2018

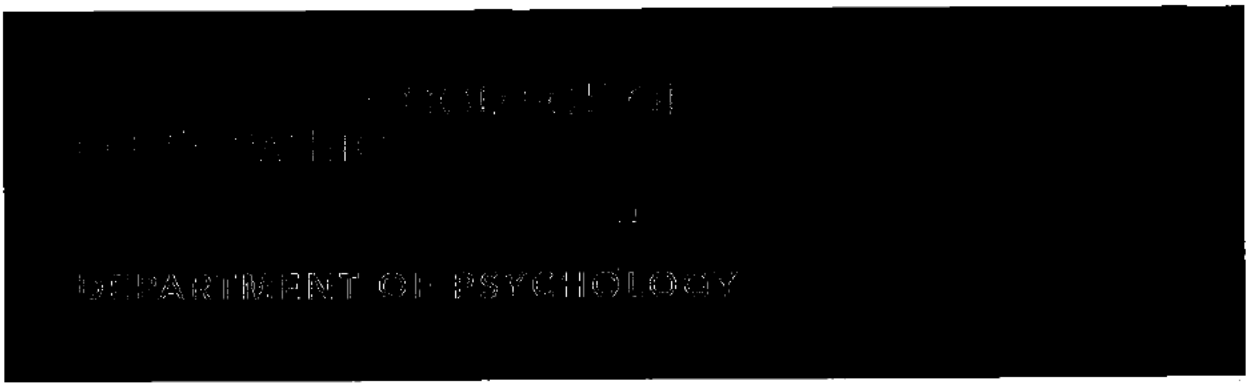
Examining Procedural Fidelity in School-Based Problem-Solving Teams within Elementary Schools

Catalina Ottinger-Ovens
Philadelphia College of Osteopathic Medicine

Examining Procedural Fidelity in School-Based Problem-Solving Teams within Elementary Schools

Catalina Ottinger-Ovens, EdS, NCSP

Philadelphia College of Osteopathic Medicine



DISSERTATION APPROVAL

This is to certify that the thesis presented to us by Catalina Ottinger-Ovens on the 10th day of May, 20 18, in partial fulfillment of the requirements for the degree of Doctor of Psychology, has been examined and is acceptable in both scholarship and literary quality.

COMMITTEE MEMBERS' SIGNATURES

, Chairperson

, Chair, Department of Psychology

Acknowledgements

I want to thank my family and friends for all of their support and encouragement throughout this educational journey. First, my mom, a young single mother of three: for always telling me to do better and showing me strength and independence through your guidance, and instilling resiliency in me, which has helped me get where I am today, despite the statistics and challenges along the way. Second, my husband and my best friend for the past 18 years: thank you for always telling me "I can" when I said "I can't", and giving me the best gifts of all, our sons. Third, my babies, Jayson and Hudson: you two kept me motivated and determined so Mommy could be an inspiration to you someday, even before you were born. Mommy loves you! Fourth, my sister, my brother, and my stepfather: thank you for being there and cheering me on every step of the way. Last, my friends: thank you for understanding when I couldn't attend events or hang out later because I was busy with school stuff (even though I always tried to be there), and for celebrating small accomplishments along the way. I greatly appreciate all of you! Your encouragement kept me motivated. I love you all!

I would also like to thank my professors and colleagues who helped make this all possible. First, a huge thank you to Dr. Amanda Lannie for your guidance, advice, and valuable feedback. I appreciate all of the time you spent helping me to meet my goal of graduating this year. Second, Dr. Kendorski and Dr. Cahill, thank you for serving on my committee. Third, Dr. Gerald Rodichok, thank you for supervising me during internship and then allowing me to perform this research study in the district. Fourth, all the district staff members that participated in my study, thank you for your time, patience, and understanding. Fifth, Dr. Ginny Salzer, thank you for helping me with the statistical analysis for this study. Last, to all of my professors at PCOM for these past eight years, thank you for your expertise and the knowledge I gained

during my graduate studies. I am so glad that I chose PCOM. Having two babies during the doctorate program may not have been easy, but the scheduling and understanding of the professors made it possible to succeed, even as a new Mommy.

Abstract

The current study examined the procedural fidelity within problem solving teams in three elementary schools, utilizing a 19-item modified checklist (Burns et al., 2008) completed by team members and a trained observer concurrently at eight meetings at each of the schools. The purpose of the study was to determine if there was a relationship between the team members' ratings and the observer's ratings, and also to determine the level of procedural fidelity across the three schools. The items on the checklist were divided into three subscales for analysis, based on the problem solving model: problem identification, problem analysis, and problem solving team (PST) support. The results revealed that there was not a significant difference by raters for two of the schools, yet there was a significant difference for the third school in two of the three subscales. Also, there was a significant difference between two of the three schools by team ratings, but not as hypothesized. The current study continues to demonstrate a need for evaluating the procedures of PSTs in schools, specifically examining the fidelity.

Table of Contents

List of Tables

Chapter 1: Introduction

With mandated requirements (i.e., Response to Intervention- [RtI]) and laws by which schools must abide, schools are expected to create procedures in which they are responsible for problem-solving, implementing interventions and ensuring data-based decision making. In Tier 1 of RtI, the focus is on prevention and involves whole group instruction and universal screening, addressing the needs of 80% of the students (Jones, n.d.). When students are not successful with Tier 1 supports only, the process continues with referring a student of concern to a problem-solving team.

The problem-solving team (PST) is a multidisciplinary, team-based approach to problem-solving to address an identified student(s)' needs. PSTs utilize the problem-solving model which can be explained in four stages: problem identification (defining the problem), problem analysis (analyzing the problem), plan implementation (implementing the plan designed during problem analysis), and then program evaluation (evaluating the effectiveness (Bergan, 1995). PSTs are often involved in making decisions about many aspects of the delivery of services to students with academic, behavioral, or social-emotional challenges. In particular, PSTs are called upon to make specific decisions regarding the referral, assessment, and interventions for individual students. Additionally, PSTs must evaluate student progress and make decisions regarding the development of an agreed upon specified goal, the delivery of services, and the eventual long-term follow-up of the student's program and progress towards that goal. The important feature of PSTs is that one person is not making the decision; it is a team-based approach. Hence, efforts to make the team more cohesive amongst schools within a district and ultimately more effective are important.

Problem-solving teams are a means to providing supports to increase the academic and behavioral success of students in general education classrooms (Burns, Peters, & Noell., 2008; Collier-Meek, Fallon, Sanetti, & Maggin, 2013; Doll, Haack, Kosse, Osterloh, Siemers, & Pray, 2005; Ruby, Cooper, & Vanderwood, 2011). However, research examining the fidelity of the problem-solving model by PSTs is lacking (Collier-Meek, et al., 2013; Noell, 2008). Research has consistently demonstrated the importance of implementing interventions with fidelity (Noell, Duhon, Gatti, & Connell, 2002; Noell, Gresham, & Gansle, 2002; Noell, Witt, Gilbertson, Ranier, & Freeland, 1997; Noell et al., 2005; Wichstrom et al., 1998), but little research has been conducted on the fidelity of the problem-solving model utilized by teams (Burns, Wiley, & Viglietta, 2008). Buck, Polloway, Smith-Thomas, and Cook (2003) found that the PST model was "one of the most inconsistently applied processes in education" (p. 350).

The need for creating cohesive team-based consultative practices (i.e., PST) is vital for effective service delivery within the school setting, especially because student outcomes have been found to be greater on teams with high degrees of fidelity to the problem-solving model (Ruby et al., 2011). An alarming finding from Ruby et al. (2011) also discovered that at-risk students who received interventions from trained PSTs with lower fidelity to the model evidenced no greater academic outcomes than did at-risk students who received no PST support. Therefore, the need for our students to be served by effective teams implementing the model with high fidelity is critical.

Recent research on improving the fidelity of the PST has shown that performance feedback increases treatment adherence, improves student outcomes (Al Otaiba & Fuchs, 2006; Carroll et al., 2007; Durlak & DuPre, 2008; Kaderavek & Justice, 2010; Stein et al., 2008), increases data collection, and improves teacher satisfaction (Burns, Peters,& Noell, 2008;

Pellecchia et. al., 2011; Sanetti, Chafouleas, Fallon, & Jaffrey, 2014). Burns et al. (2008) also indicated a need to examine the process with which interventions are developed by conducting a self-assessment of its process. Self –report is one way members involved in the process may conduct a self-assessment. Further examination of the PST process in terms of self-report is needed to better understand the functioning of PSTs.

Problem Statement

School team members are a large component of PSTs, so their own assessment of implementation could really influence the process and shed some light for future research. There is a lack of research on PST members' assessments of the functioning within the implementation of the process and how this relates to the quality and level of fidelity (Ruby, Crosby-Cooper, & Vanderwood, 2011). Self-assessing the implementation of the PST process could help to explain some of the factors that contribute to a more (or less) successful process. Truscott, Cohen, Sams, Sanborn, and Frank (2005) noted that although a large majority of states required team practices, few provided specific directions about how to implement problem-solving team practices. Moreover, Truscott et al. (2005) found that teams often lacked consensus regarding their goals, overlooked ecological variables, and recommended low-intensity interventions.

Several system factors affect PST implementation including team format, assignment of staff, and training (Kovaleski, 2002) and these factors should be further explored. Burns and Ruby (2005) discussed how the potential inconsistencies between team, format, assignment of staff, and training are examined for potential discrepancies between teams. Some debate exists over the format of the PST model, with seemingly the only point of consensus being for a team approach (Burns et al., 2005). Burns (1999) found that PSTs with a special education

representative (either a special education teacher or a school psychologist) were found to be more effective with a reduction of special education referrals and a reduction in grade retentions. Parental involvement (Izzo, Weissberg, Kasprow, & Fendrich, 1999) and administrative support (Burns, Wiley, &Viglietta, 2008) are also factors that influence the PST.

Related to training of PSTs is the team's use of the problem-solving model. The consultative practices of PSTs are driven by the problem-solving model and thus, the fidelity to the model is important. Burns, Peters & Noell (2008) examined the inconsistent implementation of PSTs and investigated methods in which to enhance the implementation fidelity of the process utilizing performance feedback, which has been consistently shown to increase implementation fidelity. They found that there was an immediate change in level following implementation of performance feedback, but the participating PSTs did not monitor student progress, assess the effectiveness of the intervention, or measure the integrity with which the intervention was implemented even after receiving feedback.

Despite widespread use of teaming and team approaches in education today, there remain ongoing caution and questions about the use and effectiveness of teams, specifically problem-solving teams (Burns & Symington, 2002; Burns et al., 2005; Fuchs, Mock, Morgan, & Young, 2003). Exploring the fidelity of PSTs in using the problem-solving process is one way to address the concerns about teams. Efforts can then be taken to promote the use of effective team-based practices and focus on strategies to increase team effectiveness and efficiency (Nellis, 2012). Little research has been conducted on a team members' self-reports of implementation of the PST process (Burns et al., 2008) and no research has examined the comparison of self-assessment data with observation data of the PST process.

Purpose of the Study

This study sought to compare two sources of procedural fidelity (direct observation and team member self-report) as methods to assess fidelity of PST. Through direct observations of problem-solving team meetings in three elementary schools in southeastern Pennsylvania, the PST process was examined in order to determine how the PST members' self-reports of procedural fidelity differed from an objective observation by an independent observer. Both sources utilized a procedural fidelity checklist, listing the steps of the problem-solving process (Burns et al., 2008; Burns et al., 2008).

This research intended to examine the degree to which PST members' self-reports of fidelity of the problem-solving process matched that of an independent observer. The findings were intended to explain how consultative efforts may be better spent to address certain areas more effectively, as well as potentially identifying a more efficient way for assessing procedural fidelity, such as team self- report. It is important for teams to be able to assess fidelity as ongoing and perhaps completing a procedural fidelity checklist is an efficient way to do that.

Below are the specific questions this study will attempt to answer.

Specific Research Questions:

- How do PST members self-report of procedural fidelity among their team correlate with a trained observer's ratings?
- What is the overall level of procedural fidelity of PSTs across three elementary schools?

Chapter 2: Literature Review

Shortly after the enactment of Public Law 94-142 (originally referred to as the Education for All Handicapped Children Act), school psychologists became entrenched in the 'gatekeeper' to special education role. The 'gatekeeper' role is a legacy that is proving to be highly resistant to change and a source of great frustration for many in the field who desire to engage in a broader range of services and to play an intervention-focused role (Merrell, Ervin, & Gimpel, 2006). This shift in education with Public Law 94-142 created a refer-test-place process in which the student either qualified for special education, or did not. There was little collaboration and little problem-solving. Prior interventions and data-based decision making were not mandated or a part of the process.

Dissatisfaction with special education during the 1980s led to the development of alternative service delivery models (Burns et al., 2005) and involved supporting general education as an alternative to special education (Rosenfield & Gravois, 1996). Chalfant, Pysh, and Moultrie (1979) initiated the problem-solving team's movement in the schools by articulating their teacher assistance team model. This approach had the largest effect on education and was later referred to as a Pre-Referral Intervention Team (PIT), which is a collaborative problem-solving model, implemented to increase teacher effectiveness and to support students experiencing difficulties with learning (Graden, Casey, & Christenson, 1985). Consequently, various team consultation models were presented, including Mainstream Assistance Teams (Fuchs, Fuchs, & Bahr, 1990), Instructional Consultation Teams (Rosenfield & Gravois, 1996), Prereferral Intervention Teams (Graden, Casey, & Bonstrom, 1985) and Instructional Support Teams (Kovaleski, Tucker, & Duffy, 1995). Additional names suggested for teams from a PIT model include: Teacher Assistance Teams, Teacher Support Teams,

Student Assistance Teams (House & McInerney, 1996), Intervention Assistance Teams (Graden, 1989), and Child Study Teams (Moore, Fifield, Spira, & Scarlato, 1989).

Unfortunately, these teams have largely been for referral placement decisions, as opposed to the problem-solving role addressed by Graden, Casey, and Christenson (1985). The popularity of this team approach grew at a rapid rate, due largely to a concern that too many children were being inappropriately labeled with a learning disability (Kovaleski, 2002). Today, PSTs remain a preferred method for school psychologists to engage in school-based consultative activities (Costenbader, Swartz, & Petrix, 1992; Kapliwski, 1996).

Impact of Educational Policies on PST

Policies at the federal, state, and district levels urge schools to improve student achievement, instructional programs, and teaching practices (e.g., Ravitch, 2000), which educators continuously strive for. Most of the current trends in education come from the 2004 reauthorization of the Individuals with Disabilities Education Act (IDEA), now titled the Individuals with Disabilities Education Improvement Act (IDEIA-2004). Federal legislation, including the No Child Left Behind Act (NCLB; 2001) and the Individuals with Disabilities Education Improvement Act (IDEIA, 2004), mandates data-based decision making for special education students. Within this legislation, ongoing progress monitoring is recommended for three main reasons: (a) to relate directly to daily classroom practices and to evaluate the appropriateness of instructional practices, (b) to monitor students' progress on goals and objectives, and (c) to identify and qualify students for special education services (IDEIA, 2004).

Public Law 107-110: NCLB is a reauthorization of Public Law 89-10, Elementary and Secondary Education Act (ESEA) of 1965; the emphasis of these is on accountability, primarily measured by assessment outcomes. In addition to its strong emphasis on assessment outcomes,

NCLB also includes more than 100 references to "scientifically based research." The law requires that federal grantees use their funds on evidence-based strategies, putting educational research in an unprecedented spotlight (Feuer, Towne, & Shavelson, 2002).

In the context of the 2004 reauthorization of the Individuals with Disabilities Education Act (IDEA) and the No Child Left Behind Act (NCLB), there is an increased emphasis on achieving academic outcomes for all students, including those who are often considered at risk for meeting standards. School psychologists' response to this context has been to evolve problem-solving models (Rosenfield, 2008). Instructional consultation teams, as a consultee-centered approach to problem-solving (Knotek, Kaniuka, & Ellingsen, 2008; Knotek, Rosenfield, Gravois, & Babinski, 2003), focuses on improving and enhancing staff competence as a route to both systems' improvement and positive individual student outcomes (Rosenfield, 2008).

On December 10, 2015, President Obama signed the Every Student Succeeds Act (ESSA) (P.L. 114-95), legislation which reauthorizes the Elementary and Secondary Education Act of 1965, and replaces the widely criticized No Child Left Behind Act (Darrow, 2016). The ESSA presents significant opportunities to improve school and student outcomes by implementing comprehensive school psychological services within multitiered systems of support (MTSS). MTSS offers an evidence-based framework for effectively coordinating and integrating services throughout the school system to ensure that all students succeed. MTSS is s framework derived from Response to Intervention and Positive Behavior Intervention and Supports (Averill & Rinaldi, 2011).

