schools 102, 104, 107, and

201 with mean differences ranging from 2.54 to 9.36. The action plans produced by the other schools on average were similar to one another.

Student Outcomes by Schools

For research question three, "Is there a difference in student outcomes across schools?" an one-way ANOVA was conducted (see Table 4). Student outcomes scores on the rubric were the dependent variable. There was a significant difference between the schools with regard to student outcomes, $F(5, 31) = 5.68$, $p = .001$, $\omega^2 = .42$. Fisher Least Significant Difference post hoc analyses showed that School 102 ($M = 1.00$) had the significantly lowest student outcomes, while School 103 ($M = 4.89$) had the significantly highest student outcomes. The other schools were similar to one another.

Student Outcomes and Problem-Solving Components

For research question four, "What impact did the CPS for GEI teams process have on student outcomes in terms of problem-solving components, including definition of the problem, baseline data, goal setting, action plan, and interventions built on student strengths?" a series of correlations were conducted (see Table 5). Four correlations were significant. First, setting a Goal and Baseline Data were significantly positively correlated ($r = .34$, $n = 32$, $p = .003$). Thus, if the quality of the Goal was high the quality of Baseline Data was also high. Second, Goal setting and Action Plan were significantly positively correlated ($r = .52$, $n = 32$, $p < .001$). Thus, if the quality of Goal Setting was high then the Action Plan quality was also high. Third, setting a Goal and Building Interventions Based on the Student's Strengths were significantly positively correlated ($r = .44$, $n = 32$, $p < .001$). Thus, if the quality of Goal was high the quality of Building

Interventions Based on the Student's Strengths was also high. Finally, the Action Plan and Building Interventions Based on the Student's Strengths were significantly positively correlated ($r = .47$, $n = 32$, $p < .001$). Thus, if the Action Plan is quality was high then Building Interventions on the Student's Strengths was also high.

Multiple Regression Analysis Predicting Student Outcomes from Best Practice Indicators

In order to address the research question in this study related to the impact the CPS for GEI teams process had on student outcomes, a stepwise regression analysis using student outcomes as the dependent variable was conducted. The best practice indicators scores served as the independent variables. The only best practice indicator to enter the equation was Quality of Goal $F(1, 30) = 22.29$, $t(4.72)$, $p < .001$, $R^2 = .41$. Based on this analysis, the higher the Quality of a Goal the more positively student outcomes were impacted.

CHAPTER 4

DISCUSSION

The purpose of this study was to determine the impact on student outcomes of using the CPS for GEI team process. Specifically, some of Upah and Tilly's (2002) as well as some of Telzrow et al.'s (2000) best practice indicators/components were used in order to gain knowledge as to variables that better predict student outcomes when an intervention team uses the CPS for GEI process. Specifically, this study examined (a) how students referred to the CPS for GEI teams progressed based on student outcomes relative to the referral problem (Behavior, Language Arts, Language Arts and Math, Math); (b) the quality of action plans by school; (c) if student outcomes varied by school; and (d) the impact the CPS for GEI teams process had on student outcomes in terms of problem-solving components including (a) Definition of the Problem, (b) Baseline Data, (c) Goal Setting, (d) Action Plan, and (e) Interventions Built on the Student's Strengths.

Student Outcomes by Area of Concern

The distribution of student outcomes by area of concern (Behavior, Language Arts, Language Arts and Math, Math) was not significantly different when examining student outcomes by area of concern. It was hypothesized that if the area of concern was Language Arts then student outcomes would be higher, but support for this was not

found. The lack of statistical significance may be due to the small sample size. In the present study, the data indicated a non-significant trend in the predicted direction. However, there were 25 plans with Language Arts as the main area of concern while other areas of concern (Behavior, Language Arts and Math, Math) only had 2 plans per area. In addition, upon review of the interventions developed by the teams, many of the interventions on the Action Plan were more or less accommodations (e.g., more time for tests, flashcards with a peer, etc.) as opposed to using an evidenced-based intervention (EBI), or an intervention that has been supported in research to work for a large population of students. Because EBIs by definition have been shown in research to yield positive results for students (Gortmaker, 2006), it is possible that if an EBI were used rather than an accommodation, student outcomes would have been apparent and most student performance would have likely increased from baseline.

