Teacher Experiences of Prereferral Intervention Teams from a Self-Determination

Perspective

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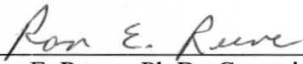University of Virginia

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APPROVAL OF THE DISSERTATION

This dissertation, "Teacher Experiences of Prereferral Intervention Teams from a Self-Determination Perspective," has been approved by the Graduate Faculty of the Curry School of Education in partial fulfillment of the requirements for the degree of Doctor of Philosophy.
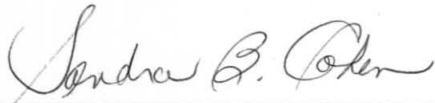
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Abstract

Prereferral intervention teams (PITs) have been shown to successfully address student difficulties. Teacher perceptions of the process have garnered less attention. Using self-determination theory (SDT), a records review (Study 1) and a prospective study followed teachers through their PIT experience (Study 2) and examined positive characteristics of the PIT process. Study 1 found that in 117 records, 61% of the teams had high "intervention novelty," whereby team members proposed new or modified interventions; 14% advised teachers to continue using existing interventions or did not propose any interventions. The study found that intervention novelty was linked to "intervention utility" or usefulness. Additionally, when taking into account intervention novelty, PIT-proposed interventions addressing non-academic referral goals were more likely to be useful than those addressing academic referral goals. Study 2 followed 33 teachers through the team process. The study found that teachers on teams with high levels of intervention novelty and teachers who experienced their teams as supportive and caring were more likely to have students who made progress on referral goals. Implications for schools and PITs are discussed.

Acknowledgments

The completion of this dissertation was facilitated by the support and guidance of many people. Huge thanks go to Anne Gregory, my committee chair and research advisor. Anne epitomizes the role of advisor. Throughout this process, she was authentic and reassuring, nudged me gently but convincingly, helped me to think as a researcher (and more succinctly), and exuded a passion for the work. Anne infused me with a new appreciation for research. Without Anne, this dissertation would still be a blastula. I owe her tremendously. I would also like to thank Ron Reeve, who prepared me for the monstrous dissertation task through his advice and guidance on my pre-dissertation. More importantly, he's been a steady support for me throughout graduate school and as caring a man as one could hope for in a primary advisor. Additionally, I would like to thank my other committee members. Thank you, Sandi Cohen, for helping me to put myself in the shoes of our teachers and for your encouraging words through the home stretch. And thank you, Tim Konold, for your humor and ready availability in helping me with my statistical analyses. I could not have asked for a warmer and more supportive committee. I would be remiss if I failed to thank my amazing lab-mates, Ann Lhospital and Wei-Bing Chen. In addition to being absolutely wonderful people and amazing co-workers, they brought enthusiasm and thoughtfulness to this project that was invaluable. Gratitude also goes out to Aisha Thompson, Megan Nelson, Jenna Smith, and Krystal Studivant for their help in collecting data and interviewing teachers.

I owe thanks to my brother, Brian, and sister, Lisa, for helping me to not belabor this dissertation excessively. In the past year, both have dipped into their music libraries to provide me with a soundtrack for this work. Their musical contribution is secondary to

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their wit and support, both of which have kept me upbeat during this process. I would not be here writing this now were it not for my amazing parents. My drive to be around and work with children is rooted in how I myself was raised. I have long been aware of how lucky I am to have had two parents who believed so strongly in their children, and I am reminded of this every day that I work with children who are not as fortunate. I was not an easy baby nor was I an easy teenager, so thank you, Mom and Dad, for putting up with me. If my writing makes sense, my spelling is correct, and my grammar is sound, it is because of them. I also owe a special thanks to my father; I only realized in the last few years how his love for his work so impressed upon me that I too could find a profession that would fulfill me.