The federal government became directly involved in the research-to-practice debate with the mandate for evidence-based practices in NCLB. An evidence-based practice was defined as

one supported by empirical research and professional wisdom so that research-based instructional methodologies could be implemented in the unique systems represented by each preK–12 public school (Whitehurst, 2002). Moreover, the federal mandate also created the What Works Clearinghouse (see http://www.whatworks.ed.gov) as a source of evidence based practices that would be easily accessible to parents, teachers, and administrators. However, the selection of instructional methodologies remains more dependent on the professional wisdom aspect of evidence-based than on the empirically supported component (Whitehurst, 2002).

Rationale for PST

Federal and state legislative mandates have required that multidisciplinary teams become an integral part of special education. Because effective team decision making influences the quality of the special education services provided in a school district, a number of recent research reports have analyzed the multidisciplinary team meeting process (Fleming & Fleming, 1983). The law envisioned a collaborative meeting of professional equals; the literature suggests, however, that simply bringing together a number of different professionals does not insure that the most appropriate decisions will be made (Pfieffer, 1980).

Special education legislation introduced an optional and potentially effective way to work with struggling or challenging students, using Response to Intervention (RtI). In conjunction with RtI, IDEA (2004) urges schools to embrace multi-tiered service delivery models. In many schools, problem-solving or student-assistance teams that include special educators, related support providers, and administration lead the implementation of these multi-tiered frameworks (Collier-Meek et al., 2013).

One of the rationales for using the team approach to make decisions in special education has been the assumption that decisions made by groups are better than those made by individuals (Moore et al., 1989). Moore et al. (1989) also suggest that proponents of the use of teams in special education have argued that children recommended for special education services often possess diverse needs and that few individual service providers have expertise in each area of exceptionality. Furthermore, proponents have also argued that assessment and placement decisions made by teams are less subject to individual biases than decisions made by individual professionals (Kabler & Genshaft, 1983; Pfeiffer, 1981). The problem-solving team is composed of a multidisciplinary group of educators and follows a research validated structured approach known as the 'problem-solving model' (Bergan, 1995) to understand and analyze student challenges. Encompassing a variety of specialized educators is important in the team's effectiveness and fidelity within the PST.

Research has suggested that PST models are effective in reducing the number of unnecessary special education referrals and placements (McNamara, 1998; McNamara & Hollinger, 1997), and in improving student and teacher performance (Nelson et al., 1991). McNamara (1998) examined the adoption of intervention-based assessments (IBA: planning and evaluating intervention services for students with learning and behavior problems) and found initial declines in the number of children served, and IBA teams documented successful interventions for a greater proportion of cases than in the year preceding implementation.

Scholars have suggested that school psychologists should implement a problem-solvingapproach to practice (Reschly & Ysseldyke, 2002). In addition, Reschly and Ysseldyke (2002) argued for replacing the traditional test-and-place process for learning disabilities with a problem-solving model that uses problem-solving team (PSTs) as the vehicle for delivering

services. When pre-referral intervention teams (PITs) are used in a problem-solving service delivery model, the name of the teams is often changed to problem-solving teams (PST), and the concept of "pre-referral" is eliminated. The work completed by the PST is used to justify the need and to document the existence of a disability when the team or others decide that special education is an appropriate intervention (Tilly, 2002).

According to McNamara and Hollinger (1997), intervention-based assessment, a systematic form of prereferral intervention (i.e., interventions implemented prior to initiating a referral for special education), represented a viable alternative to “test and place” models for identifying and teaching children with a variety of learning-related problems in schools. Data obtained from 13 schools participating for a third year in their pilot study of statewide implementation of intervention-based assessment suggested that, in comparison to a prior prereferral intervention model, fewer children were evaluated and found eligible for special education. Of those children receiving intervention-based assessment, a slight decrease occurred in the percentage classified as specifically learning disabled (McNamara & Hollinger, 1997).

Findings from Nelson et al. (1991) suggest that prereferral intervention approaches can have a positive impact on special education service delivery practices, reducing both the number of unnecessary special education referrals and placements, and consequently, unnecessary stigmatization due to labeling and separation of the child from general education (McNamara, 1998; McNamara & Hollinger, 1997). The findings also indicated that such interventions can increase the abilities of teachers to educate students who are experiencing difficulty and improve the attitudes of teachers toward such students. Furthermore, the interventions implemented under the prereferral intervention approaches appeared to produce the desired student performance, which decreased the over identification of students as requiring special education services. In

sum, prereferral intervention may be a viable option to more traditional general and special education service delivery practices (Nelson et al., 1991).

Given the relevance of PSTs to overall school improvement efforts, it is certainly pertinent to conceptualize these teams not as "prereferral" teams but as providing support for teachers to bring all students to acceptable levels of proficiency (Bahr & Kovaleski, 2006). Consequently, there is a preference for the term problem-solving teams—a term that minimizes the notion that involvement in these practices is merely a short-term hurdle to jump before considering a student for special education eligibility. Throughout their history, these teams have typically used the problem-solving process as a template for how they operate (Kovaleski, 2002).

There is a relatively small body of research addressing PST effectiveness, and existing studies have been criticized for serious methodological concerns such as low sample sizes and a lack of control groups (Nelson et al., 1991; Short & Talley, 1996). In a survey of state departments of education, 35% of the respondents reported that the PST process used within the state was usually successful, and 45% described the process as sometimes successful (Buck, Polloway, Smith-Thomas, & Cook, 2003). However, ratings of effectiveness were questioned as valid indicators of successful education (Medley & Coker, 1987; Riner, 1991).

This empirical void prevents the individual from identifying the extent to which prereferral intervention programs can produce gains in academic skills, class management skills, consultation skills, and professional collaboration (Ross, 1995). In addition to having a relatively small set of data about PST effectiveness, Safran and Safran (1996) suggested that the data obtained are not clear. For instance, promising findings are reported regarding the reduction of referral rates to special education associated with university model programs or training (Fuchs

et al., 1990; Graden et al., 1985); however, initial reports from the field show only minimal effects on the number of identified students (Flugum & Reschly, 1994).

Despite these inconsistent data and a relatively small number of studies examining the effectiveness of the PST model, use of prereferral programs has become widespread in public education (Burns & Symington, 2002). Kavale and Forness (2000) suggested that empirical meta-analytic research is needed when making special education policy decisions, and although PSTs generally fall under the umbrella of general education, they have a direct impact on the delivery of special education. Therefore, the need for effective PSTs that include a variety of participants is not only essential to successful implementation but also for public education students and educators.

Models of PST

The problem-solving team (PST) is composed of a multidisciplinary team of educational professionals. The members of the team vary, but may include the student, the student's parent(s), the principal, the vice principal, the reading specialist, the disciplinarian, the nurse, general or special education teachers, the school psychologist, the guidance counselor, related service providers (i.e. speech and language therapist, occupational therapist, physical therapist), the school psychiatrist, the school social worker, the learning consultant, or any other stakeholders that may provide pertinent information or resources for the referred student. It would be beneficial to have many different professionals on the team, but that is not always possible due to a variety of reasons (i.e. time, training, and substitute availability).

To examine the problem-solving team (PST), it must first be defined it as it is presented throughout literature. The Problem-Solving Team may be referred to in many ways. Research has identified the PST as the Intervention Assistance Team (IAT; Graden, 1989), Pre-referral

Intervention Teams (PIT; Graden et al., 1985); Student Assistance Teams (SAT; House & Mclnerney 1996), Child Study Teams (CST; Moore et al., 1989); Teacher Assistance Teams (TAT; Chalfant, Pysh, & Moultrie, 1979), Mainstream Assistance Teams (MAT; Fuchs et al., 1990), Instructional Consultation Teams (ICT; Rosenfield & Gravois, 1996), and Instructional Support Teams (IST; Kovaleski et al., 1995). Although differences exist among these various models, all fit the general definition of a multidisciplinary team that develops interventions to meet the needs of students in general education; most PST approaches fall into one of five primary models including TAT, IAT, MAT, ICT, and IST (Burns & Symington, 2002). For example, Minneapolis uses the IAT model and the team works to refine intervention and progress-monitoring strategies, considers the possible impact of cultural or linguistic variables, and conducts periodic reviews of student progress, making further instructional modifications as necessary (Marston, Muyskens, Lau, & Canter, 2003). Further, all models generally follow procedures outlined by Graden, Casey, and Bonstrom (1985), which include requests for consultation, individual consultation, observation, conference, and if needed, a formal referral for special education eligibility (Burns & Symington, 2002).

PSTs typically consist of groups of teachers and/or specialists who gather to solve classroom problems for students who are identified by classroom teachers. Types of membership can be differentiated according to the extent to which the team consists of classroom teachers only, or is enhanced by information from specialists (e.g., school psychologists, special education teachers, guidance counselors). The teacher assistance team (TAT) model (Chalfant et al., 1979) featured teachers assisting other teachers in a team format, which allowed for the brainstorming of strategies calculated to address the problem. The goal of TAT was to obtain

more efficient and effective delivery of special help to children by placing the initiative for action in the hands of classroom.

Other models utilized specialists who were specially trained or who had particular types of expertise as adjuncts to the team of teachers (Batsche & Knoff, 1995; Fuchs et al. 1990; Garden et al., 1985). Rosenfield and Gravois (1996) included teachers and specialists in an instructional consultation team format that served as a vehicle for incorporating precisely designed instructional strategies into a teacher-consultation process. During the 1990s several states, including Iowa (Tilly, Clark, Atkinson, & Flugum, 1992), Pennsylvania (Kovaleski, Tucker, & Stevens, 1996), Kansas, Vermont, and Ohio, mandated prereferral teams that featured specialists and teachers using a problem-solving process (Kovaleski, 2002).

There are slight differences between the team formats, assignment of staff, and the training of the five primary models of PST, which Burns, Vanderwood, and Ruby (2005) summarize. The TAT model includes general education teachers only, with no specialists or administrators. The leadership is shared by general education teachers. The teachers are trained in analyzing student needs, intervening, writing intervention goals, conducting efficient meetings, brainstorming, and measuring intervention effectiveness (Chalfant & Pysh, 1989). The IAT model includes general and special education teachers, consultant, and others as appropriate. There is shared leadership with general education teacher selecting interventions. The teachers are trained in consultation, observation, and intervention (Graden et al., 1985). The MAT model includes general education and consultant. The consultant and teacher share responsibilities. The consultant is trained in behavioral consultation, teacher-student contracts, product inspection, interval recording, and using written scripts (Fuchs et al., 1990). The ICT model includes general and special education teachers, specialists, and the principal. The team is led by a facilitator that

is selected by skills in facilitation. All team members are trained in systematic problem-solving, communication skills, curriculum-based assessment and others as needed by the team (Rosenfield & Gravois, 1996). The IST includes general and special education teachers, instructional support teacher, principal, and others as needed. The team is led by a case manager who is selected, based on skill and interest. All members are trained in collaboration, curriculum-based assessment, instructional adaptation, student discipline, and student assistance for at-risk issues (Kovaleski et al., 1995).

The TAT concept was developed to provide a day-to-day peer problem-solving group for teachers within a particular building. The goal of the team was to obtain more efficient and effective delivery of special help to children by placing the initiative for action in the hands of classroom teachers (Chalfant et al., 1979). The team was developed to assist inclusive classroom teachers better serve students with behavioral and learning needs. The five major problems research identified were training and confidence, resources, immediate assistance, classroom management, special education referrals and qualifications. The team worked with the teachers by helping them to better understand the student's needs, to provide immediate and relevant support, improve follow-up and evaluation of mainstream efforts, and to increase attention to the number of referrals in the building to reduce the number of inappropriate referrals so special education personnel could be used more effectively (Chalfant et al., 1979).

The IAT model was developed to more effectively assist the teacher to instruct students who were difficult to teach. Graden (1989) described the IAT model as a team approach for developing a support system to assist students within the general education classroom. The model involved teachers' modifications to instruction or classroom management before

making a referral for special education testing to better accommodate difficult-to-teach pupils (Fuchs et al., 1990).

The MAT model was organized in 1985 and members were trained in behavioral consultation, a well-known form of collaborative problem-solving. Despite the training and the on-site support, many MATs failed to design or execute effective interventions (Fuchs & Fuchs, 1989). Moreover, teachers complained that the give-and-take nature of behavioral consultation took too long. In 1986-1987, in search of greater effectiveness and efficiency, MAT membership was reduced to a consultant and consultee and, more importantly, participants were presented with a short list of empirically validated and carefully detailed interventions from which they were required to choose. Thus, they sacrificed some consultant-consultee collaboration to help ensure accurate implementation of judiciously chosen interventions (Fuchs et al., 1990). Findings suggested that MAT teachers were significantly less likely than control teachers to refer pupils to special education. Their pre to post ratings of the severity, manageability, and tolerability of students' target behavior became more positive than control teachers' ratings. In addition, there was a significantly positive shift from pre- to post intervention, in comparison to controls. On the other hand, whereas MAT pupils' target behavior decreased in frequency to the same level of their peers, control students also reduced their problem behavior, with a result that pre- to post observation comparisons between the groups were not significant.

The ICT model was developed to include consultation competence across multiple disciplines (e.g., principals, teachers, special educators, school psychologists, reading specialists, counselors, etc.), which was a major shift in existing school practices at the time. In this approach “everyone believes they are consultants, whether formally trained or not” (Gravois, 2012, p. 83). ICT is problem-solving, early intervention model promoting teachers’ use of

evidence-based instructional and behavioral practices (Rosenfield & Gravois, 1996; Rosenfield, Gravois, & Silva, 2014). This school-level intervention was designed to improve teaching practices and student outcomes and to align teachers' belief systems and practices with three key principles: (a) every child can learn under appropriate conditions; (b) for learning progress to be maximized, instruction and required tasks should match student skill level, and (c) teachers and other staff should work together to solve instructional and behavioral problems within the general education classroom (Rosenfield & Gravois, 1996). This shift in conceptualizing how to best support struggling students requires systemic change, extensive professional development for staff, and external support, especially in the early phases of program implementation (e.g., Rosenfield & Gravois, 1996). In addition to one-on-one support for teachers requesting support, the ICT itself serves multiple purposes: (a) assigns team members to take individual cases, (b) monitors progress of cases, (c) assists with problem-solving on specific cases as needed, (d) provides continuing professional development to team members, (e) addresses school-level problems, and (f) engages in evaluation activities. Schools implementing ICTs are asked to complete an annual assessment of program fidelity that is designed to help the school plan continued professional development, evaluate program integrity, and examine student outcomes (Berger et al., 2014).

The IST model was designed primarily "to identify effective instructional approaches for students prior to referral for special education as well as to help support students with disabilities in regular classroom environments" (PDE, Bureau of Special Education, Instructional Support, 1994) The ISTs worked to develop strategies that were of use to the classroom teacher and the identified student. The purpose of the team was to help to make the classroom experience

successful. Another IST goal was to identify and/or help the students prior to being referred for special education (Whitfield, 1996).

PST within Response to Intervention

The PST (as the aforementioned teams above are) has been implemented as a standalone support in schools. More recently, PST has been integrated and implemented within an RtI approach because both are designed to improve the prevention and intervention services of schools. RtI contains three tiers during which students are closely monitored on their progress and need for further intervention. Interventions are guided by the child outcome. Each tier offers differentiated instructions for the students (Jones, n.d.). RtI is a tiered approach, typically composed of the following:

- Tier I: Preventive tier, involving whole group instruction and universal screening, addressing the needs of 80% of the students.
- Tier II: Secondary tier, involving small-group interventions, addressing the needs of 15% of the students.
- Tier III: Tertiary tier, involving intensive interventions, addressing the needs of 5% of the students.

Tier I, usually referred to as the preventive tier, involves whole-group instruction and universal screening. This tier is used for core instructional interventions for problems in basic skill areas such as reading, math, and/or behavior, and for more targeted interventions that general education teachers may undertake in the context of the general education class (Fuchs & Fuchs, 2007). This tier typically addresses the needs of approximately 80% of students (Bender & Shores, 2007). Tier II, sometimes referred to as the secondary intervention tier, involves

approximately 15% of the student population and utilizes targeted, small-group interventions (Fuchs & Fuchs, 2007). Here, students who are at risk are served with more intensive, research-based interventions with close progress monitoring in addition to the primary instruction received by all students. Tier III, or the tertiary intervention tier, includes the most intensive intervention supports and typically serves the needs of approximately 5% of the student population. In most models, this third tier involves high-intensity, longer duration individualized instruction and frequent progress monitoring.