Quality of Plan by School

A goal of an intervention team should be to address the area(s) of concern and design interventions to help the student achieve success through the use of an action plan (Wright, 2007). All schools in this study were trained in the CPS for GEI process with the creation of an Action Plan for the student being part of the process itself; however, it was interesting to note how the Action Plan differed across schools. The hypothesis that action plans would differ across schools was maintained. The action plans produced at School 102 received significantly lower ratings compared to the average overall quality scores awarded to each of the other schools. The action plans from School 103 were of significantly higher quality compared to those produced by Schools 102, 104, 107, and

201. The action plans produced by the other schools on average were similar to one another. Further investigation of the results indicates that even though Schools 104, 106, 107, and 201 were similar to one another in overall plan quality and did not significantly differ from the other schools, the means of their plans were still strong, indicating that these schools were doing an overall good job. Since all schools went through identical training, additional training for specific schools may be needed to review the importance of developing an action plan. The need for additional training could be identified by "coaches" available through the CPS for GEI project to support schools newly trained in the process. There were 76 cases total, but only 32 included student outcomes data. Therefore, it may also be possible that schools with lower scores simply needed to do a better job of recording data as the results may reflect data unavailable to the researcher in that the researcher had access only to archival data submitted to the university center by the schools.

Student Outcomes by School

The analysis comparing average outcome scores across schools found that there was a significant difference between the schools. School 102's student outcomes were significantly lower than all other schools; School 103's were significantly higher than all others. The fact that School 102 had only one data point that included student outcome data for this analysis, is an important consideration when interpreting the significance of this finding. While School 102 had eight action plans assessed, only one of the plans recorded student outcome data. Therefore, the results may not represent a consistent outcome pattern for this school as the sample size is small. Due to the fact that the

identities of the schools are unknown to the examiner, it is not possible to follow-up with School 102 to find out why student outcome data were missing; however, it is possible that the team did not have the data or simply did not record it properly. Rosenfield and Gravois (1996) make specific note of the importance of recording data by teams. Often these records are done in a partnership with the referring teacher and delivered to the receiving teacher the following academic year. Rosenfield and Gravois also stress that a centralized record of the interventions be kept for accountability purposes, especially in the event that future problems arise. Therefore, in the future, it will be important to stress the importance of recording student outcome data so that future school personnel who refer to the student's file know how the child performed in response to specific interventions given previously. Still, based on the data provided, there was a strong positive correlation between student outcomes and quality of the action plans at each school. Schools 104, 106, 107, and 201 resulted in student outcomes that were similar to one another. Although these data are not significantly different from the other schools, the mean student outcomes scores for these on the rubric were similar to one another with rubric scores of at least three to four, indicating average to above average results. The data indicate that most schools in the study did an adequate job of obtaining student outcomes data. Still, sample size may have again impacted the results. Based on results from this study, some schools produce better plans in general which were correlated with positive student outcomes. Research in this area is lacking and may prompt a future study.