As in movie credits, I have listed the marquee player in my life last. My wife, Jenny Weinberg, inspired me to enter this field and to work with children with special needs and mental illness. Thanks to her, I get to spend time every day with my peer group (i.e., children) and do work that I feel is meaningful. If I become half as competent a psychologist as she is a teacher, I'll be doing worlds of good for the kids and families with whom I work. Jenny is my rock and soon to be the mother of our first child. Thank you, Jenny, for making me laugh, grounding me, believing in me, and loving me. I know it has been a long five years. Thank you for being patient and for taking over the onerous job that my parents handed over to you—putting up with me.

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CHAPTER I

STATEMENT OF THE PROBLEM

General and Special Education Integration and Prereferral Intervention

Recent legislature and school reform efforts such as the Individuals with

Disabilities Education Act (IDEA; specified in Public Law 94-142, 1997; reauthorized as

the Individuals with Disabilities Education Improvement Act in P.L. 108-446, 2004) and

the President's Commission on Excellence in Special Education (2002) emphasize the

importance of educating children in an environment that is only as restrictive as the

child's learning needs require. To that end, IDEA mandated that schools make every

effort to educate *all* students in general education. Additionally, there are financial

imperatives for educating children outside of the special education system. Special

education services are more costly than general education, with costs per student nearly

double that ($12,000 per special education student compared to $6,500 for a general

education student) of students served in the general education classroom (Chambers,

Parrish, & Harr, 2002).

IDEA posited that preventive interventions—behavioral or instructional supports

implemented in general education classrooms—carried out prior to special education

referral could bridge general and special education and "reduce the need to label children

as disabled in order to address their learning needs" (1997, p. 6). These interventions,

commonly known as prereferral interventions, hold the potential to reduce

overidentification of students for special education evaluations, prevent erroneous special

education placements, help children avoid the stigma associated with receiving special

education services, teach children new skills, and improve children's academic and social

functioning (e.g., Burns, 1999; Burns & Symington, 2002; Fuchs, Fuchs, & Bahr, 1990;

Kovaleski & Glew, 2005; Marston, Muyskens, Lau, & Canter, 2003; McDougal, Clonan,

& Martens, 2000; McDougal, Nastasi, & Chafouleas, 2005). A majority of states (69 -

72%) mandate prereferral intervention of some type (Buck, Polloway, Smith-Thomas, &

Cook, 2003; Truscott, Cohen, Sam, Sanborn, & Frank, 2005). Employing prereferral

interventions moves away from what has often been referred to as a "wait to fail" model,

which has several disadvantages, including relatively late identification for students with

special needs, and the potential for high rates of false negatives (i.e., unidentified

students) who are not provided necessary services or provided services too late (Vaughn

& Fuchs, 2003). By contrast, prereferral interventions are intended to provide immediate

assistance to students experiencing behavioral or academic challenges. These

interventions are seen as a critical component of the Response to Intervention (RTI)

model (Gresham, 2002, 2004; Vaughn & Fuchs, 2003), which is currently advocated as a

state-of-the-art approach for identifying learning disabilities (e.g., Gresham, 2002, 2004;

Vaughn & Fuchs, 2003).

<center>Changing Roles for Teachers</center>

The onus for implementing prereferral interventions falls squarely on the

shoulders of general education teachers, many of whom do not have adequate training in

individualized academic or behavioral interventions and/or do not perceive themselves as

prepared to meet these added demands (Schumm & Vaughn, 1992; Schumm, Vaughn, Gordon, & Rothlein, 1997; Wilson, Gutkin, Hagen, & Oats, 1998). This is an additional burden on an already overburdened workforce, many of whom quit teaching early in their careers. In fact, teacher attrition has been a significant concern for many years. Research indicates that approximately one-quarter to one-half of all beginning teachers leave the field within four to five years (Benner, 2000; Darling-Hammond & Schlan, 1996). Following the 2003-2004 school year, 8% of public school teachers quit teaching to work outside the field of education (U.S. Department of Education, 2004). Of this group, over 63% felt that their workload was now more manageable, they now had more autonomy or control over their work, and they were better able to balance their personal and work life.