Beyond the tiered approach of delivering interventions to students, RtI has also been discussed as an alternative identification process for special education The PST model is consistent with the RtI for identification of learning disabilities. RtI was defined as identifying a child with a learning disability only after academic behaviors pre- and post-intervention do not significantly change, despite implementing a validated treatment (Gresham, 2001). This approach was described as a promising alternative to traditional identification methods (Vaughn & Fuchs, 2003). In an RtI model, the team becomes a critical part of the special education eligibility process, and the interventions designed and implemented by the team are the key sources of data for eligibility determination (Tilly, 2002). Although psychologists might need to collect some additional data, the intent is that by the time special education is needed, the psychologist and other staff professionals have already collected a substantial amount of data that could be used to help the team identify the problem, analyze it, and select interventions (Ikeda, Tilly, Stumme, Volmer, & Allison, 1996).

Within the RtI literature, teaming is widely regarded as a key element in the design and implementation of RtI procedures, processes, and practices. This expanded focus on larger schoolwide issues is essential for the realization of the potential outcomes associated with

frameworks such as RtI and implies that the utilization of teams will remain common in schools, especially those implementing multi-tiered systems of support (Nellis, 2012).

Multidisciplinary PSTs are frequent components of response-to-intervention (RtI) models that directly involve school psychologists (Burns & Ysseldyke, 2005), but the actual practices in which individual schools engage in problem-solving can vary significantly (Buck et al., 2003). This inconsistency in implementation suggests a 'significant flaw' in the PST approach that could be a major obstacle in implementing RtI on a national level (Burns et al., 2005, p. 101). The challenges in schools and education today are complex, and well-functioning teams can be integral to reform efforts and implementation of multi-tiered models, such as Response to Intervention (RtI), that ensure resources are used to support successful learning outcomes for all students (Adelman & Taylor, 2008; Bahr & Kovaleski, 2006; Fullan, 2008).

PSTs are not only frequent components of RTI, but they are also an imperative component of RtI. The need for effective school-based problem-solving teams is what helps drive the RtI process within schools. Data collection, identifying evidence-based practices, implementation, and consultation are all essential elements of the push for better student outcomes. The three tiered instructional model (RTI) accelerates the amount of time students are provided instruction; rather than decelerating their learning, it has been shown to be an effective method for increasing student learning for all students (Palenchar, Brown, & Jennings, 2006). The tiered model is proactive and enhances student outcomes.

Response to Intervention (RtI), Response to Instruction and Intervention (RtII), or Multi-Tiered Systems of Support (MTSS) are synonymous with and define a framework for which educators employ a process for providing tiered services to students based on their academic

needs. The model has also been utilized with social-emotional and behavioral concerns (Saeki et. al., 2011; Hawken, Vincent, & Schumann, 2008). The legal source of schools' use of RtI is a matter of federal and state special education laws, although its implementation is largely a matter of general education practice (Zirkel & Thomas, 2010). The limited explanation of RtI, yet the heavily sought upon topic, is crucial to understanding school-based service and in turn, influences how educators provide and implement these services.

Perhaps one aspect of RtI that research has conclusively supported is the effectiveness of a group problem-solving model (Tilly, 2002). Fuchs et al. (2003) identified four group-level problem-solving models that are consistent with RtI, two of which are used to make decisions regarding special education eligibility (see Fuchs et al., 2003, for a detailed description of each): Heartland Agency (Iowa) Model (Heartland, 2004; Ikeda et al., 1996); Ohio's Intervention Based Assessment (IBA; Telzrow, McNamara, & Hollinger, 2000); Pennsylvania's Instructional Support Teams (IST; Kovaleski et al., 1995); and Minneapolis Public School's Problem-Solving Model (MPSM; Minneapolis Public Schools, 2001). These four, widely presented as large-scale implementations of RtI currently in practice, have their roots in prereferral group problem-solving (Fuchs et al., 2003).

In 1990, the Commonwealth of Pennsylvania implemented a statewide Instructional Support Teams (IST) process to provide prereferral assessment and intervention to at-risk students in 500 school districts. Kovaleski, Gickling, Morrow, and Swank (1999) found that students supported by ISTs had greater levels of academic performance only when their schools implemented the IST process to a high degree. Low IST implementation produced no differences in academic performance in schools that had not implemented the IST. The importance of

implementing a promising program according to critical design is essential to the success of students.

In Pennsylvania, regulations were adopted for schools to develop ISTs. The teams served as pre-referral intervention groups that linked resources with the specific needs of the students. The IST was designed to: assure that regular education services were used effectively for all students prior to a multidisciplinary evaluation, provide peer support and problem-solving assistance for teachers, provide initial screenings for those students that required a multidisciplinary evaluation, and to assist teachers who had special education students already in their classrooms (Kovaleski et al., 1996). IST members varied from school to school, but every one included the principal, the student's regular education teacher, and a support teacher. The IST served as a bridge between special education and regular education programs. All team members received specialized training. Project data indicated that during a three-year period, schools reduced retentions by as much as 67 %, which was one of the goals of IST (Kovaleski et al., 1996).

The Heartland Agency (Iowa) Model was guided by the following principles that schools were asked to consider when designing reforms: (a) better integration of special- and general-education services for students with disabilities and at-risk characteristics, (b) reduced reliance on teaching children with special needs in separate settings, (c) greater emphasis on meaningful assessment procedures for educational decision making, (d) measuring student performance frequently and changing programs when students are not progressing, (e) early intervention and prevention of educational problems, (f) recognition of the need for continued staff development, (g) a renewed commitment to meaningful parent involvement in educational decision making, and (h) the creation of building plans that guided each individual school buildings' unique reform

efforts (Ikeda, et al., 1996). The focus was on identifying resources needed to implement problem-specific interventions effectively. It was important to ensure that all of the resources available in schools were organized in effective and flexible ways.

Heartland provided systematic training to both area education agencies' (AEAs) and local education agencies' (LEAs) staffs in strategies for working together effectively. The training model addressed skills needed for effective collaboration. Rather than present the concept of collaboration and hope that teachers would collaborate, teachers were taught directly to collaborate. This training resulted in teachers working more effectively with other teachers, support staff working better with teachers, administrators working better with teachers and so forth. More important was the impact that collaboration training had on changing traditional roles (Ikeda et al., 1996). Everyone worked collaboratively, and co-teaching occurred between regular and special educators. Heartland AEA 11 provided ongoing staff development, and progress monitoring expanded on what was presented regarding collaboration and building assistance teams. Ikeda et al. (1996) found that when over 1000 surveys were returned by teachers, principals, and superintendents, about 75% of the respondents indicated that their district perceived satisfactory through excellent support from Heartland in each of the areas surveyed, indicating a high satisfactory rate with the support the teams received. Recommendations for improving problem-solving consultation included: more support for using long term measurement, lower staff-to-student ratios, additional collaboration with community resources, evaluating outcomes, and careful evaluation of trends in education (Ikeda, et al., 1996).

The Ohio's Intervention Based Assessment (IBA; Telzrow et al., 2000) model combines a collaborative approach, with problem-solving activities encompassing features of behavioral

consultation and the Referral Question Consultation (RQC) process developed by Batsche and Knoff (1995). The specific problem-solving components employed in the IBA model are those frequently identified as critical for the design of effective interventions (Flugum & Reschly, 1994; Macmann et el., 1996). These include behavioral definition of the problem, baseline data, clearly identified goal, hypothesized reason for the problem, systematic intervention plan, evidence of treatment integrity, data indicating student response to intervention, and comparison of student performance with baseline. The IBA process is typically implemented by multi-disciplinary teams (MDTs) consisting of a diverse group of educational professionals and the child's parent(s) or other family member(s). In this manner, IBA shares features with the conjoint behavioral consultation model described by Sheridan (Sheridan & Colton, 1994; Sheridan & Kratochwill, 1992; Sheridan, Kratochwill, & Bergan, 2013; Sheridan, Kratochwill, & Elliott, 1990). IBA can be employed to derive interventions for students who are experiencing learning or behavioral difficulty, but are not suspected of having disabilities. In addition, this approach also may be used as part of the multifactored evaluation (MFE) for children with suspected disabilities to assist in identifying effective interventions that will be incorporated into their IEPs (Telzrow et al., 2000).

The Minneapolis Public School's Problem-Solving Model (MPSM; Minneapolis Public Schools, 2001) utilizes the problem-solving model (PSM) to guide decisions regarding: (1) interventions in general education, (2) referral to special education, and (3) evaluation for special education eligibility for high-incidence disability areas. District implementation was driven by four themes: the appropriateness of intelligence tests and the IQ-achievement discrepancy for determination of eligibility, bias in assessment, allocation of school psychologist time, and linking assessment to instruction through curriculum-based measurement (Marston et al., 2003).

In conjunction with the MPSM (Minneapolis Public Schools, 2001), Reschly and Starkweather (1997) conducted an independent evaluation of the Minneapolis PSM through a grant provided by the Minnesota Department of Children, Families and Learning. Their study included direct assessment of samples of students identified as eligible for special education at PSM sites, in order to determine if those students would likely meet traditional criteria for a learning disability (LD) or mild mental impairment (MMI). They further examined staff perceptions, implementation fidelity, and quality of interventions used at PSM and traditional sites. They concluded: a) prereferral interventions under the PSM were superior to those implemented using the traditional approach; b) students received special education services earlier than under the traditional approach; c) within the PSM, comparisons of African American and white students revealed "an equal treatment conception of non-discrimination" ; the attitudes and beliefs regarding PSM of different school staff, including teachers, administrators, social workers, and school psychologists were generally positive, and there was an overlap of 75 percent between students identified using PSM criteria and those likely to have been identified as LD or MMI using the state's traditional criteria (Marston et al., 2003, p. 193-194).

With the push for educators to provide tiered services and to conceptualize problems in schools differently, the National Association of School Psychologists (NASP) began to collaborate with others and discuss the expansion of the school psychologist's role. NASP was asked by the Office of Special Education and Rehabilitative Services (OSERS) to provide information on the ways in which school psychologists could provide expanded services beyond those related to assessment for placement in special education. Of primary interest to OSERS was how school psychologists could engage in consultation in general education classrooms with the emphasis on providing assistance to students and teachers. As this attention on school

consultation increases, school psychologists must be trained to provide consultative services, but many currently are not. Thus, it is necessary to provide consultation training at the preservice level and also to offer means for current practitioners to improve their consultation skills through workshops and other continuing professional development opportunities (Graden, 1989).

Problem-Solving Model/Behavioral Consultation

The problem-solving model or behavioral consultation model was first discussed in earlier literature from Bergan and Caldwell (1967) as a way for educators to work together on school reform. The conception of the school psychologist as psychometrician and clinician has given way to the notion that the school psychologist may best serve school needs by functioning as a consultant to the school (Derner, 1965; Leton, 1964; McDaniel & Ahr, 1965; Schmidt & Pena, 1964). Kratochwill and VanSomeren (1985) advanced the state of knowledge about the nature of effective team consultation, the role of behavioral assessment, and the training of effective consultants (Kratochwill, 1988).

Originally practiced in a one-to-one arrangement, many school psychologists now find themselves performing school consultation in a team format. This trend began in the 1980s when consultation teams were proposed as a method to increase teacher effectiveness and provide support for students who displayed classroom difficulties (Graden et al., 1985). Fueled by an alarming increase in the numbers of students identified for special education, particularly in the learning disabilities category, the popularity of school-based teams increased as educators sought methods to curtail the perceived over-identification of students with disabilities. Many school systems began to develop consultation teams under such titles as intervention assistance teams and child study teams. By the late 1980s, many states required team consultation as a pre-

condition for referral for a full and individual evaluation for eligibility for special education (Kovaleski, 2002).

Hylander (2012) presented a traditional form of consultation services. Her description of an individual consultant working with a teacher around a student concern typifies what most consider the triadic model of school-based consultation. However, Hylander adequately distinguished the primary focus of this work, emphasizing the desire to create changes in the teachers' beliefs, thinking, and actions (i.e., consultee-centered). A critical recognition in Hylander's discussion of consultee-centered consultation is that the teacher may have the content knowledge to resolve the problem at hand, but is inhibited by how he or she currently views that problem. This distinction is critical in understanding the line between consultee-centered versus client-centered consultation (Gravois, 2012).

The concepts of instructional consultation (Rosenfield, 1996) were originally developed for individual consultant use, but then changed to include collaboration with other consultants and school personnel in assisting school systems to implement instructional consultation as part of a school-wide consultation service model. A push to move from a direct service (i.e., refer-test-place, psychoeducational model) to an alternative consultation-based system revealed the complexity of the changes required. As a result, the process of introducing consultation as a role was conceptualized in line with the literature on innovation and change in educational settings (Rosenfield, 1992).

The instructional consultation team model is based on assumptions that differ from more traditional service options. For most of its history, school psychology has been largely focused on a psychoeducational model that centered on the individual, where problems are seen as individual deficits (Rosenfield, 1992). "The pervasive emphasis on the individual as the basic

unit of study has consequences in practice, from how we define a referral problem to how we intervene in problem situations. The assumption of individual deficit permeates our field, from preservice education, where individual intelligence testing is typically the first clinical course taught, to the school psychology literature, with its heavy emphasis on individual assessment" (Rosenfield, 1992, p. 29). Rosenfield (1992) explored the notion that major changes were needed in the approach to education of students at risk for school failure and thus, there was recognition of the need for substantial change, particularly in how at-risk students receive services. Then came the push for more collaboration among educators and use of the problem-solving model.

The Problem-Solving Model (PSM) is a systematic, data-driven process that is designed to use collaborative teaming to address the diverse needs of students. It emphasizes early classroom interventions, goal setting, data-based decision making, and functional evaluation procedures. This alternative to traditional eligibility criteria, which require the use of intelligence tests, represents a significant shift in assessment philosophy (Marston et al., 2003). The focus is on student response to instruction, which becomes one of the primary factors for determining eligibility for special education. Marston et al. (2003) found that although their program evaluation data indicated that the PSM improves the assessment and decision-making process in special education, it also complemented general education's mission of accelerating the learning of all students.

The PSM utilized by the Minneapolis schools (MPSM; Minneapolis Public Schools, 2001) is based on a sequence of problem-solving steps for identifying and supporting students with academic difficulties. The four steps are: describing the student's problem with specificity, generating and implementing strategies for instructional intervention, monitoring student progress, evaluating effectiveness of instruction, and continuing this cycle as necessary. The

PSM is based on a continuous “teach-test-teach-test” model in which response to treatment drives decision making about the least restrictive environment for an individual student (Marston et al. 2003). For special education and related services personnel, a major shift prompted by the PSM is the emphasis on collaboration across disciplines and across general and special education boundaries. For many, this required ongoing training in collaborative teaming and progress monitoring as school personnel roles shift and evolve over time (Marston et al. 2003).

Various training approaches were used for implementation of the PSM within Minneapolis schools. The predominant approach during the first waiver period was to send PSM lead staff out to the schools to conduct schoolwide training at staff meetings or during school staff development time. These sessions typically involved 45–60 minutes of introductory presentation with follow-up training and consultations. Follow-up sessions were usually held with administrators, school lead staff, and building psychologists in attendance. An advantage to this model was that all training was conducted by the same group of three trainers, who provided a high level of expertise on the model and consistency in the message. The downside of the model was that the three lead staff members were not able to visit all schools consistently for follow-up training. A larger cadre of lead trainers would have allowed for more consistent and effective training at the initial stages of implementation (Marston et al. 2003).

In conjunction with the PSM and consultation model, behavioral consultation has the strongest empirical support demonstrating its efficacy (Gresham & Kendall, 1987). However, some research has discussed behavioral consultation as "problem finding" (e.g., McPherson, Crowson, & Pitner, 1986; Voss, 1980) as presenting the finding that expert problem solvers focus more on investigating causes of the problem. Bergan and Tombari (1976) found similar results in their investigations of behavioral consultation, in which it was shown that problem

finding (called problem identification in behavioral consultation) is critical to effective consultation (e.g., Bergan & Tombari, 1976).

Proponents of problem-solving approaches have attributed numerous positive outcomes to their implementation, including reductions in rates of referrals for specialized testing (Fuchs et al., 1996; Graden et al., 1985), fewer special education placements (Graden et al., 1985), enhanced learning and behavioral outcomes for students (Fuchs & Fuchs, 1989), and advancement of school-based collaboration (Fuchs et al., 1990; Pugach & Johnson, 1989). Although problem-solving consultation has considerable intuitive appeal, attributions of positive outcomes to such processes are not defensible until research confirms reliable and consistent implementation of problem-solving approaches in applied settings (Telzrow et al., 2000).