Student Outcomes and Problem-Solving Components

Levinsohn (2000) indicated that just using a formalized problem-solving system, collecting data, and specifying the interventions will contribute to more appropriate referrals to special education. CPS for GEI is a formalized process and has been empirically demonstrated by McKinney (2001) to have a positive impact for schools. She demonstrated that the number of non-verifiable referrals to special education decreased when using CPS for GEI. The present study examined the CPS for GEI process to determine which best practice indicators (Definition of the Problem, Baseline Data, Goal Setting, Action Plan, and Intervention Built on Student's Strengths) were positively intercorrelated. Based upon the study conducted by Telzrow et al. (2000), which the present study replicates using CPS for GEI, both the Definition of the Problem and Goal Setting (also a factor in the study conducted by Fuchs et al., 1990) were hypothesized to predict student outcomes. In addition, Action Plan was hypothesized to predict student outcomes. Finally, a new indicator unique to this study and the CPS for GEI process, Building Interventions Based on the Student's Strengths, was also hypothesized to improve student outcomes. In the present study, there were four significant positive correlations: Goal Setting and Baseline Data; Action Plan and Goal Setting; Goal Setting and Building Interventions Based on the Student's Strengths; and Action Plan and Building Intervention Based on the Student's Strengths. The results indicated that if the team had baseline data they were significantly more likely to have a goal. If the team had a goal they also tended to have a solid action plan and goals built on the student's strengths. If the team had a solid action plan they tended to have interventions built on

the student's strengths. Based on the available data, it did not seem to matter if the teams had a well-defined problem. Taking into consideration the work conducted by Telzrow et al., as well as Bergan and Kratochwill's (1990), it was a bit surprising that definition of the problem was not correlated; however, this finding may be in part related to the small sample size used in this study. Another explanation as to why Definition of the Problem was not correlated may be because all schools do well with this component as it is stressed throughout the CPS for GEI process in stage one, Understanding the Challenge. Instead, setting goals, having a solid action plan, and Building Interventions Based on the Student's Strengths were correlated with student outcomes. These findings are not surprising as Telzrow et al. (2000) and Upah and Tilly (2002) indicate that goal setting and having a quality action plan are important indicators of student success. On the other hand, Building Interventions Based on the Student's Strengths is an original contribution to the literature in that this indicator is unique to the CPS for GEI process and has not been found in other processes for intervention teams as an indicator for student outcomes. This is the first time such a finding appears in research on teams. This finding supports the need to look at the uniqueness of each child and develop plans as such. It also provides a springboard for future research to help validate the importance of this indicator, especially since the sample size for this study was small.

Multiple Regression Analysis

An additional analysis was conducted to further investigate which best practice indicators specifically predicted student outcomes. Many of the problem-solving components were correlated with each other. This correlation may have prevented them

from accounting for additional significant amounts of variance in student outcomes, and, thus, from entering the regression equation. The only best practice indicator to significantly predict student outcomes was Quality of Goal, which explained approximately 41% of the variance in student outcomes. However, it is important to note that this is a high amount of variance to be explained by a single variable. This indicates that a solid goal, which includes stating the desired outcome with specific, clearly stated criterion levels indicated such as how much and when the goal will be met (Telzrow et al., 2000), will be the best predictor of positive student outcomes as opposed to the other factors and suggests that the GEI teams need to focus much of their efforts in developing a measurable goal to help predict student outcomes.

Based on previous research (e.g., Telzrow et al., 2000), it is a bit surprising that Definition of the Problem did not come up as a significant predictor of student outcomes. However, after examination of the raw data, it is possible that this indicator was not significant because the majority of rubric scores were in the average range. This suggests that most of the time, the teams correctly identified the problem, but it was not stated in behavioral terms.

Limitations

There are several limitations to this study. First, this study includes an overall sample size which was relatively small ($n = 76$). After removing all data that did not include student outcomes, which was a main area of investigation, the sample size was even smaller ($n = 32$). The small sample size makes generalization difficult. Furthermore, the data were not evenly distributed between the schools. Specifically, the available data

ranged from two cases at two schools to nine cases at one school (the other two schools had either one or five complete data sets).

Second, as was the case for Telzrow et al. (2000), the information provided by the schools was collected through case documentation, so it is possible that the schools implemented problem-solving components correctly and had student outcomes data, but this information was not reflected in the documentation available to the researcher for analysis. In addition, the researcher could not specifically investigate whether the interventions listed on the Action Plan were actually administered, and that they were administered as they were designed to be. With that in mind, the extent to which the Action Plan had treatment integrity is also a limitation of this study. Although the CPS for GEI process assumes that interventions developed will be implemented with integrity, checking for this is not part of the process. In addition, treatment integrity data was not available to the researcher from the TAS or Action Plans.