Teachers clearly need support to maintain their well-being and meet the needs of an increasingly diverse student population in the general education classroom. One popular method for doing so is through consultation with other teachers and support staff via a multidisciplinary team approach such as a prereferral intervention team. Conceptually, these prereferral intervention teams (PITs) work collaboratively with the classroom teacher to clarify the student's referral problem(s), generate hypotheses about his/her behaviors (e.g., by considering child, classroom environment, and maintaining variables), and design, implement, and evaluate one or more intervention plans (Buck, Polloway, Smith-Thomas, & Cook, 2003; Chalfant & Pysh, 1989; Fuchs, Fuchs, & Bahr, 1990; Kovaleski & Glew, 2005; Pugach & Johnson, 1989).

Although the intervention ideas are team-developed, the teacher ultimately owns the "problem" and is generally responsible for implementing the interventions in the classroom (Pugach & Johnson, 1989). Accordingly, it is critical that we understand

teachers' experiences with these teams; however, little research, to date, has examined teachers' perspectives (Lane, Mahdavi, & Borthwick-Duffy, 2003; Papalia-Berardi & Hall, 2007; Simpson, Ormsbee, & Myles, 1997; Slonski-Fowler & Truscott, 2004). Moreover, no studies, to our knowledge, have employed a needs-based model such as self-determination theory (SDT; Deci, 1980; Deci & Ryan, 1985, 2000; Ryan & Deci, 2002) to assess teachers' motivation to participate in prereferral intervention team processes or what they gain from participating in such activities. This is a striking gap in the literature, particularly because "it is [teachers'] knowledge and behaviors that will determine the success or failure of educational and psychological interventions" carried out in the classroom (Wilson et al., 1998, p. 46).

Given the added demands placed on today's teachers, it is of the utmost importance that we improve our understanding of what teachers need to meet the awesome task of educating an increasingly diverse student population. Prereferral intervention teams represent a potentially powerful tool for both supporting teachers and strengthening their capacity to address the needs of today's students. However, to date, there is a paucity of theory-driven research on whether and how teams achieve these goals. Specifically, few studies have examined what motivates teachers to use prereferral intervention teams and whether their needs are met via this team approach. Using the SDT model as a guiding framework, the present study contributes to the growing body of literature on teachers' experiences on prereferral intervention teams by exploring teacher satisfaction of the needs for competence, autonomy, and relatedness via their participation in the team process.

CHAPTER II

REVIEW OF RELEVANT LITERATURE

Prereferral Intervention Teams

Since their inception in the 1980s, prereferral intervention teams have grown in

prominence (Buck et al., 2003; Carter & Sugai, 1989; Safran & Safran, 1996; Truscott et

al., 2005). In addition to "prereferral intervention team" (PIT; Graden, Casey, &

Christenson, 1985; Pugach & Johnson, 1989), these teams go by a variety of names,

including Teacher Assistance Teams (TATs; Chalfant & Pysh, 1989), Mainstream

Assistance Teams (MATs; Fuchs et al., 1990), Instructional Support Teams (Kovaleski &

Glew, 2005), Intervention Assistance Teams (IATs; Whitten & Dieker, 1995), Student

Support Teams (SSTs; Logan, Hansen, Nieminen, & Wright, 2001), School-Based

Intervention Teams (SBITs; McDougal et al., 2000), and Behavior Consultation Teams

(BCTs; McDougal et al., 2005). Although their names vary, most teams[1] share similar

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[1] For consistency purposes and ease of reading, the term "prereferral intervention team"

(PIT) will hereafter be used as the generic label for these teams. Although we share

previous authors' (e.g., Kovaleski, 2002) concerns with the term and its implication that a

special education referral is inevitable, we feel it aptly captures the teams' emphasis on

providing students with assistance in a general education setting, prior to any formal

referral for testing.

functions, compositions, roles, and processes. These characteristics of the teams are described further below.