In order to improve the implementation of PSM, districts must, "devote greater resources to developing and supporting professional practices consistent with effective use of progress monitoring data to solve problems. This will require preservice and in-service training and accountability systems that encourage effective use of progress monitoring to formatively evaluate efforts to solve problems" (Deno, 2002, p. 53). Successful implementation of the PSM is linked to comprehensive and ongoing training on data-based decision making, follow-up consultation, and a strong districtwide commitment to using data to create better instructional interventions for students (Marston, et al., 2003).

With educational mandates not being specific about how the PST should function, it can be difficult to implement and foster an effective process especially because not only do procedures differ among states and districts, but they can also differ between schools within the same district. Consultation members have the problem-solving process as a guide to conducting effective meetings, but the process may not always lend itself to the formatting of each school's

meetings. On a larger scale, other schools and districts may also want to revisit their PST process and conduct self-reports on procedural fidelity in an effort to make similar improvements.

Factors Affecting PST Implementation

Despite the apparent support of PST models, there are several system factors affecting PST implementation including team format, assignment of staff, and training (Kovaleski, 2002), parental involvement (Izzo et al., 1999), administrative support (Burns et al., 2008), and scheduling (Chalfont & Pysh, 1989). Chalfant and Pysh (1989) cited frequent barriers to PST implementation such as insufficient time, no useful intervention strategy, interference with the special education referral process, lack of readiness to initiate teams properly, and insufficient impact on student performance. Furthermore, Ross (1995) listed several obstacles to successful PST implementation including loss of funding from reduced student enrollment in special education classes, the cost of intervention assistance programs, loss of jobs, increased job responsibilities without increased compensation, a resistance to change, and poorly conceived plans (Ross, 1995).

Characteristics related to successful multidisciplinary team functioning have been identified as sharing suggestions, joint planning and decision making, and reciprocal teaching and learning (Armer & Thomas, 1978). Yet such factors as the mandated nature of multidisciplinary teams (Pryzwansky, 1981); discrepancies in power, training and experience of team members (Hyman, Carroll, Duffy, Manni, & Winnikur, 1973); the increase in the amount of information needed to evaluate students, and the types of options open to teams combine to make the decision-making process facing teams increasingly difficult and complex (Yoshida, Fenton, Maxwell, & Kaufman, 1978). Surveys of actual team functioning have found that appropriate, multidisciplinary team case-handling techniques can often be impaired by members'

confusion over placement team goals and duties (Fenton, Yoshida, Maxwell, & Kaufman, 1978); decision making and voting affected by interpersonal rivalry rather than objective data (Hyman et al., 1973); individual biases and beliefs of individual team members (Holland, 1980); minimal involvement of key members; unsystematic collection and analysis of data, and loosely construed decision making and planning processes (Pfieffer, 1980). Implementation of a program to develop and improve multidisciplinary team problem-solving and decision making apparently would allow school psychologists to provide a consultation service which could benefit both teams and general special education services in a school district.

In regard to the participants involved in the PST, it is important to note that the members vary amongst schools and often times, those that are involved are not always the only participants that should be involved. For instance, schools know the importance of having parent involvement and collaboration; however, time and scheduling often dictates if having the parents in for a meeting is feasible. Results from Izzo et al. (1999) suggest that enhancing parental involvement in children's schooling relates to improvements in school functioning. Parents would be very helpful to serve on their child's problem-solving team, especially when the child gets older and the problems tend to get bigger. Unfortunately, parental involvement declines over the student's educational career (Brannon, 2007; Coleman, 1991; Jeynes, 2005), and therefore can be almost nonexistent by high school (Izzo et al., 1999) when educators know that is still highly valuable (Hickman, Greenwood, & Miller, 1995; Keith, 1991; & Keith et al., 1998).

Parents are essential members of the PST and of greatest importance, they know their children best. Serving of the PST or provided input is beneficial for the student's success within the PST process. Unfortunately, parents are not always invited or made aware of this process. Understanding that there is parental decline over the course of the child's educational career,

schools need to be more proactive and accommodating at the elementary school level to enhance the partnership with parents. Ultimately, being more flexible to attempt to have the parents on the teams and at the meetings should be a goal for PST members. Teachers would probably agree that having the parent present would be helpful and could also make the parent aware of the issues; they could most likely provide useful information in order to help the student or the team make their recommendations. Even if parents cannot attend the PST meeting, their feedback is imperative to process. PST members should at least attempt to obtain parental feedback for their student.

Not only is it challenging to get parents to be active members of the PST, it can also be challenging to get pertinent school members to be a part of the meetings. In schools, often the biggest barriers to many issues are time and scheduling. There is not always enough time in the day for a teacher, a principal, a reading specialist, or other members to participate in the PST meetings. There is also the lack of substitutes, the lack of staff members, or just the lack of time due to the ever persistent deadlines that makes it difficult for members to be available for the PST meetings. This can be problematic when the essential members that would be providing the interventions are not available to provide input in regard to the availability of resources (typically an administrator) and if the student would be eligible for any type of services. When teachers cannot find time to fit intervention programs (such as PST) into their schedules, and if they do not share the team's belief about in the importance of the program, they may implement the program incompletely or not at all (Meyers et al., 1993).

Assigning roles and choosing leaders for PSTs can also be important, whether or not the team is composed of only teachers or if an administrator is present can be vital. Teacher assistance models encourage teacher efficacy and thus stress decreased administrative power

within the teams (Burns et al., 2005). When an administrator serves on a PST, his or her role may vary among schools, but is often important to ensure that recommendations are feasible within the building, and do not put a strain on the resources. Administrators' roles are also seen as less action-oriented, rather as managerial and facilitative (Phillips & McCullogh, 1990); little research exists that compares the effectiveness among different role assignments.

Last, but of importance, is how PST members can be most effective in terms of what they bring to the table, their knowledge of the PST and the process, and how to collaborate effectively to help the student. Everyone brings his or her specific training and knowledge in his or her specific area, but are the members trained in pre-referrals (referral to the PST prior to a special education referral), data collection techniques, progress monitoring, and interventions? Presumably teachers do receive some form of education and training in making team-based decisions; however, this is not always a guarantee. Burns et al. (2005) found that the level of training that PST members (e.g., school psychologists, school counselors, classroom teachers, and administrators) in the field receive is largely unknown or is suspected to be quite insufficient. Further, future researchers may wish to examine which skills lead to effective implementation of PST and the consistency of prerequisite skills between and among PST models, consultation, collaboration, and/or pre-referral intervention teams (Burns et al., 2005).

There are a limited number of studies that have examined concerns and training for the PST. Teachers expressed concerns about teams when insufficient time was allocated for team meetings, when teams failed to generate useful strategies, or when they appeared to interfere with the referral process (Chalfont & Pysh, 1989). After examining the data from 96 teams, Chalfont and Pysh (1989) also found that team members perceived their school-based teams to

be effective because of three factors: principal support, teacher support, and the professional and interpersonal skills of team members.

Lee-Tarver (2006) investigated teacher training, teacher participation and teacher understanding of the relationship between PST's functions and special education services. Findings suggested that the majority of teachers received training on the purpose and function of PSTs. However, training occurred after teachers were selected to serve on teams. Results also indicated that teachers were actively involved in the student support team process particularly when they themselves referred a child. Additionally, findings indicated that the majority of teachers did not consider referral to student support team as a direct pipeline to evaluation for special education services.

Due to a variety of factors, teachers may feel unprepared to serve on PST. They may feel as if they did not receive sufficient training in the areas of interventions, behavior management, or other issues that may arise at PST meetings (Noell et al., 2002). Teachers' feelings of preparedness, support, and ability to perform the proposed interventions can often dictate the fidelity of the implementation of interventions or the procedural fidelity within the PST. Interventions not delivered as designed can be less efficient or effective (Noell et al., 2002; Wilder, Atwell, & Wine, 2006). Unfortunately, in schools many interventions are delivered only partially and their full impact is not seen (e.g., Groskreutz & Higbee, 2011). Due to the importance of effective utilization within the PST, it becomes apparent the PST process in schools needs to be examined to ensure the framework is conducted with fidelity.

The skills required to conduct effective PSTs are complex and are often not included in typical teacher-preparation programs (Kovaleski, 2002). Consequently, meaningful and

sufficient training for members of the team as well as the entire school faculty is a critical aspect of implementing this process. All team members need to be trained in the fundamentals of collaboration, including communication skills, team building and maintenance, and an understanding of team roles and responsibilities. Individual members need training in curriculum-based assessment, behavioral assessment, and differentiated instructional strategies. The format of the training program is also critical. Effective implementation is usually not realized if the training consists solely of didactic, group presentations (Kovaleski, 2002). Rather, on-site consultation that features actual demonstrations of the skills and guided practice with practitioners is needed. For example, individual student assessment that leads directly to the development of ideas for instructional strategies can be modeled with students in an actual classroom situation. Similarly, a developing team can receive in vivo guidance from a consultant during a team meeting. Practicing school personnel, as with all learners, learn best by doing, and by receiving specific feedback (Kovaleski, 2002). Working with schools on the procedural fidelity within their PST could ultimately assist the members on improving their process.

Fidelity

Fidelity or the extent to which a program is implemented as intended is an essential component in evidence-based practice and RtI, both of which have significant implications for research and school psychology (Sanetti & Kratochwill, 2009). As diverse fields move toward evidence-based practice, pressure for documenting fidelity is likely to increase, both when interventions are developed and as they are put into use (Schulte, Easton, & Parker, 2009). Continued study of the fidelity of problem-solving implementation and its effects on students, families, and educators is critical for several reasons. Such approaches have been widely employed in schools (Carter & Sugai, 1989; Pugach & Johnson, 1989), have been promoted as

exemplifying "best practice" for school psychologists (Thomas & Grimes, 1995), and are incorporated in department of education procedures in some states, including Iowa and Pennsylvania. Inconsistencies in the conceptualization of fidelity reduce the interpretability of studies examining its effects (Dane & Schneider, 1998).

Integrity and fidelity, which have been used interchangeably in research, can be defined as the degree to which specified procedures are implemented as planned (Gresham, Gansle, Noell, Cohen, & Rosenblum, 1993; Moncher & Prinz, 1991). If fidelity data are not collected, it is difficult to determine whether or not nonsignificant results are due to a poorly conceptualized program or to an inadequate or incomplete delivery of the recommended interventions (Dane & Schneider, 1998). The verification of program integrity is of particular importance in research in preventative interventions, which are often in conditions that present numerous obstacles to fidelity in program delivery (Dane & Schneider, 1998). Obstacles include limitations in resources, frequently working with numerous paraprofessionals and coordination of implementers (Institute of Medicine, 1994). Therefore, frequent procedural fidelity checks may help alert the PST members when a change or some training needs to occur.

A PST that is implemented with high fidelity is just as important as creating a team that produces effective solutions for the students. Schools need to determine many factors when planning how the problem-solving team will function. Factors include: who serves on the team; how frequently the team should meet; how they will collect data; how many cases the team can simultaneously work on; when to refer students; if an administrator should serve on the team; how long an intervention should last; how many interventions should be attempted prior to determining the student failed to respond to intervention; how the team can find the resources for

the interventions, and last, but of great importance is how the team can be implemented with high fidelity.

Because PSTs are typically not mandated, it is important for school districts that initiate PSTs to build in an evaluation of the program to determine its impact. Demonstrating that PSTs are effective in meeting the needs they were intended to address is critical in maintaining long-term support for the process. Before implementation, school districts should put in place procedures to collect ongoing data that can be used for program evaluation (Kovaleski, 2002). These data take three forms. First, data on improvements in academic variables for individual students undergoing the pre-referral process should be gathered. For example, Kovaleski et al. (1999) showed that students who were served by PSTs displayed increases in time on task, task completion, and task comprehension when the problem-solving model was implemented with a high degree of fidelity. A second level of analysis utilizes school-wide indicators, such as numbers of students served by the process, numbers of students referred for special education evaluations, and numbers of students retained in grade. Hartman and Fay (1996) thoroughly described these measures in their analysis of the impact of instructional support teams. A third type of evaluation that uses surveys of teachers and parents who have utilized the PST process can be beneficial, but should be considered as the least rigorous and valid of the three types. Satisfaction with the process may not necessarily be related to outcomes for students (Kovaleski, 2002). Further research accomplished by surveying members who have utilized the PST is essential, and more specifically, research involving the PST procedures.

Dane and Schneider (1998) examined five aspects of fidelity which have been identified in literature (adherence, exposure, quality of delivery, responsiveness, and program differentiation).

As has been typical with previous research, the present study will focus on one of the most highly focused upon aspects, adherence (Noell et al., 2005). Adherence to the procedures of the problem-solving model and the PST will be the primary focus of this study. Adherence measures are usually obtained through observational procedures (Dane & Schneider, 1998) and are generally measured as a percent of steps completed, which will be similar to the method employed in this study, but will also include participant self-reports. Different from previous research examining adherence, which investigated the treatment integrity, this study will explore procedural fidelity. Noell (2008) distinguished between consultation procedural integrity (how the consultant carries out the consultation model) and treatment plan implementation (how the consultee carries out the treatment plan). Noell's model highlights the complexity of fidelity when indirect service models are used.

Development of fidelity instruments and measuring fidelity has increased in recent years (Sass, Twohig, & Davies, 2004), but it is unusual for researcher to provide the same type of psychometric data. Reliability data have sometimes been provided, including reports of the percentage of agreement between raters or observers (Dusenbury et al., 2005), internal consistency of measures (McGrew, Bond, Dietzen, & Salyers, 1994), intraclass correlations for raters (Carroll et al., 2000; Hilsenroth, Blagys, Ackerman, Bonge, & Blais, 2005), or test–retest reliability (e.g., Resnicow et al., 1998). However, validity data are rarely provided; in the absence of these data, one cannot be sure that the measures actually assess integrity (Perepletchikova & Kazdin, 2005). Differences in the methods of data collection as well as the instruments utilized make interpretability difficult for researchers.

In measuring procedural fidelity, a scale that includes separate ratings of adherence and competence on a variety of dimensions of consultation (e.g., problem identification, elicitation of

information from the consultee) might be useful in consultation efficacy research to understand if either the control of topics or how a consultant controls topics in consultation can influence consultee engagement and treatment plan implementation (Schulte et al., 2009). The development of a reliable, validated, generic procedural fidelity instrument is another area in which education could build on the measurement innovations for other research fields. With a generic procedural fidelity instrument, it might be possible to establish the number and length of observation occasions required to be confident that fidelity estimates are representative of the entire process. At present, there is no empirical basis for how much fidelity data are enough (Schulte et al., 2009).

Across studies and disciplines, definitions of procedural fidelity and terminology remain inconsistent. Only a small number of studies has examined the problem-solving team process and fidelity with the PST (Burns et al., 2008; Ruby et al., 2011), and none has examined observational data along with self-report data to determine if there is a correlation. Assuring PST fidelity as schools continue to move toward RtI and evidence-based practice represents a challenge that needs to be further explored. The importance of the issue is an emerging research topic that needs to addressed for the educational and psychosocial needs of children.

One previous study that examined fidelity within the PST was Burns et al. (2008), who explored the utilization of performance feedback to enhance implementation of the PST process using a 20-item procedural fidelity checklist created from literature (Bahr & Kovaleski, 2006; Kovaleski, 2002; Minneapolis Public Schools, 2002; Rosenfield & Gravois, 1996). Burns et al. (2008) created the checklist after reviewing previous research (Kovaleski, 2002; Rosenfield & Gravois, 1996) that examined the process in which interventions were developed by conducting a self-assessment of its process. The items were endorsed a ‘yes’ if the team consistently engaged

in the activity and a ‘no’ if not. Then they examined the items listed as inconsistently implemented or absent and decided if and how they could address the recommendation.

Burns et al. (2008) tested their hypothesis with a multiple-baseline design across three schools. Each team was observed and the checklists were completed for each student discussed. They collected baseline data before beginning performance feedback for 4-9 weeks at each school. After collecting baseline data, the team received performance feedback. A copy of the checklist and the chapter describing the items in greater detail (Burns et al., 2008) was handed out to every team member in a 15-minute meeting. The performance feedback provided in the study was modeled after Noell et al. (2005). The observation data were graphed each week and distributed to each PST member at the beginning of each meeting. Individual items were discussed to reinforce correct implementation by the PST members and to point out those items that were omitted. The team brainstormed ways to better address the missed items. The entire feedback process required approximately 5 minutes to complete in addition to the 20 to 60 minutes dedicated to the PST meeting.