Third, the duration of the intervention/treatment was not taken into consideration as part of this study. Hunt et al. (2003) found that consistent implementation of a UPS, developed through a collaborative teaming process, increased the student's engagement in appropriate behaviors, or increased the amount of time the student engaged in positive behaviors, and also increased communications initiated by the students in the study. In the present study, the Action Plans did not consistently specify what interventions would continue and for how long, so length of treatment could not be considered.

A fourth limitation to this study relates to the assumption that student outcomes are a result of the GEI process and/or the action plan. Although it is plausible that the

interventions and CPS for GEI process impacted student outcomes, other factors also play a part, resulting in student outcomes that are often difficult to measure or were not available to the researcher. For instance, the child's home environment, motivation, health status, learning abilities, and other factors, both external and internal to the child, all impact student outcomes, but are beyond the scope of this study.

Future Research

Research examining GEI teams that utilize a prescribed approach may be a useful framework for studying student outcomes. Since training in specific GEI teams processes, such as the CPS for GEI process, is not only expensive, but also time consuming, convincing participants of the utility of being trained and using a specific problem-solving process is crucial to enhance team performance, which should ultimately enhance student outcomes. However, the current study adds to the literature suggesting that CPS for GEI is a worthwhile approach. Clearly, more research using the CPS for GEI process is needed. Future studies may include employing single-subject research designs, examining permanent products, comparing the goal to actual progress, and using multiple reporting sources (teacher, parent, and student). In addition, a similar study could be conducted using a larger sample. Finally, treatment integrity data may also be important to investigate in relation to student performance.

Additionally, a study similar to the present study may yield more significant results when a larger sample size is used. Furthermore, treatment integrity (i.e., if the intervention was implemented as it was intended), types of interventions (EBIs as compared to non-EBIs), and length of intervention may also impact student outcomes.

Future research could provide data regarding the current movement in education and support or disqualify suggestions of Congress to use EBIs as a means to determine response to interventions, which inevitably impacts special education eligibility.

Student outcomes vary between schools, as was evident in the present study. Research with larger sample sizes is needed to investigate the schools that produce higher quality plans in order to determine which best practice indicators (e.g., Goal Setting, Baseline Data, Action Plan) significantly predict positive student outcomes, as well as other factors that impact GEI teams. For instance, it may be interesting to determine whether support from administrators, knowledge of team processes, or availability of interventions affect student outcomes. Other factors that may impact student outcomes across schools may include GEI team size, the number of students referred to the team (i.e., whether teams are heavily burdened), school resources, expertise of the team, knowledge of effective interventions, and administrative support. Rathvon (2008), for example, makes a case for the involvement of administrators on GEI teams to provide effective leadership and allocate resources to support the needs of individual students.

Implications for GEI Teams

An intervention or problem-solving process is urged by Indiana's most recent special education regulations, (Indiana State Board of Education, 2008*)* to take place at the individual school level, and many schools meet this requirement through the use of a GEI team. Although Rosenfield and Gravois (1999) noted that not all schools use an intervention team approach because its effectiveness is often in question, they argue that a team may be more effective than one person's efforts. This is because a GEI team often

consists of persons from multiple disciplines, which results in multiple areas of expertise. Furthermore, IDEA allows school districts to allocate up to 5% of federal funds to develop and implement coordinated service systems to improve student outcomes (Telzrow & Tankersley, 2000). Thus, there is federal support for problem-solving approaches, such as CPS for GEI. Although data are still needed with regard to GEI teams, and specific team processes, such as CPS for GEI, data regarding student outcomes are especially needed since the basic objective of an intervention, or an intervention process, is to help students.