Team Function and Composition

Prereferral intervention teams serve as a problem-solving forum for classroom teachers to assist them in modifying instruction or classroom management for students experiencing academic or behavioral difficulties (Burns & Symington, 2002; Fuchs et al., 1990; Flugum & Reschly, 1994; McDougal et al., 2000, 2005; Welch, Brownell, & Sheridan, 1999). Effective teams have the potential to produce student, teacher, and systems-level benefits (Sindelar, Griffin, Smith, & Watanabe, 1992). With regard to students, teams have a preventive intent: they aim to prevent the need for special education services by systematically identifying and remediating academic and behavioral challenges in the general education classroom (Fuchs et al., 1996; Welch, Brownell, & Sheridan, 1999). PITs are also designed to provide teachers with collegial support and empower them by increasing their problem-solving confidence and skills, ultimately strengthening their capacity to intervene effectively with a greater diversity of children (Chalfant & Pysh, 1989; Fuchs et al., 1996; Kovaleski & Glew, 2005; Pugach & Johnson, 1989, 1996; Zins & Erchul, 2002). Implicit in this goal is the notion that teachers equipped with an enhanced arsenal of intervention strategies will subsequently have a reduced need for team assistance (Zimmerman, 1995). If these student- and teacher-related goals are met, school-wide improvements are possible, including a reduction in inappropriate special education referrals and placements, increased legitimacy of those referrals that are initiated, and a reduction in the disproportionate

representation of African Americans in special education (e.g., Burns & Symington, 2002; Fuchs et al., 1990, 1996; Marston et al., 2003).

With the exception of TATs (Chaflant & Pysh, 1989), which are comprised of only classroom teachers, PITs are typically multidisciplinary in nature (Kovaleski, 2002; Truscott et al., 2005). Most PITs include the referring teacher and specialists (e.g., school psychologists, special education teachers, guidance counselors) but may also include administrators and parents as well (Carter & Sugai, 1989; Truscott et al., 2005; Welch et al., 1999). In theory, the diverse team make-up allows for multiple perspectives, fosters idea generation, and brings unique expertise together to provide a better understanding of the child and to aid in remediating his/her difficulties (Etscheidt & Knesting, 2007).

Teachers' Roles

PITs use an indirect service delivery model whereby the person requesting help (typically the general education teacher) receives support and intervention suggestions from the team but is generally the one responsible for implementing the proposed interventions to help the student (Pugach & Johnson, 1989; Welch et al., 1999). Accordingly, PITs are often characterized as being expert models of consultation, in which classroom teachers are dependent on specialists for appropriate problem solutions (Pugach & Johnson, 1989). Pugach and Johnson (1989, 2002), among others, had concerns with this approach, positing that the expert model might deter genuine collaboration and sharing by teachers. Accordingly, they championed a collaborative consultation model, which emphasizes the interpersonal nature of the consultation process and the importance of privileging general education teachers' knowledge. Today,

a hybrid of the two approaches appears to be the norm (Fuchs, Mock, Morgan, & Young, 2003).

Team Problem-Solving Model

PITs employ a problem-solving model, which typically involves the following steps: 1) problem identification, 2) problem analysis, which includes identifying salient instructional and student variables, 3) plan/intervention development, 4) intervention implementation, 5) progress monitoring, and 6) intervention evaluation (Fuchs et al., 1990a, b; Kovaleski, 2002; Kovaleski, Gickling, Morrow, & Swank, 1999; Marston, Muyskens, Lau, & Canter, 2003; Pugach & Johnson, 2002). The process is intended to be data-driven, with curriculum-based assessment data or behavioral data (with frequency, intensity, or duration estimates) guiding the process (Flugum & Reschly, 1994; Fuchs et al., 1990a; Kovaleski, 2002; McDougal et al., 2005). By design, the sequence proceeds as follows: a teacher requests team assistance because a student is experiencing difficulty in the classroom. He/she collects baseline data and presents the data at the team meeting. The team collaboratively identifies appropriate intervention(s) and develops a plan to address the concern(s). The intervention agents (which generally are the classroom teachers) then monitor and evaluate the success of the plan. The student will either respond positively such that original difficulties are significantly reduced or successfully eliminated and there is no need for further action. If the concerns persist, the process may become iterative, with the team re-evaluating the problem and potentially developing new plans. After a persistent lack of progress, the teacher and team may pursue a formal referral for special education services.