Burns et al. (2008) found that providing performance feedback could be a method to increase the fidelity with which critical components of data-based problem-solving are implemented, but these data suggest the need for additional research. Using the procedural fidelity checklist, they found that PSTs used data to develop interventions with greater frequency than in the baseline phase, which was important, given that instructional and academic interventions developed in schools are often not related to specific assessment data (Conca, Schechter, & Castle, 2004). They also found that teams consistently used a form to request a meeting and to document the process, and followed-up meetings with consultation and/or future meetings.

Burns et al. (2008) reported that the items for the procedural fidelity checklist were derived from the research literature with little knowledge about the relative importance of each. However, given the link between intervention integrity and successful outcomes (Noell et al., 2005; Vollmer, Roane, Ringdahl, & Marcus, 1999), it appeared to them that data evaluating whether or not the intervention that the PST developed was actually implemented would be critical. Burns et al. (2008) suggested that future research could examine the 20 items to determine empirically which are most important for PST success. Furthermore, they suggested that future research examine the relationship between subjectivity of the individual item and implementation integrity.

Another study examining fidelity of the PST was Ruby et al. (2011), who examined the quality and level of fidelity in school-based teams. They used Problem-Solving Team Rubric adapted by Upah and Tilly (2002) to evaluate the impact of training for two groups (treatment and control).The adapted rubric from Upah and Tilly (2002) was a 12-item adaptation of Hord, Rutherford, Huling-Austin, and Hall's (1987) innovative configuration to measure quality interventions in schools. The study by Ruby et al. (2011) expanded the work of Flegum and Reschly (1994) to examine everyday practices of teams in schools with direct measurement rather than self-report methodology. They conducted two studies to examine adherence (fidelity) to a problem-solving model. In the first study, they reviewed permanent products (intervention plans) from team meetings to rate adherence to the problem-solving process, and in the second study, they observed directly and rated adherence to the problem-solving process. They used the same rubric to examine the influence of training on treatment schools compared with control schools and also conducted additional analyses in each study to examine qualitative factors that may have influenced the effectiveness of problem-solving teams. Ruby et al. (2011) found that

overall adherence to a problem-solving model and quality of intervention plan development were significantly below the level considered adequate to ensure intervention effectiveness, that there was no significant effects of training for student outcome, and that there is a need for change in the ways PSTs operate and are supported in schools.

Future research suggested by Ruby et al. (2011) indicated a need for teams to develop more problem-solving skills and to further examine the problem-solving process. Systematic change needs to occur to ensure fidelity within the PST and the purpose of teams should align with goals to assist with the restructuring of general and remedial programs. Rather than implementing problem-solving in isolated team meetings, it may be important to train schools to adopt the concepts of problem-solving and data-based decision making for educational service delivery systems across an entire district, school, and classroom (Ruby et al., 2011). Clear and direct research about problem-solving within school settings is critical and should inform future training and systems reform efforts.

Previous researchers have emphasized the need to develop more cohesive consultative practices, to examine the PST process, and to ensure that PSTs are implemented with fidelity. No previous studies have examined the procedural fidelity within the PST with the use of observations and self-report. Therefore, the goal of this study was to examine the fidelity of the PST in an effort to discern the degree of fidelity as measured by team members and an independent observer. Furthermore, this study examined the procedural fidelity of the PST (through observations utilizing a procedural fidelity checklist) in an effort to determine if team members self-reports correlated with observed fidelity within their PST.

Chapter 3: Method

Design

This study employed a repeated measures design with a naturalistic observation, utilizing a procedural fidelity checklist to provide analysis of the Problem-Solving Team (PST) process across three local elementary schools. The PST members and the researcher completed the procedural fidelity checklist. Eight meetings at each school were observed for a total of 24 meetings. Core team members at each of the schools included six to seven members, but due to absences, three to seven members participated at each meeting. Therefore, a total of 128 self-report procedural fidelity checklists across schools were completed by the team members and 24 procedural fidelity checklists were completed by the experimenter. PST members at School A completed 41 checklists; School B completed 41 checklists, and School C completed 46 checklists.

Participants

The participants in the study were the school personnel, who served on the PST as core team members across three elementary schools within a small suburban school district. Core team members for School A included a special education teacher, two related service providers (i.e., speech therapist, reading specialist), administrator (i.e., principal), guidance counselor, and school psychologist. The speech therapist at School A participated only in the morning meetings, not in the afternoon meetings. Core team members for School B included a gifted support teacher, two related service providers (i.e., speech therapist, reading specialist), administrator (i.e., principal), guidance counselor, and school psychologist. The speech therapist at School B attended only on an as-needed basis (i.e., if speech or language concerns were reported). Core

team members for School C included a special education teacher, a general education teacher, two related service providers (i.e., speech therapist, reading specialist), administrator (i.e., principal), guidance counselor, and school psychologist.

Rotating team members for School A and School B was the referring teacher of the student that was discussed, and the student's parent/guardian. School C did not have the referring teacher or parent present; instead, there was a general education teacher that served as a core team member on the PST. The rotating members were not always present and varied at each of the meetings for the two schools. Because the referring teacher and parent/guardian were rotating and varied per meeting, they were not considered core team members and, therefore, were not study participants and they did not complete the self-report checklist. Each elementary school had six to seven core members assigned to the PST (School A= 6, School B= 6, School C= 7), resulting in a total of 19 core team members participating across the three schools. Due to participant absences, some meetings had three participants in attendance and other meetings had seven participants. All participants present for meetings completed the checklist and were included in this study.

Setting

The study took place in three elementary schools in a suburban district in southeastern Pennsylvania.

School A enrolled 375 students in grades K through 5 during the 2017-2018 school year. School A housed the district's emotional support classroom as well as the life skills classroom. The student population in this school was composed of 14.9 % receiving special education services through an IEP; 3.2% receiving services through a Section 504 plan; 5% receiving

gifted support services through a GIEP, and 14.7% receiving reading support through Title I services. A majority of the students attending the School A were Caucasian (77%), with 2.4% being African American, 2.6% Hispanic, 9% Asian American, and 0% Native American, 8% undefined race, and 1% with 2 or more races. The PST at School A met 1-2 times per week (Wednesday morning and afternoon). The meetings generally lasted between 30-45 minutes. Typically, three students were discussed per meeting, but not every student was an initial referral. There are approximately 60 PST referrals per year at School A. PST members do not receive training prior to serving on the team. The purpose of the PST team at School A is to identify student needs or strengths that require supports beyond what the regular education teacher has been able to do to date. Any student need is discussed from academic strength to academic, social/emotional/behavior need, or related service need (e.g., speech/language, occupational therapy, physical therapy). The team member roles are well defined and may change from one case to another; a specific case manager is assigned to each case that moves with the teacher through the intervention period.

School B enrolled 379 students in grades K through 5 during the 2017-2018 school year. The student population in this school was composed of 17.2 % receiving special education services through an IEP (7.2% are speech-only IEPs); 3.2% receiving services through a Section 504 plan; 4.5% receiving gifted support services through a GIEP, and 18.2% receiving reading support through Title I services. A majority of the students attending School B were Caucasian (59.1%), with 3.7% being African American, 4.5% Hispanic, 9.8% Asian American, 0% Native American, 21.6% undefined race, and 1.8% with 2 or more races. The PST at School B met once per week. The meetings generally lasted between 30-60 minutes. Typically, one student was discussed at each meeting. There are approximately 50 PST referrals per year at School B. PST

members do not receive training prior to serving on the team. The purpose of PST at School B is to serve as a problem solving platform. Teachers, parents, or staff members refer the student. Areas of concern for referrals can include academic, behavioral, social, speech/language, occupational therapy, physical therapy, medical, or need for gifted support services. PST is part of the referral process for a multidisciplinary evaluation. However, not all students that are brought to PST are evaluated for special education services. Any student can be discussed at PST. The reason for a student's being discussed at PST differs from case to case. However, typically, students that are brought to PST are discussed due to teacher concerns in one of the following areas: academics, behavior, social, speech/language, occupational therapy (sensory, visual motor, fine motor, etc.) physical therapy (gross motor, mobility skills, etc.), or medical reasons. In addition, a teacher can refer a student to the PST process should they feel said student requires specially designed instruction beyond the general education curriculum in order to yield meaningful educational progress, such as potential gifted support. In general, the roles of the core members are well-defined. Each member, based on his/her specialty, can be a potential interventionist for the referred student.

School C enrolled 410 students in grades K through 5 during the 2017-2018 school year. School C housed the district's Autistic support classroom. The student population in this school was composed of 21.7 % receiving special education services through an IEP; 4.6 % receiving services through a Section 504 plan; 4.6% receiving gifted support services through a GIEP, and 0% receiving reading support through Title I services. School C was not eligible for Title I funding. A majority of the students attending School C were Caucasian (86.34%), with 2.7% being African American, 1.7% Hispanic, 5.6% Asian American, and 0% Native American, 1% undefined race, and 2.7% with 2 or more races. The PSTs met once per week. The meetings

generally lasted between 30-60 minutes. Typically, three to four students were discussed at each meeting; however, every student was not an initial referral. PST members do not receive training prior to serving on the team. The PST had been re-implemented this school year at School C. Last year (2016-2017), there were approximately ten students referred to the PST and the team met once a month. The purpose of PST at School C is to implement interventions for struggling students. This includes academic, behavioral, speech and language concerns, as well as fine and gross motor difficulties. Individual roles are well-defined.

Materials

The measures utilized in this study included a procedural fidelity checklist (see Appendix A), which was a 19-item implementation checklist that measured steps of the problem-solving model. The checklist was adapted from Burns et al. (2008), based on literature (Bahr & Kovaleski, 2006; Kovaleski, 2002; Minneapolis Public Schools, 2001; Rosenfield & Gravois, 1996) and modified for the purpose of this study. Modifications included removing one item from the previous checklist ("Team meets on a consistent (e.g., weekly basis") as well as referring to the team as the child study team (CST). The procedural fidelity checklist included 19 quantitative, closed-ended items using a 4-point Likert scale. The scale was modified and adapted for the purpose of this study. The items examined the following areas: scheduling, data collection, use of data-based decision making, use of evidence-based interventions that was linked to specific concern, consultation, progress monitoring, assessing implementation integrity, follow-up, role designation, and whether or not the administrator was present. The operational definitions for each item on the checklist are included in Appendix C.

The 4-point Likert scale will be scored as follows: 4-“Strongly Agree”, 3-“Agree”, 2-“Disagree”, and 1-“Strongly Disagree”. Procedural fidelity checklists with higher scores indicated higher fidelity within the problem-solving team during that specific meeting. A lower score indicated lower fidelity procedural implementation of the problem-solving model. No specific information about the student discussed was recorded on the form.

The observer’s procedural fidelity checklist was the same format as the PST member’s checklist, but also included additional information about the meeting (i.e. number of core team members present, roles of each member, length of the meeting, if the parent was present for the meeting, the grade level and gender of the referred student, and if the concern was academic, behavioral, both or neither (i.e., speech and language, gifted, fine/gross motor). See Appendix B for the observer’s procedural fidelity checklist. All 19-items on the checklist were scored and analyzed.

Procedures

Participant training. The experimenter met with the PST members at each school prior to the start of the study, at the first meeting. The experimenter trained the PST members on the purpose and usage of the checklist, which took approximately 20-minutes. The training at School C was approximately 10-minutes due to another meeting running later and the participants not being available. The experimenter provided a brief explanation of the purpose of the study. The experimenter also reviewed each item to ensure that the participants understood the item. Operational definitions of the items from the procedural fidelity checklist were provided at each meeting and reflected the definitions formulated from Burns et al. (2008; see Appendix C). The experimenter also provided a research article by Burns, VanDerHeyden, and Boice (2008) to

briefly review the five empirically supported criteria for effective academic interventions (correctly targeted skills, explicit instruction, appropriate level of challenge, high opportunity to respond, and immediate feedback). The criteria were briefly described so the participants could answer item 7 effectively ("Selected interventions are research based").

All documents were sent via email to the participants prior to the first meeting/training, and paper copies were available at each meeting. Contact via email was made prior to the first meeting/training so the researcher could introduce herself, discuss the purpose of the study, and provide the documents (i.e., checklist, definitions, and article) for the participants to review prior to the meeting/training.

Participant Self-Report. The procedural fidelity checklist was distributed to each team member prior to each meeting. Each participant was asked to respond independently and reflect on the meeting that was occurring.

The participants were given the procedural fidelity checklist prior to the discussion of each student so they could also complete the procedural fidelity checklist during the meeting. At times, the participant chose to complete the procedural fidelity checklist after the meeting. Time was given at the end of each meeting for the participants to complete the procedural fidelity checklist. The observer collected the procedural fidelity checklist after each meeting, with the exception of a few times when a participant had to leave during the meeting and forgot to hand in the checklist. In these instances, the checklist was collected at the next meeting.

Observation. During the naturalistic observation, the observer completed the procedural fidelity checklist (see Appendix B*)*. For each meeting, the observer sat away from the meeting table and did not participate in the PST meeting.

Chapter 4: Results

To analyze the data for this study, the Procedural Fidelity Checklist items were grouped into 3 subscales: problem identification (i.e., consistent with a problem-solving model), problem analysis (i.e., consistent with a problem-solving model), and PST support. Problem identification and problem analysis are stages of the problem-solving model. Problem identification is the first stage in which the problem is identified and defined in measurable and specific terms. The second stage is problem analysis in which the problem identified is analyzed to gather data. PST support includes items related to documentation of the process and participants' roles and support. The items for each subscale are included in Table 1.

Table 1

Checklist Subscales

Subscale	Items
Problem Identification	4, 5, 11, 12, 13
Problem Analysis	6, 7, 8, 10, 14, 15, 16
PST Support	1, 2, 3, 9, 17, 18, 19

A repeated measures 3x2 analysis of variance (ANOVA) was conducted to determine if there was a significant difference by rater (i.e., participant and observer) and school (i.e., A, B, and C). The researcher hypothesized that the team members' self-report ratings of procedural fidelity would be higher than the observer's ratings of procedural fidelity. Results showed that there was not a main effect by rater or school. However, results revealed that there was a

significant interaction between rater and school for the problem identification and problem analysis subscales.

The means and standard deviations for the observer's ratings and the team members' self-ratings are presented in Tables 2-4 for each of the three subscales (i.e., problem identification, problem analysis, and PST support).

Table 2

Means and Standard Deviations of Team Members' and Observer's Ratings for Problem Identification Subscale

	Team Member		Observer	
School	*M*	*SD*	*M*	*SD*
A	3.46	.21	3.45	.30
B	3.34	.19	3.70	.32
C	3.20	.41	2.73	.51
Total	3.33	.30	3.29	.56

Table 3

Means and Standard Deviations of Team Members' and Observer's Ratings for Problem Analysis Subscale

	Team Member		Observer	
School	*M*	*SD*	*M*	*SD*
A	3.28	.23	3.05	.46
B	3.24	.22	3.13	.21
C	3.26	.24	2.59	.34
Total	3.27	.22	2.92	.41

Table 4

Means and Standard Deviations of Team Members' and Observer's Ratings for PST Support Subscale

	Team Member		Observer	
School	*M*	*SD*	*M*	*SD*
A	3.51	.12	3.30	.47
B	3.31	.18	3.51	.26
C	3.33	.34	3.36	.40
Total	3.39	.20	3.39	.38

Mean ratings for each checklist item by team members and observer are presented in Tables 5-7.