With that in mind, there is a federal movement for intervention teams to use EBIs and monitor student progress through a problem-solving process. Since problem-solving is a set of activities designed to eliminate the difference between what is and what could be with regard to the student's development using a systematic approach to change student outcomes, progress monitoring is a specific way to examine student outcomes at the individual level. The data, yielded from the progress monitoring, are part of a new movement in identifying certain disabilities in special education. The state of Indiana has allowed for monitoring of student progress to be one way of identifying a Specific Learning Disability (Indiana State Board of Education, 2008) to be used to consider certain eligibilities for special education, such as a Learning Disability. Therefore, using a systematic problem-solving approach as the CPS for GEI process, implementing EBIs with integrity and monitoring progress are one way to meet the federal and state mandates. Moreover, the CPS for GEI process lends itself easily to the steps involved in Response to Interventions, which, is a movement away from the test and place model in

the field of special education, and leans more toward a process to try EBIs in the classroom setting as part of the determining factors for eligibility decisions (e.g., Kovaleski, 2002). For example, the Response to Intervention process has many important steps that the CPS for GEI process could address. These steps include: behavioral definition of the problem, measuring performance in natural setting (i.e., baseline data), determining current status, and performance gap compared to peers, stating a goal, designing an action plan applying scientific instructional and behavior change principles (action plan), implementing interventions over a reasonable period of time with good treatment integrity, frequently monitoring progress, and making changes in the interventions as needed to improve effectiveness, evaluating results compared to peer performance and student goals, and making decisions based on data (Fuchs, Mock, Morgan, & Young, 2003; Prasse, 2005). Those involved in the CPS for GEI process may also want to consider a treatment integrity check for future reference. While not part of the CPS for GEI process itself, the sponsoring university-based program has provided schools trained in the specific problem-solving process with a list of best practice/evidenced-based interventions to support teams developing interventions. Thus, the CPS for GEI process has great potential to be used in the schools to benefit children and to satisfy the requirements of the new mandates under IDEA.

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Table 1

Frequencies and Percentages of Student Outcome Ratings by Area of Concern, N = 32

Area of Concern	Significant Improvement	Some Improvement	No Change	Some Regression	Significant Regression
Behavior	0	0	0	0	2
	(0.00%)	(0.00%)	(0.00%)	(0.00%)	(100.00%)
LA	1	1	2	11	10
	(4.00%)	(4.00%)	(8.00%)	(44.00%)	(40.00%)
LA/Math	0	0	1	1	0
	(0.00%)	(0.00%)	(50.00%)	(50.00%)	(55.00%)
Math	1	0	0	1	1
	(33.30%)	(0.00%)	(0.00%)	(33.30%)	(33.30%)

Note. LA = Language Arts. LA/Math = Language Arts and Math.

Table 2

Means and Standard Deviations of Student Outcomes by Area of Concern, N = 32

Area of Concern	*N*	Mean	*SD*
Behavior	2	5.00	0.00
LA	25	4.12	1.01
LA/Math	2	3.50	0.71
Math	3	3.33	2.08

Note. LA = Language Arts. LA/Math = both Language Arts and Math.

Table 3

Means and Standard Deviations of Quality of Overall Plan by School

School	Mean	*SD*	*n*
102	11.63_{a}	2.45	8
103	21.00_{b}	0.78	11
104	17.00_{c}	3.65	27
106	18.00_{c}	2.45	4
107	18.46_{c}	1.71	13
201	17.85_{c}	3.16	13
Total	17.46_{c}	76	76

Note. Means that do not share subscripts differ significantly at $p < .05$ in the Fisher Least Significant Difference comparison.

Table 4

Average Student Outcomes by School

School	Mean	*SD*	*n*
102	1.00_a		1
103	4.89_b	0.33	9
104	3.86_c	1.35	7
106	4.00_c		1
107	4.22_c	0.67	9
201	3.20_c	0.84	5
Total	4.06	1.11	32

Note. Means that do not share subscripts differ significantly at $p < .05$ in the Fisher Least Significant Difference comparison.