Prereferral Intervention Teams in Practice

There is a growing body of research attesting to PITs' potential effectiveness in bringing about student- and teacher-level change in schools (Burns & Symington, 2002; Chalfant & Pysch, 1989; Fuchs et al., 1990a, b; Graden et al., 1985; Kovaleski & Glew, 2005; Marston et al., 2003; McDougal et al., 2000, 2005; Pugach & Johnson, 1989; Sindelar et al., 1992). However, the findings are not unequivocally positive. Several studies cite concerns with the teams' ability to generate novel interventions (Papalia-Berardi & Hall, 2007; Slonski-Fowler & Truscott, 2004; Truscott et al., 2005; Wilson et al., 1998), to accurately identify which children truly warrant special education services (Ormsbee, Myles, & Simpson, 1999; Rock & Zigmond, 2001; Whitten & Dieker, 1995), and to ensure interventions are implemented as planned (Flugum & Reschly, 1994; Kovaleski et al., 1999; Papalia-Berardi & Hall, 2007).

Prereferral Intervention Teams and Student-Level Change

Findings are mixed regarding PITs' impact on student improvement in academic and behavioral domains. A number of studies note academic and behavioral improvements subsequent to PIT involvement and intervention implementation. For instance, a meta-analysis of PITs (Burns & Symington, 2002) revealed a large mean effect size ($d = 1.15$) for student outcomes. Similarly, a handful of studies that used direct evaluations of student learning outcomes (Fuchs & Fuchs, 1989; Fuchs et al., 1990a, b, 1996; Kovaleski et al., 1999; McDougal et al., 2005; Telzrow, McNamara, & Hollinger, 2000) reported gains in targeted areas, including reductions in problem behaviors (e.g., inattention) and increased levels of academic performance (e.g., task completion and task comprehension). When these teams effectively address student needs, they can bring

about systems-level change as well. Teams with university model programs or training have realized consistent reductions in the percentage of students referred for special education (Burns & Symington, 2002; Chalfant & Pysch, 1989; Fuchs et al., 1990a, 1996; Kovaleski et al., 1996; Kovaleski & Glew, 2005; Marston et al., 2003; McDougal et al., 2000).

In contrast to these positive findings, a number of studies raise doubts about how well teams actually address student needs in the general education setting. For example, in their review of TAT research, Papalia-Berardi and Hall (2007) noted that teachers were neutral to slightly dissatisfied with TAT outcomes. Even more disconcerting is Rock and Zigmond's (2001) finding that nearly one-quarter of students undergoing IST intervention were eventually placed in special education within two years after IST involvement. The authors inferred from these results that the process may actually have delayed these children receiving the specially designed instruction and support they needed. There is also evidence that field-based teams realize less consistent positive results than those realized by university-based teams (Burns & Symington, 2002; Fuchs et al., 1996; Safran & Safran, 1996). In fact, the mean effect size for university-based teams was twice as large as that calculated for field-based teams (Burns & Symington, 2002). These authors hypothesized that research funding and support play a large role in the success of the university-based teams.