Table 5

Means and Standard Deviations of Ratings for Checklist Items for School A

	Team Member		Observer	
Item	*M*	*SD*	*M*	*SD*
1	3.62	.44	3.38	.92
2	3.53	.38	3.38	.92
3	3.29	.44	2.88	.83
4	3.63	.27	3.63	.52
5	3.41	.44	3.63	.52
6	3.18	.16	3.13	.35
7	3.44	.36	3.50	.53
8	3.31	.46	3.00	.53
9	3.46	.40	3.63	.74
10	3.64	.38	3.38	.52
11	3.39	.18	3.50	.53
12	3.42	.26	3.38	.52
13	3.45	.27	3.50	.53
14	2.82	.51	2.50	.53
15	3.04	.40	2.63	.92
16	3.55	.33	2.75	.88
17	3.44	.24	3.00	.93
18	3.91	.13	4.00	.00
19	3.33	.40	3.13	.35

Table 6

Means and Standard Deviations of Ratings for Checklist Items for School B

	Team Member		Observer	
Item	*M*	*SD*	*M*	*SD*
1	3.55	.20	4.00	.00
2	3.38	.23	4.00	.00
3	3.06	.21	3.25	.46
4	3.15	.32	3.75	.46
5	3.40	.24	3.75	.46
6	3.28	.26	3.25	.46
7	3.46	.23	3.63	.52
8	3.34	.15	3.13	.35
9	3.43	.26	3.38	.52
10	3.26	.23	3.63	.74
11	3.44	.13	3.75	.46
12	3.37	.31	3.50	.76
13	3.34	.28	3.75	.70
14	3.24	.36	2.63	.52
15	2.93	.46	2.50	.76
16	3.23	.34	3.13	.64
17	2.93	.36	2.75	.46
18	3.58	.33	4.00	.00
19	3.26	.28	3.25	.71

Table 7

Means and Standard Deviations of Ratings for Checklist Items for School C

	Team Member		Observer	
Item	*M*	*SD*	*M*	*SD*
1	3.45	.49	3.75	.71
2	3.39	.49	3.75	.71
3	2.72	.23	2.25	.46
4	3.34	.56	3.13	.64
5	3.27	.52	3.25	.71
6	3.11	.43	2.75	.46
7	3.33	.32	2.63	.52
8	3.44	.20	2.63	.52
9	3.35	.20	3.13	.99
10	3.27	.19	2.25	.46
11	2.86	.47	2.38	.52
12	3.21	.45	2.38	.52
13	3.34	.57	2.50	.53
14	3.24	.38	2.13	.35
15	2.95	.36	2.50	.76
16	3.52	.26	3.25	.71
17	3.34	.40	3.63	.74
18	3.66	.33	3.75	.71
19	3.39	.12	3.25	.71

With the assumption of sphericity being met (Mauchly's W = 1.0), the repeated measures ANOVA indicated a significant interaction effect between rater and school, F (2, 21) = 10.98, p = 0.001 for the problem identification subscale. Similarly, the assumption of sphericity was met (Mauchly's W = 1.0) for the problem analysis subscale, and the repeated measures ANOVA indicated a significant interaction effect between rater and school, F (2, 21) = 4.454, p = 0.024. Last, the repeated measures ANOVA did not indicate a significant interaction effect between

team members' self-ratings and the observer's ratings on the PST support subscale, F (2, 21) = 3.474, p = 0.05.

The researcher hypothesized that the observer's ratings for School A would be higher than for Schools B and C. Instead, the results revealed that there was not a significant interaction by rater for Schools A and B for any of the three subscales, yet there was a significant interaction for School C by the rater only for the problem identification and problem analysis subscales. In School C, observer ratings are lower than team members' self-ratings for the problem identification and problem analysis subscales. There was not a significant difference for the PST support subscale for School C.

Chapter 5: Discussion

Summary of Findings

This study sought to compare two sources of procedural fidelity (direct observation and team member self-report) as methods to assess fidelity of PST. The study determined if there were differences between raters and across schools. The findings of this study explored how consultative efforts may be better spent to address certain areas more effectively, as well as potentially identifying a more efficient way for assessing procedural fidelity, such as team self-report. Proponents in the field may want to emphasize the importance of training individuals serving on PSTs, of ensuring consistency among school-based teams, of assuring proper documentation, and advocating for teams to measure the fidelity within their PSTs.

The researcher hypothesized that the team members' self-report ratings of procedural fidelity would be higher than the observer's ratings of procedural fidelity. No significant difference was found for Schools A and B for any of the subscales, but was found for School C

by rater for the problem identification and problem analysis subscales. The finding with School C may be due to School C's training for the study. The training was shortened due to unforeseen circumstances, thus resulting in less time for questions and answers about the study. A second possible explanation is that at times, participants took the checklists and handed them in at a later date. Not handing in the checklist prior to the meeting may have resulted in the participant's completing the checklist at a later time and not remembering the procedures of that specific meeting. A third possible explanation may have been due to peer feedback for items. When checklists were completed following a meeting, participants seemed to have started a discussion about the checklist or specific items on the checklist. PST members conversed about items they were unsure of or an item they wanted to see if others agreed on. The fourth explanation is that School C never had a parent or the referring teacher present at the meeting. Despite district procedures to include parents at a specific point in the PST process, this was not occurring at School C. But parent and referring teacher information was discussed and typically gathered informally by a PST member.

There are a few implications from these findings. First, the study demonstrated the significance of documentation. All PST members completed necessary documentation and utilized some form of progress monitoring. Second, despite not receiving training to serve on the PST, all teams seemed confident with the measured components of the problem solving model. All teams rated themselves relatively high for problem identification and problem analysis. Third, all teams met consistently, on weekly basis and attempted to have all core team members present. Scheduled meetings and team based decision making is important within the RtI model. Last, the fact that all raters (including the observer) rated the PST support subscale at the highest

level implies that members are participating throughout the process (i.e., assisting with implementation and having assigned roles in the meetings).

School psychologists and educators involved with the PST can see from this study where consultative efforts can be better spent. A formalized training may not be needed to serve on the team or to examine procedural fidelity, but perhaps consultation can be geared towards identifying gaps within individual teams and addressing those. Also, unlike previous research, administrators seem to be more involved in the process and their participation can greatly influence the functioning of the PST, as seen in this study with School B. Last, this study demonstrates the significance of educational reform efforts and its application in the RtI framework.

For the second research question, the researcher hypothesized that the overall level of procedural fidelity would be higher at School A than at School B and School C, due to School A's being involved with the PST process longer. However, the results revealed that School A was not significantly different from School B, possibly due to School B's new principal this year. The principal reportedly changed the PST process from the way in which it had been implemented in previous years. Team members described their previous process as "less formalized", "not occurring as frequently", and "with different core team members". For example, parents were not always invited in and the documentation and data processes were different.

Administrators serve an important role on PSTs and can often have a significant influence on the functioning, as was seen in this study. When an administrator serves on a PST, his or her role may vary among schools, but is often important to ensure recommendations are

feasible within the building, and do not put a strain on the resources. Administrators' roles are also seen as less action-oriented and more managerial and facilitative (Phillips & McCullogh, 1990). Nonetheless, administrative support is an important component to the effectiveness (or perceived effectiveness) of the team. Chalfont and Pysh (1989) found that team members perceived their school-based teams to be effective because of three factors: principal support, teacher support, and the professional and interpersonal skills of team members.

The results of this study point to essential components of the PST process. For example, parent participation in their child's education is important, not only for the parent to be more informed but also for the student's performance. Results from Izzo et al. (1999) suggest that enhancing parental involvement in children's schooling relates to improvements in school functioning. Just as important as parent participation is participation of the referring teacher who would know the student best and be able to provide the most valuable input. Unfortunately, due to scheduling conflicts (Kovaleski, 2002), and substitute availability this is not always feasible.

As seen in this study, parent involvement is not a part of every school's process. Timing also influenced the training for School C and also was problematic for participants to hand in checklists following a meeting. Team format was somewhat similar across schools, but did vary slightly. School B had the gifted support teacher on the PST but the other schools did not and School C had a general education teacher on the PST but the other schools did not. Instead of having a consistent general education teacher present, School A and School B had the referring teacher present, which seemed to be more beneficial because the teacher was the most familiar with the student and the area of concern.

Teachers are presumably the most important member of the PST because their expertise and feedback are essential to each aspect of the process. Research has found that the teacher's role can make a difference too. As mentioned, the teams for this study included regular and special education teachers as well as gifted support (at one school). Burns (1999) found that PSTs with a special education representative (either a special education teacher or a school psychologist) were found to be more effective with a reduction of special education referrals and a reduction in grade retentions. School A and School C had a special education teacher serving on their PST, but School B did not.

Team training is also important for PSTs. Many PST members have not been formally trained, as was the case for the participants in this study. Burns et al. (2005) found that the level of training that PST members (e.g., school psychologists, school counselors, classroom teachers, and administrators) in the field receive is largely unknown or suspected to be largely insufficient. Research has demonstrated the need for training to serve more effectively on the PST.

Similar to Burns et al. (2008), this study found that PSTs used data to develop interventions with greater frequency. Burns et al. (2008) found the increase in frequency after the baseline phase and this study observed a trend with the increase of data and documentation from the beginning of the study to the end. Both studies also found that teams consistently used a form to request a meeting and to document the process, and followed-up meetings with consultation and/or future meetings.

Unlike Ruby et al. (2011), this study found that there was general adherence to the problem solving model and intervention plan development. But unlike Ruby et al. (2011), student outcomes were not measured. Ruby et al. (2011) indicated that there is a need for change

in the ways PSTs operate and are supported in schools, which continues to be recommended. The current study continues to demonstrate a need for evaluating the procedures of PSTs in schools, specifically examining the fidelity. PSTs are essential components to school improvement efforts and therefore the functioning within the team should be consistent with the problem solving model and consistent in more schools.

This study demonstrated that there are several factors that influence the PST. First, despite the researcher's hypothesis that School A would yield higher observer ratings due to the length involved in the PST process; the results actually showed that School B yielded higher observer ratings. This difference was presumably due to School B's having a new principal this year, which demonstrates the influence that administrative support can have on the process. Second, the support from the PST members in terms of how they perceive the process and its importance could subtly be seen on the checklists. For example, a PST member that took one minute to complete the checklist by checking all of one rating (i.e., all 3's) by just putting check marks in one column, without thinking about whether or not each procedure was completed for that specific meeting. Third, the roles of the team members appeared to make a difference in the results. For example, School C never had a parent or referring teacher present. From the observer's ratings, this factor seemed to show lower ratings of fidelity within this team. Measuring the fidelity of PST is not an easy task. There needs to be clear and concise procedures in place that members are all aware of. PST members should be trained to serve on the team to yield the most effective results. There needs to be more than just one researcher collecting the observational data to examine inter-observer reliability. Documentation, data collection, and follow-up consultation need to be mandatory steps in the process. Districts should be more accountable in the PST process.

Limitations

A few limitations are evident as part of this research design that may influence the overall reliability of the results. A limited sample size and selection of participants may have contributed to a low level of generalizability. The schools selected for this study were all within the researcher's district, a small suburban school district with a generally homogeneous group of students and teachers (i.e., mostly Caucasian). In addition, the checklist used to measure procedural fidelity was modified and utilized differently in other studies and therefore does not have reliability and validity with other similar measures. Last, the degree of support for the PST process varied across the three schools. Overall district procedures for the PST process were changed during this study (i.e., 2017-2018 school year), but the procedures were not carried out with fidelity. For example, one school did not have parents participate in the meetings, which was a mandated step in the process.

Demographic data were not collected from the participants but would have shown the homogeneity of the participants (i.e., all Caucasian). Also, all PST members were elementary school personnel, so this study may have yielded different results if the secondary schools had participated.

The checklists that were completed were self-ratings and may have contained bias. Similarly, there was only one researcher collecting observational data so inter-observer reliability was not included and therefore the observer's ratings may contain bias. Additionally, there may have been some degree of social desirability bias because participants may have answered questions favorably to please the researcher.

Other limitations to this study included overall compliance with the study and following procedures of the PST. For example, checklists should have been collected following the

meeting and participants should have individually responded to items. Also, the researcher should have been prepared to address omitted items by following consistent procedures and responses to clarification for omitted items for each school. Furthermore, unlike Burns et al. (2008), the procedures (i.e., form to request a meeting and document the process, and scheduling a follow-up meeting), were not always consistent for each meeting at each school.

Future Directions

Utilization of a checklist to document PST procedural and procedural fidelity could be a useful tool for teams. They are quick and easy to complete and can be modified for each team's needs. Future research should examine the checklist items. As Burns et al. (2008) suggested, the items should be examined to determine which are most important for PST success. Also, using a checklist like Burns et al. (2008) with a 'yes' or 'no' format would have provided more consistent results between team member and observer ratings.

To measure intervention planning and implementation integrity more adequately, it would be interesting to use the checklist in this study and to collect data from the intervention plans as in Upah and Tilly's (2002) study to examine adherence to the problem solving process. Then the team could better understand their PST's effectiveness in terms of the PST procedures and intervention fidelity.

Due to participant confusion for some of the items during specific meetings, it may be efficient to allocate a short amount of time during each meeting to provide feedback to the participants. Providing performance feedback (e.g., Burns et al., 2008), may have been useful for incidents of omitted items or at times when participants were unsure how to answer an item.

Practicing school personnel, as with all learners, learn best by doing, and by receiving specific feedback (Kovaleski, 2002).

Future research should also ensure proper training for PST members. The skills required to conduct effective PSTs are complex and are often not included in typical teacher-preparation programs (Kovaleski, 2002). Consequently, meaningful and sufficient training for members of the team as well as for the entire school faculty is a critical aspect of implementing this process. All team members need to be trained in the fundamentals of collaboration, including communication skills, team building and maintenance, and an understanding of team roles and responsibilities.

With educational mandates not being specific about how the PST should function, it can be difficult to implement and foster an effective process especially because not only do procedures differ among states and districts, but they can also differ between schools within the same district. Consistent with Upah and Tilly's (2002) findings, there continues to be a need for a change in the ways PSTs operate and are supported in school.

References

Adelman, H. S., & Taylor, L., (2008). *Best practices in the use of resource teams to enhance learning supports*. In A. Thomas & J. Grimes (Eds.), Best practices in school psychology (pp. 1689 – 1705). Bethesda, MD: National Association of School Psychologists.

Al Otaiba, S., & Fuchs, D. (2006). Who are the young children for whom best practices in reading are ineffective? An experimental and longitudinal study. *Journal of Learning Disabilities*, *39*, 414-431. http://dx.doi.org /lO.l 177/00222194060390050401

Armer, B. & Thomas, B. K. Attitudes toward interdisciplinary collaboration in pupil services teams. *Journal of School Psychology*, 1978, *16*, 167-178.

Averill, O. H., & Rinaldi, C. (2011). Multi-tier system of supports. *District Administration*, *47*(8), 91-94.

Bahr, M. W., & Kovaleski, J. F. (2006). The need for problem-solving teams: Introduction to the special series. *Remedial and Special Education*, *27*, 2−6.

Bahr, M. W., Whitten, E., Dieker, L., Kocarek, C. E., & Manson, D.(1999). A comparison of school -based intervention teams: implications for educational and legal reform. *Exceptional Children*. *66.* 1: 67 - 83.

Batsche, G. M., & Knoff, H. M. (1995). Project ACHIEVE: Analyzing a school reform process for at-risk and underachieving students. *School Psychology Review, 24*, 579–603.

Bender, W. N., & Shores, C. (2007). *Response to intervention: A practical guide for every teacher*. Thousand Oaks, CA: Corwin Press.

Bergan, J. R. (1995). Evolution of a problem-solving model of consultation. *Journal of Educational and Psychological Consultation, 6*(2), 111-123.

Bergan, J. R., & Caldwell, T. (1995). Operant techniques in school psychology. *Journal Of Educational & Psychological Consultation, 6(*2), 103.

Bergan, J., & Tombari, M. (1976). Consultant skill and efficiency and the implementation of outcomes of consultation. *Journal of School Psychology*, *14*, 3-14.

Berger, J., Yiu, H. L., Nelson, D., Vaganek, M., Rosenfield, S., Gravois, T., & ... Hong, V. (2014). Teacher utilization of instructional consultation teams. *Journal of Educational & Psychological Consultation*, *24*(3), 211-238.

Brannon, D. (2007). Addressing the decline of parent involvement in middle school. *Principal-Arlington-*, *87*(2), 62.

Buck, G. H., Polloway, E. A., Smith-Thomas, A., & Cook, K. W. (2003). Prereferral intervention processes: A survey of state practices. *Exceptional Children*, *69*(3), 349-360.

Burns, M. K. (1999). Effectiveness of special education personnel in the intervention assistance team model. *The Journal of Educational Research*, *92*, 354—356.

Burns, M. K., Peters, R., & Noell, G. H. (2008). Using performance feedback to enhance implementation fidelity of the problem-solving team process. *Journal of School Psychology*, *46*537-550. doi:10.1016/j.jsp.2008.04.001

Burns, M. K., & Symington, T. (2002). A meta-analysis of pre-referral intervention teams: Student and systemic outcomes. *Journal of School Psychology*, 40, 437 – 447. doi: 10.1016/s0022-4405(02)00106-1

Burns, M. K., VanDerHeyden, A. M., & Boice, C. H. (2008). *Best practices in delivery of intensive academic interventions.* In A. Thomas, & J. Grimes (Eds.), Best practices in school psychology (pp. 1151−1162)., 5th ed. Bethesda, MD: National Association of School Psychologists.

Burns, M. K., Vanderwood, M. L., & Ruby, S. (2005). Introducing a new section in school psychology quarterly: changing practice, changing schools. *School Psychology Quarterly*, *20*(1), 89-105.

Burns, M.K.,Wiley,H. I.,& Viglietta, E. (2008*). Best practices in facilitating problem-solving teams*. In A. Thomas,& J. Grimes (Eds.), Best practices in school psychology (pp. 1633−1644), 5th ed. Bethesda, MD: National Association of School Psychologists.