Table 5

Correlations Between Problem-Solving Components, N = 32

	1	2	3	4	5
1. Definition of the Problem	--	.18	.21	.00	.16
2. Baseline Data		--	.34**	.14	.09
3. Goal Setting			--	.52**	.44**
4. Action Plan				--	.47**
5. Student's Strengths					--

Note. Only action plans with outcomes were included in this analysis. Student's Strengths = Building Interventions Based on the Student's Strengths.

**p < .01.

APPENDIX A – BEST PRACTICE INDICATOR TABLE

Overall Pattern of Results Each Team Type Related to Telzrow et al. (2000) and Upah and Tilly's (2002) Best Practice Indicators								
Types of Teams → / Problem-Solving Components ↓	MAT	SBIT	PIT	ICT	IAT	IBA	CET	CPS for GEI
Definition of the Problem**				X		X		X
Baseline Data**				X				X
Goal Setting**	X	X						X
Hypothesized Reason for the Problem*		X				X		
Action Plan**		X	X	X				X
Treatment Integrity**				X				
Student Response to Intervention*								
Pre- and Post-Intervention Comparison*								
Student Outcomes**				X		X	X	X

Note. *Derived from Telzrow et al. (2000). **Derived from both Upah and Tilly (2002) and Telzrow et al. (2000). MAT = Mainstream Assistance Teams. SBIT = School-Based Intervention Teams. PIT = Prereferral Intervention Teams. ICT = Instructional Consultation Teams. IAT = Intervention Assistance Teams. IBA = Intervention-Based Assessment. CET = Collaborative Educational Teams. CPS for GEI = Creative Problem Solving for General Education Intervention Teams.

APPENDIX B – TEAM ACCOMPLISHMENT SHEET (TAS)

CPS for GEI
Team Accomplishment Sheet

School Year: _____ School:_____ Page 1 of____

Initial Meeting								
Student Initials	M/ F	*Race	Grade/ Teacher Initials	Referring Individual Initials	**Primary Area of Concern	Date of Initial Meeting	Baseline Assessment Data	Instrument Used

* 1) Please enter the child's race. The race entered should match the race
A = American Indian B = Asian C = Hispanic D = African American E = White
F = Multi-Racial

** 2) Please use the following codes to indicate area of concern.
Identified by the parent/guardian and located in the child's permanent record.
A = Language Arts B = Math C = Social Behavior D = Other

Updated 8/20/04

CPS for GEI (CONTINUED)

Team Accomplishment Sheet

School Year: _____ School:_____ Page 1 of____

Follow-Up Meeting(s)					Referral to Special Education Testing		
Date of 1st Follow-Up Mtg.	Updated Assessment Data	Date of 2nd Follow-Up Meeting	Updated Assessment Data	Student still in GEI? Yes/No	Referred Yes/No	Referred by? Parent/Team	Found Eligible? Yes/No If yes, what area?

* 1) Please enter the child's race. The race entered should match the race
A = American Indian B = Asian C = Hispanic D = African American E = White F = Multi-Racial

** 2) Please use the following codes to indicate area of concern.
Identified by the parent/guardian and located in the child's permanent record.
A = Language Arts B = Math C = Social Behavior D = Other

Updated 8/20/2004

APPENDIX C – ACTION PLAN

Action Plan

Student's Name: _____ Meeting Date:_____ Page: ___

Goal (Include Measure of Success): Current Baseline: _____

Updated Baseline: _____

Interventions Implemented to Achieve Goal: _____

Intervention	Who or what can help?	Target Start Date/Actually implemented from when to when?	Degree of Success S=Successful SS=Somewhat Successful U=Unsuccessful	What did you learn about the student?

Other Interventions Implemented:

Intervention	Who or what can help?	Target Start Date/Actual	Degree of Success	What did you learn about the student?

Record the strengths (including hobbies, special interests, positive relationships) generated during the meeting.

☐ GEI Team Follow-Up Meeting scheduled for_____[Date]

Please turn over

Developed by the Indiana Creative Problem Solving Initiative
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