Burns, M. K., & Ysseldyke, J. E. (2005). Questions about responsiveness-to-intervention implementation: Seeking answers from existing models. *California School Psychologist*, *10*, 9-20.

Carroll, K. M., Nich, C., Sifry, R. L., Nuro, K. F., Frankforter, T. L., Ball, S. A., et al. (2000). A general system for evaluating therapist adherence and competence in psychotherapy research in the addictions. *Drug and Alcohol Dependence*, *57*, 225–238.

Carroll, C, Patterson, M., Wood, S., Booth, A., Rick, J., & Balain, S. (2007). A conceptual framework for implementation fidelity. *Implementation Science*, *2*, 40. http://dx.doi.org/10.1186/1748-5908-2-40

Carter, J., & Sugai, G. (1989). Survey on prereferral practices: Responses from state departments of education. *Exceptional Children*, *55*, 298-302.

Chalfant, J. C, & Pysh, M. V. (1989). Teacher assistance teams: Five descriptive studies on 96 teams. *Remedial and Special Education, 10,* 49—58.

Chalfant, J. C, Pysh, M. V., & Moultrie, R. (1979). Teacher assistance teams: A model for within building problem-solving. *Learning Disabilities Quarterly, 2,* 85-96.

Coleman, J. S. (1991). *Parental involvement in education*. Policy Perspectives Series.

Collier-Meek, M. A., Fallon, L. M., Sanetti, L. H., & Maggin, D. M. (2013). FOCUS on Implementation. *Teaching Exceptional Children*, *45*(5), 52-59.

Conca, L. M., Schechter, C. P. l., & Castle, S. (2004). Challenges teachers face as they work to connect assessment and instruction. *Teachers and Teaching: Theory and Practice*, *10*, 59−75.

Costenbader, V., Swartz, J., & Petrix, L. (1992). Consultation in the schools: The relationship between preservice training, perception of consultative skills, and actual time spent in consultation. *School Psychology Review, 21,* 95—108.

Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: are implementation effects out of control? *Clinical Psychology Review*, *18*(1), 23-45.

Darrow, A. (2016). The Every Student Succeeds Act (ESSA): What it means for students with disabilities and music educators. *General Music Today*, *30*(1), 41-44.

Deno, S. L. (2002). *Problem-solving as "best practice."* In A. Thomas & J. Grimes (Eds.), Best practices in school psychology IV: Vol. 1 (pp. 37–56). Washington, DC: National Association of School Psychologists.

Derner, G. F., (1965). Comments on the emerging role of school psychology. *Psychology in the Schools*, *2*, (350-351).

Doll, B., Haack, K., Kosse, S., Osterloh, M., Siemers, E., & Pray, B. (2005). The dilemma of pragmatics: why schools don't use quality team consultation practices. *Journal of Educational & Psychological Consultation*, *16*(3), 127-155.

Durlak, J. A., S£ DuPre, E. P (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the Factors affecting implementation. *American Journal of Community Psychology*, *41*, 327-350. http://dx.doi.org/10.1007 /s 10464-008-9165-0

Dusenbury, L., Brannigan, R., Hansen, W. B., Walsh, J., & Falco, M. (2005). Quality of implementation: Developing measures crucial to understanding the diffusion of preventive interventions. *Health Education Research*, *20*, 308 –313.

Education for All Handicapped Children Act. Public law 94-142. (1975).

Elementary and Secondary Education Act. Public law 98-10. (1965).

Every Student Succeeds Act. Public Law 114-95. (2015).

Fenton, K. S., Yoshida, R., Maxwell, J. & Kaufman, M. (1978). *A decision model for special education programming teams.* ERIC Documents, ED 157221.

Feuer, M. J., Towne, L., & Shavelson, R. J. (2002). Scientific culture and educational research. *Educational Researcher*, *31*(8), 4–14.

Fleming, D. C., & Fleming, E. R. (1983). Consultation with multidisciplinary teams: A program of development and improvement of team functioning. *Journal of School Psychology*, *21*(4), 367-376.

Flugum, K., & Reschly, D. (1994). Prereferral interventions: Quality indices and outcomes. *Journal of School Psychology, 32,* 1–14.

Fuchs, D., & Fuchs, L. S. (1989). Exploring effective and efficient prereferral interventions: A component analysis of Behavioral Consultation. *School Psychology Review*, *18*, 260-283.

Fuchs, L. S., & Fuchs, D. (2007). A model for implementing responsiveness to intervention. *Teaching Exceptional Children, 39*, 14–20.

Fuchs, D., Fuchs, L. S., & Bahr, M. W. (1990). Mainstream assistance teams: A scientific basis for the art of consultation. *Exceptional Children, 57,* 128-139.

Fuchs, D., Mock, D., Morgan, P. L., & Young, C. L. (2003). Responsiveness-to-intervention: Definitions, evidence, and implications for the learning disabilities construct. *Learning Disabilities Research & Practice*, *18*,157 – 171. doi:10.1111/1540- 5826.00072

Fullan, M. (2008). *The six secrets of change: What the best leaders do to help their organizations survive and thrive.* New York: Jossey-Bass.

Graden, J. L. (1989). Reactions to school consultation: Some considerations from a problem-solving perspective. *Professional School Psychology, 4,* 29-35.

Graden, J. L., Casey, C, & Bonstrom, O. (1985). Implementing a pre-referral intervention system: II. The data. *Exceptional Children, 51,* 487-496.

Graden, J. L., Casey, A., & Christenson, S. L. (1985). Implementing a prereferral intervention system: Part I. The model. *Exceptional Children, 51,* 377–384.

Gravois, T. A. (2012). Consultation services in schools: a can of worms worth opening. *Consulting Psychology Journal: Practice & Research*, *64*(1), 83-87. doi:10.1037/a0028123

Gresham, F.M. (1989). Assessment of treatment integrity in school consultation and prereferal intervention. *School Psychology Review*. 18, 37-50.

Gresham, F. (2001, August). *Responsiveness to intervention: An alternative approach to the identification of learning disabilities.* Paper presented at the Learning Disabilities Summit: Building a Foundation for the Future, Washington, DC.

Gresham, F. M., & Kendall, G. K. (1987). School consultation research: Methodological critique and future research directions. *School Psychology Review, 16*, 306-316

Groskreutz, M. P., & Higbee, T. S. (2011). Effects of varied levels of treatment integrity on appropriate toy manipulation in children with autism. *Research in Autism Spectrum Disorders, 5,* 1385- 1369. http://dx.doi.0rg/lO.lOl6/j.rasd .2011.01.018

Hawken, L. S., Vincent, C. G., & Schumann, J. (2008). Response to intervention for social behavior: Challenges and opportunities. *Journal of Emotional and Behavioral Disorders*, *16*(4), 213-225.

Heartland (2004). Heartland AEA 11 annual progress report. Retrieved on 10/15/04 from http://www.aea11. k12.ia.us/downloads/2004apr.pdf.

Hilsenroth, M. J., Blagys, M. D., Ackerman, S. J., Bonge, D. R., & Blais, M. A. (2005). Measuring psychodynamic-interpersonal and cognitive-behavioral techniques: Development of the comparative psychotherapy process scale. *Psychotherapy: Theory, Research, Practice, Training*, *42*, 340 –356.

Holland, R. P. (1980). Analysis of the decision making processes in special education. *Exceptional Children, 46, 551-554.*

House, J. E., & Mclnerney, W. F. (1996). The school assistance center: An alternative model for the delivery of school psychological services. *School Psychology International, 17,* 115-124.

Hylander, I. (2012). Conceptual change through consultee centered consultation: A theoretical model. *Consulting Psychology Journal: Practice and Research, 64*, 29 – 45.

Hyman, I., Carroll, R., Duffy, J., Manni, J. & Winikur, D. (1973). Patterns of interpersonal conflict resolution on school child study teams. *Journal of School* Psychology, *II,* 187-195.

Ikeda, M. J., Tilly, D. W., Stumme, J.,Volmer, L., & Allison, R. (1996). Agency-wide implementation of problem- solving consultation: Foundations, current implementation, and future directions. *School Psychology Quarterly, 11*, 228-243.

Individuals with Disabilities Education Improvement Act of 2004, Pub. L. 108–446, 118 Stat. 2647.

Institute of Medicine.(1994). *Reducing risks for mental disorders: Frontiers for preventative intervention research* .Washington, DC: National Academy Press.

Hartman, W. T., & Fay, T. A. (1996). Cost-effectiveness of instructional support teams in Pennsylvania. *Journal of Education Finance, 21*, 555–580.

Hickman, C. W., Greenwood, G., & Miller, M. D. (1995). High school parent involvement: Relationships with achievement, grade level, SES, and gender. *Journal of Research & Development in Education*, *28*, 125-134.

Ikeda, M. J., Tilly, W. D., Ill, Stumme, J., Volmer, L., & Allison, R. (1996). Agency wide implementation of problem-solving consultation: Foundations, current implementation, and future directions. *School Psychology Quarterly, 11,* 228—243.

Izzo, C. V., Weissberg, R. P., Kasprow, W. J., & Fendrich, M. (1999). A longitudinal assessment of teacher perceptions of parent involvement in children's education and school performance. *American Journal of Community Psychology*, *27*(6), 817-839.

Jeynes, W. H. (2005). Effects of parental involvement and family structure on the academic achievement of adolescents. *Marriage & Family Review*, *37*(3), 99-116.

Jones, (n.d). Reduction of referrals to special education through response to interventions and differentiated instruction.

Kabler, M., & Genshaft, J. (1983). Structuring decision-making in multidisciplinary teams. *School Psychology Review, 23(2),* 150-159.

Kaderavek, J. N., & Justice, L. M. (2010). Fidelity: An essential component of evidence-based practice in speech-language pathology. *American Journal of Speech Language Pathology*, *19*, 369-379. http://dx.doi.org /10.1044/1058-0360(2010/09-0097)

Kapliwski, K. P. (1996). A national survey of major issues affecting the role and function of the school psychologist. *Dissertation Abstracts International: Section B: The Sciences & Engineering, 57*(6-B), 4069.

Kavale, K. A., & Forness, S. R. (2000). Policy decisions in special education: the role of metaanalysis. In R. Gersten, E. P. Schiller, & S. Vaughn (Eds.), *Contemporary Special Education Research: Syntheses of Knowledge Base on Critical Instructional Issues* (pp. 281– 326). Mahwah, NJ: Lawrence Erlbaum Associates.

Keith, T. Z. (1991). Parent involvement and achievement in high school. In S. B. Silvern (Ed.), *Advances in Reading/Language Research: A Research Annual, Vol. 5. Literacy Through Family, Community, And School Interaction* (pp. 125-141). Elsevier Science/JAI Press.

Keith, T. Z., Keith, P. B., Quirk, K. J., Sperduto, J., Santillo, S., & Killings, S. (1998). Longitudinal effects of parent involvement on high school grades: Similarities and differences across gender and ethnic groups. *Journal of School Psychology*, *36*(3), 335-363.

Knotek, S. E., Kaniuka, M., & Ellingsen, K. (2008). Mentalhealth consultation and consultee-centered approaches. In W. Erchul & S. Sheridan (Eds.), *Handbook of research in school consultation: Empirical foundations for the field* (pp. 127–145). New York: Erlbaum.

Knotek, S. E., Rosenfield, S., Gravois, T. A., & Babinski, L. (2003). The process of orderly reflection and conceptual change during instructional consultation. *Journal of Educational and Psychological Consultation*, *14*, 303–328.

Kovaleski, J. F. (2002). Best practices in operating pre-referral intervention teams. In A. Thomas, & J. Grimes (Eds.), *Best practices in school psychology* (pp. 645−656). 4th ed. Bethesda, MD: National Association of School Psychologists.

Kovaleski, J. F., Gickling, E. E., Morrow, H., & Swank, P. (1999). High versus low implementation of instructional support teams: A case for maintaining program fidelity. *Remedial and Special Education, 20,* 170–183.

Kovaleski, J. F., Tucker, J. A., & Duffy, D. J. (1995). School reform through instructional support: The Pennsylvania Initiative (Part I). *Communique, 23*(8) (insert).

Kovaleski, J. F., Tucker, J. A., & Stevens, L. (1996). Bridging special and regular education: The Pennsylvania initiative. *Educational Leadership, 53,* 44–47.

Kratochwill, T. R., (1988). *Preparation of school psychologists to serve as consultants for teachers of emotionally disturbed children.* Washington, DC: United States Department of Education, Office of Special Education and Rehabilitative Services.

Kratochwill, T. R., & Van Someren, K. R. (1995). Barriers to Treatment Success in Behavioral Consultation: Current Limitations and Future Directions. *Journal of Educational & Psychological Consultation*, *6*(2), 125.

Lee-Tarver, A. (2006). A survey of teachers' perceptions of the function and purpose of student support teams. *Education*, *126* (3), 525-533.

Leton, D. A., (1964). School psychology: its purpose and direction. *Psychology in Schools*, *1*, 187-190.

Macmann, G. M., Barnett, D. W., Allen, S. J., Bramlett, R. K., Hall, J. D., & Ehrhardt, K. E. (1996). Problem-solving and intervention design: Guidelines for the evaluation of technical adequacy. *School Psychology Quarterly*, *11*, 137-148.

Marston, D., Muyskens, P., Lau, M., & Canter, A. (2003). Problem-solving model for decision making with high-incidence disabilities: The Minneapolis experience. *Learning Disabilities Research & Practice*, *18*(3), 187-200.

McDaniel, L. J., & Ahr, E, (1965). The school psychologist as a resource person initiating and conducting inservice teacher education. *Psychology in Schools*. *2*, 220-224.

McGrew, J. H., Bond, G. R., Dietzen, L., & Salyers, M. (1994). Measuring the fidelity of implementation of a mental health program model. *Journal of Consulting and Clinical Psychology*, *62*, 670 – 678.

McNamara, K. (1998) Adoption of intervention-based assessment for special education: Trends in case management variables. *School Psychology International, 19,* 251-266.

McNamara, K. M., & Hollinger, C. L. (1997). Intervention-based assessment: Rates of evaluation and eligibility for specific learning disability classification. *Psychological Reports, 81,* 620-622.

McPherson, R. B., Crowson, R. L., & Pitner, N. J. (1986). *Managing uncertainty: Administrative theory and practice in education.* Columbus, OH: Merril

Medley, D. M., & Coker, H. (1987). How valid are principals' judgments of teacher effectiveness? *Phi Delta Kappan, 69,* 138-140.

Merrell, K.W., Ervin, R. A., & Gimpel, G.A. (2006). *School psychology for the 21st century. Foundations and practices*. New York: Guilford Press.

Meyer, A., Miller, S., & Herman, M. (1993). Balancing the priorities of evaluation with the priorities of the setting: A focus on positive youth development programs in school settings. *Journal of Primary Prevention*, *14*, 95-113.

Minneapolis Public Schools (2001). *Problem-Solving Model: Introduction for all staff.* Minneapolis, MN: Author.

Moncher, F.J.,& Prinz, R.J. (1991).Treatment fidelity in outcome studies. *Clinical Psychology Review*, *11*, 247–266.

Moore, K. J., Fifield, M. B., Spira, D. A., & Scarlato, M. (1989). Child study team decision making in special education improving the process. *Remedial and Special Education*, *10*(4), 50-58.

Nellis, L. M. (2012). Maximizing the effectiveness of building teams in response to intervention implementation. *Psychology in The Schools*, *49*(3), 245-256.

Nelson, J. R., Smith, D. J., Taylor, L., Dodd, J. M., & Reavis, K. (1991). Pre-referral intervention: A review of the research. *Education and Treatment of Children, 14,* 243 253.

Noell, G. H. (2008). *Research examining the relationships among consultation process, treatment integrity, and outcomes*. In W. P. Erchul & S. M. Sheridan (Eds.), Handbook of Research in Consultation (pp. 323–341). New York: Taylor & Francis/Routledge.

Noell, G. H., Duhon, G. J., Gatti, S. L., & Connell, J. E. (2002). Consultation, follow-up, and implementation of behavior management interventions in general education. *School Psychology Review*, *31*(2), 217.

Noell, G. H., Gresham, F. M., & Gansle, K. A. (2002). Does treatment integrity matter? A preliminary investigation of instructional implementation and mathematics performance. *Journal of Behavioral Education, 11*, 51-67. http://dx.doi.org/10.1023/A:1014385321849

Noell, G. H., Witt, J. C., Gilbertson, D. N., Ranier, D. D., & Freeland, J. T. (1997). Increasing teacher intervention implementation in general education settings through consultation and performance feedback. *School Psychology Quarterly*, *12*(1), 77.

Noell, G. H., Witt, J. C., Slider, N. J., Connell, J. E., Gatti, S. L., Williams, K. L., & ... Duhon, G. J. (2005). Treatment Implementation Following Behavioral Consultation in Schools: A Comparison of Three Follow-up Strategies. *School Psychology Review*, *34*(1), 87-106.

Palenchar, L., Brown, D., & Jennings, L. (2006). *West Virginia response to intervention: an*

implementation and technical assistance guide for districts and schools. Charleston, WV: West Virginia Board of Education.

Pellecchia, M., Connell, J. E., Eisenhart, D., Kane, M., Schoener, C., Turkel, K., & ... Mandell, D. S. (2011). We're all in this together now: Group performance feedback to increase classroom team data collection. *Journal of School Psychology*, *49,* 411-431. doi:10.1016/j.jsp.2011.04.003

Pennsylvania Department of Education, Bureau of Special Education, Instructional Support Team (1994). *Instructional Support*. (Available from Instructional Support Training Materials c/o Dr. Joseph Kovaleski, Intermediate Unit 13, 1110 Enterprise RD, E. Petersburg, PA 17520).

Perepletchikova, F., & Kazdin, A. E. (2005). Treatment integrity and therapeutic change: Issues and research recommendations. *Clinical Psychology: Science and Practice*, *12*, 365–383.

Pfieffer, S. I. (1980). The school-based interprofessional team: Recurring problems and some possible solutions. *Journal of School Psychology, 18(4), 388-394.*

Phillips, B., & McCullough, L. (1990). Consultation-based programming: Instituting the collaborative ethic in schools. *Exceptional Children, 56,* 291-304.

Pryzwansky, W. B. (1981). Mandated team participation: Implications for psychologists working in the schools. *Psychology in the Schools, 18,* 389-393.

Pugach, M. C., & Johnson, L. J. (1989). Prereferral interventions: Progress, problems, and challenges. *Exceptional Children, 56,* 217-226.

Ravitch, D. (2000). *Left back: A century of failed school reforms*. New York, NY: Simon and Schuster.

Reschly, D. J., & Starkweather, A. R. (1997). *Evaluation of an alternative special education assessment and classification program in the Minneapolis Public Schools.* Ames, IA: Iowa State University.

Reschly, D. J., & Ysseldyke, J. E. (2002). Paradigm shift: The past is not the future. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology* (4th ed., pp. 3-20). Bethesda, MD: National Association of School Psychologists.

Resnicow, K., Davis, M., Smith, M., Lazarus-Yaroch, A., Baranowski, T., Baranowskii, J., et al. (1998). How best to measure implementation of school health curricula: A comparison of three measures. *Health Education Research*, *13*, 239 –250.

Riner, P. S. (1991). Are principals valid judges of teacher effectiveness? A study of the criterion-related validity of a high inference teacher rating instrument. *Journal of Research and Development in Education, 24,* 20-29.

Rosenfield, S. (1992). Developing school-based consultation teams: A design for organizational change. *School Psychology Quarterly*, *7*(1), 27-46. doi:10.1037/h0088248

Rosenfield, S. (2008). Best practice in instructional consultation and instructional consultation teams. *Best practices in school psychology V*, *5*, 1645-1660.

Rosenfield, S. A.,& Gravois, T. A. (1996). *Instructional consultation teams: Collaborating for Change*. New York: Guilford.

Rosenfield, S., Gravois, T., & Silva (2014). *Bringing instructional consultation to scale: Research and development of IC and IC teams*. In W. P. Erchul & S. M. Sheridan (Eds.), Handbook of research in school consultation (2nd ed., pp. 248–275). New York, NY: Taylor & Francis.

Ross, R. P. (1995). *Best practices in implementing intervention assistance teams*. In A. Thomas, & J. Grimes (Eds.), Best practices in school psychology (4th ed.) (pp. 227– 237). Silver Spring, MD: National Association of School Psychologists.

Ruby, S. F., Crosby-Cooper, T., & Vanderwood, M. J. (2011). Fidelity of problem solving in everyday practice: Typical training may miss the mark. *Journal of Educational & Psychological Consultation, 21*(3), 233-258.

Safran, S. P., & Safran, J. S. (1996). Intervention assistance programs and prereferral teams: directions for the twenty-first century. *Remedial Special Education, 17*, 363–369.

Saeki, E., Jimerson, S. R., Earhart, J., Hart, S. R., Renshaw, T., Singh, R. D., & Stewart, K. (2011). Response to intervention (RtI) in the social, emotional, and behavioral domains: Current challenges and emerging possibilities. *Contemporary School Psychology: Formerly The California School Psychologist"*, *15*(1), 43-52.

Sanetti, L. M. H., Chafouleas, S. M., Fallon, L. M., & Jaffrey, R. (2014). Increasing teachers' adherence to a classwide intervention through performance feedback provided by a school-based consultant: A case study. *Journal of Educational and Psychological Consultation*, *24*(3), 239-260.

Sanetti, L. M., & Kratochwill, T. R. (2009). Introduction to the special series: Toward developing a science of treatment integrity: Implications for research, practice, and policy. *School Psychology Review*, *38*, 445– 459.

Sass, D. A., Twohig, M. P., & Davies, W. H. (2004). Defining the independent variables and ensuring treatment integrity: A comparison across journals of different theoretical orientations. *Behaviour Therapist*, *27*, 172–174.

Schmidt, K. M., & Pena, F, (1964). The psychologist as a consultant in schools. *Psychology in the Schools*, *1*, 419-425.

Sheridan, S. M., & Colton, D. L. (1994). Conjoint behavioral consultation: A review and case study. *Journal of Educational and Psychological Consultation*, *5*, 211228.

Sheridan, S. M., & Kratochwill, T. R. (1992). Behavioral parent-teacher consultation: Conceptual and research considerations. *Journal of School Psychology*, *30*, 117139.

Sheridan, S. M., Kratochwill, T. R., & Bergan, J. R. (2013). *Conjoint behavioral consultation: A procedural manual*. Springer Science & Business Media.

Sheridan, S. M., Kratochwill, T. R., & Elliott, S. N. (1990). Behavioral consultation with parents and teachers: Delivering treatment for socially withdrawn children at home and school. *School Psychology Review*, *19*, 3352.

Short, R. J., & Talley, R. C. (1996). Effects of teacher assistance teams on special education referrals in elementary schools. *Psychological Reports*, *79*, 1431-1438.

Schulte, A. C., Easton, J. E., & Parker, J. (2009). Advances in treatment integrity research: Multidisciplinary perspectives on the conceptualization, measurement, and enhancement of treatment integrity. *School Psychology Review*, *38*(4), 460.

Stein, M., Berends, M., Fuchs, D., McMaster, K., Saenz, Yen, L.,Compton, D. L. (2008). Scaling up an early reading program: Relationships among teacher support, fidelity of implementation, and student performance across different sites and years. *Education Evaluation and Policy Analysis, 30*, 368-388.

Telzrow, C. F., McNamara, K., & Hollinger, C. L. (2000). Fidelity of problem-solving implementation and relationship to student performance. *School Psychology Review, 29,* 443-461.

Thomas & J. Grimes (Eds.) *Best practices in school psychology* (4th ed., pp. 21—36 Bethesda, MD: National Association of School Psychologists. http://dx.doi.org/10.3102/0162373708322738

Tilly, W. D., III. (2002). Best practices in school psychology as a problem-solving enterprise. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology* (4th ed., pp. 21-36). Bethesda, MD: National Association of School Psychologists.

Tilly, W. D., Clark, J., Atkinson, P. J., & Flugum, K. R. (1992). *Building assistance teams: Interventions and outcomes.* Des Moines, IA: State of Iowa Department of Education.

Truscott, S. D., Cohen, C. E., Sams, D. P., Sanborn, K. J., & Frank, A. J. (2005). The current state(s) of prereferral intervention teams: A report from two national surveys. *Remedial and Special Education*, *26*, 130–140.

Upah, K. R., & Tilly III, W. D. (2002). Best practices in designing, implementing, and evaluating quality interventions. *Best practices in school psychology IV*, *1*, 483-501.

Vaughn, S., & Fuchs, L. S. (2003). Redefining learning disabilities as inadequate response to instruction: The promise and potential problems. *Learning Disabilities Research & Practice Special Series: Redefining LD as Inadequate Response to Instruction, 18,* 137-146.

Vollmer, T. R., Roane, H. S., Ringdahl, J. E., & Marcus, B. A. (1999). Evaluating treatment challenges with differential reinforcement of alternative behavior. *Journal of Applied Behavior Analysis*, *32*, 9−23.

Whitehurst, G. J. (2002, October). *Evidence-based education*. Paper presented at the Student Achievement and School Accountability Conference. Available online at http://www.ed .gov/nclb/methods/whatworks/eb/edlite-slide001.html.

Whitfield, T. J. (1996). Academic Effectiveness of Allegheny County Middle Schools' Instructional Support Teams.

Wilder, D. A., Atwell, J., & Wine, B. (2006). The effects of varying levels of treatment integrity on child compliance during treatment with a three-step prompting procedure. *Journal of Applied Behavior Analysis*, *39*, 369-373. http://dx.doi .org/10.1901/jaba.2006.144-05

Yoshida, R. K., Fenton, K. S., Maxwell, J. P. & Kaufman, M. J. (1978). Group decision making in the planning team process: Myth or reality? *Journal of School Psychology, 16*, 237-244.

Zirkel, P. A., & Thomas, L. B. (2010). State laws and guidelines for implementing RTI. *Teaching Exceptional Children*, *43*(1), 60-73.

Appendix A: Procedural Fidelity Checklist

School: A B C Code: ___

Date: _____

Please rate each item "strongly agree", "agree", disagree", or "strongly disagree" in terms of the case/meeting that just occurred.

Item	Strongly Agree	Agree	Disagree	Strongly Disagree
1. A request for assistance form is used to identify the problem and provide data before the meeting.				
2. The request for assistance form is brief, but provides adequate information about the problem.				
3. Documentation of psychologist meeting with the teacher prior to problem-solving team meeting.				
4. Baseline data are collected and presented.				
5. Data are objective and empirical.				
6. Selected interventions are research based.				
7. Selected intervention is directly linked to assessment data.				
8. Start with interventions that have a high probability of success.				
9. Core team member assists with implementation of intervention.				
10. Team develops specific intervention plan with the teacher.				
11. Parent information is discussed.				
12. Data collection is developed to monitor effectiveness and progress.				
13. Monitoring data are objective, empirical, and directly linked to the problem.				
14. A plan is developed to assess implementation fidelity of the intervention.				
15. Follow-up consultation is scheduled between the teacher and the psychologist.				
16. Follow-up CST meeting is scheduled.				
17. A case documentation form is used to track the team's activities.				
18. The building principal or administrator designee is present at the meeting.				
19. Child Study Team members have designated roles (e.g., note taker, discussion facilitator).				

**This survey has been adapted from:

Burns, M.K.,Wiley, H. I.,&Viglietta, E. (2008). Best practices in facilitating problem-solving teams. In A. Thomas,& J. Grimes (Eds.), Best practices in school psychology (pp. 1633−1644)., 5th ed. Bethesda, MD: National

Appendix B: Procedural Fidelity Checklist (Researcher)

School: A B C Code: ___

Date: _____

Item	Strongly Agree	Agree	Disagree	Strongly Disagree
1. A request for assistance form is used to identify the problem and provide data before the meeting.				
2. The request for assistance form is brief, but provides adequate information about the problem.				
3. Documentation of psychologist meeting with the teacher prior to problem-solving team meeting.				
4. Baseline data are collected and presented.				
5. Data are objective and empirical.				
6. Selected interventions are research based.				
7. Selected intervention is directly linked to assessment data.				
8. Start with interventions that have a high probability of success.				
9. Core team member assists with implementation of intervention.				
10. Team develops specific intervention plan with the teacher.				
11. Parent information is discussed.				
12. Data collection is developed to monitor effectiveness and progress.				
13. Monitoring data are objective, empirical, and directly linked to the problem.				
14. A plan is developed to assess implementation fidelity of the intervention.				
15. Follow-up consultation is scheduled between the teacher and the psychologist.				
16. Follow-up CST meeting is scheduled.				
17. A case documentation form is used to track the team's activities.				
18. The building principal or administrator designee is present at the meeting.				
19. Child Study Team members have designated roles (e.g., note taker, discussion facilitator).				

Length of meeting _____ Parent present (Y/N) ___ Grade level of student ____ Gender ____

Concern- academic, behavioral, both, neither (i.e. speech, gifted, fine/gross motor) _____

**This survey has been adapted from:

Burns, M.K.,Wiley, H. I.,&Viglietta, E. (2008). Best practices in facilitating problem-solving teams. In A. Thomas,& J. Grimes (Eds.), Best practices in school psychology (pp. 1633−1644)., 5th ed. Bethesda, MD: National

Appendix C: Operational Definitions of the Items from the Procedural Fidelity Checklist

Item	Operational definition
1. A request for assistance form (RAF) is used to identify the problem and provide data before the meeting.	Members came to the meeting with the RAF completed.
2. The request for assistance form is brief, but provides adequate information about the problem.	The RAF was 1 or 2 pages and included baseline data.
3. Documentation of psychologist meeting with the teacher prior to problem-solving team meeting.	Data of the meeting was included in CST paperwork.
4. Baseline data are collected and presented.	CST paperwork included data collected prior to the meeting.
5. Data are objective and empirical.	Data were quantitative and came from an observable source.
6. Selected interventions are research based.	Interventions included at least two of the five components (correctly targeted, appropriate level of challenge, explicit instruction, high opportunities to respond, and immediate feedback) identified by Burns, VanDerHeyden, & Boice (2008) as evidence for research based intervention.
7. Selected intervention is directly linked to assessment data.	Team referred to data to determine intervention.
8. Start with interventions that have a high probability of success.	Intervention was implemented with existing resources.
9. Core team member assist with implementation of intervention.	Team member volunteered to assist teacher with intervention.
10. Team develops specific intervention plan with the teacher.	Steps for implementing intervention were explicitly stated or written.
11. Parent information is discussed.	Information provided by parent(s) was discussed by team members.
12. Data collection is developed to monitor effectiveness and progress.	Progress monitoring plan was orally stated or written.
13. Monitoring data are objective, empirical, and directly linked to the problem.	Data was observable, quantitative, and similar to those used to analyze the problem.
14. A plan is developed to assess implementation fidelity of the intervention.	A plan was developed to assess how well the intervention was implemented was orally stated.
15. Follow-up consultation is scheduled between the teacher and the psychologist.	Meeting was scheduled between referring teacher and psychologist.
16. Follow-up CST meeting is scheduled.	Additional CST meeting regarding the same student wads scheduled.
17. A case documentation form is used to track the team's activities.	A form was completed that included the intervention plan.
18. The building principal or administrator designee is present at the meeting.	The principal attended the meeting or one member reported to the principal.
19. Child Study Team members have designated roles (e.g., note taker, discussion facilitator).	Team members verbally articulated a role when asked.

**These definitions have been adapted from:

Burns, M. K., Peters, R., & Noell, G. H. (2008). Using performance feedback to enhance implementation fidelity of the problem-solving team process. *Journal Of School Psychology*, *46*537-550. doi:10.1016/j.jsp.2008.04.001

Appendix D: Letter of Support

December 11, 2017

Catalina Ottinger-Ovens
School Psychologist; Psy.D. Candidate
2979 Pennview Ave.
Broomall, PA 19008

Dear Catalina:

It is my pleasure that I write this letter in support of your project, "Examining Procedural Fidelity in School-Based Problem-Solving Teams within Elementary Schools". It is my understanding that the project will take place at the Marple Newtown School District over approximately a two-month period. The project will involve Child Study Team core team members in three elementary schools (Loomis, Culbertson, and Russell) by utilizing a procedural fidelity checklist. Team members will be briefed on the purpose of the study at the first meeting. Subsequent meetings will include researcher observations and completion of similarly formatted procedural fidelity checklists. These observations will not interrupt classroom instruction and results will be used to improve program implementation of the Child Study Team.

With the need to develop more cohesive consultative practices, this study will benefit the school district by examining the procedural fidelity of Child Study Team meetings across elementary schools to determine if there are similarities and differences between procedures, and to examine which factors may attribute to higher fidelity, and overall procedures within Child Study Team meetings. I look forward to the results of the study and to working collaboratively with the PCOM faculty.

Regards,

Gerald Rodichok, Ph.D.

Director of Pupil Services

PA Licensed Psychologist

Certified School Psychologist