Although funding and support seem important to team success, researchers frequently cite other salient factors, including the integrity of the team process and the interventions themselves. Kovaleski and colleagues (1999) noted important concerns regarding the quality of the team process (i.e., whether the team followed problem-

solving steps with high fidelity or integrity). Specifically, their results indicated that student academic performance improved *only* when the team process was implemented to a high degree. Other researchers (Flugum & Reschly, 1994; Telzrow et al., 2000) have also noted a relationship between process integrity and treatment outcomes. Intervention fidelity—the degree to which teachers actually implement the team-proposed interventions as planned—may be an equally critical factor. A variety of studies highlight the relationship between intervention integrity and treatment outcomes (e.g., Noell et al., 2005; Sterling-Turner, Watson, & Moore, 2002). Accordingly, even well run teams that propose empirically supported interventions may not realize positive results if intervention integrity is lacking (Telzrow & Beebe, 2002).

Clearly, PITs have the potential to produce meaningful change in students' academic and behavioral performance. However, for a variety of reasons, not all teams succeed in helping students. The studies outlined above suggest the need to clarify the links between the team process and student outcomes.

Prereferral Intervention Teams and Teacher-Level Change

As with the research on student outcomes, there is mixed evidence regarding teachers' experiences with PITs. In a variety of studies using social validity (i.e., acceptability) measures to gauge teachers' general satisfaction with the team process and/or perceptions that it was helpful, teachers have rated their team consultation experience highly (e.g., Chalfant & Pysh, 1989; Fuchs et al., 1990b; McDougal et al., 2000, 2005). Teachers noted satisfaction with team generation of useful strategies, provision of moral support, and improvement in student performance and behavior due to the intervention plans (Chalfant & Pysh, 1989). In a review of TAT research, Papalia-

Berardi and Hall (2007) found similar results regarding teacher satisfaction with the quality of team interpersonal assistance. In contrast, however, teachers were neutral to slightly dissatisfied with the overall TAT process and intervention quality. Teachers expressed concerns in the aforementioned studies as well (Chalfant & Pysh, 1989; Fuchs et al., 1990b; McDougal et al., 2005), including difficulties finding suitable meeting times, the lengthy and the iterative nature of the consultation process, the lack of generalizing of improved academic and social behavior, and the complexity and time burden of proposed interventions.

Of great concern are findings that teachers do not learn or use new strategies through their team involvement. A number of studies indicate that teams often suggest vague, unsubstantive interventions or strategies that referring teachers have already tried (Inman & Tollefson, 1988; Papalia-Berardi & Hall, 2007; Slonski-Fowler & Truscott, 2004; Truscott et al., 2005; Wilson et al., 1998). To this end, Wilson and colleagues (1998) noted that "the preponderance of interventions were initiated prior to teachers contacting the prereferral intervention team for assistance, after which the development of new strategies all but ceased in favor of continuing prior, unsuccessful efforts, and pursuing documentation activities as a prelude to initiating a special education referral" (p. 56). Clearly, these findings are disconcerting, particularly given the underlying assumption that PITs should enhance teacher capacity to address students' needs (Kovaleski & Glew, 2005; Pugach & Johnson, 1989; Zins & Erchul, 2002). In fact, Slonski-Fowler and Truscott (2004) proposed that teams' provision of vague, limited interventions could lead teachers to disengage from PIT processes altogether.

In sum, although there is potential for teachers to gain from PIT participation, the facilitating conditions linked with teacher gains remain unclear. Moreover, PIT studies tend to rely on methodological approaches (e.g., using analog case scenarios, general satisfaction measures, and teacher testimonials) that do not systematically explore teacher gains from participation in the actual process. Research in this area is limited by small samples and a lack of systematic examination of the relationship between teachers' experiences of the process and team success in affecting student level change (e.g., Athanasiou, Geil, Hazel, & Copeland, 2002; Etscheidt & Knesting, 2007; Slonski-Fowler & Truscott, 2004).

Accordingly, Buck and colleagues' comment (2003) is still apt: additional research is needed to "capture the perspective of individuals (e.g., teachers, administrators) responsible for conducting prereferral intervention processes in the schools" (p. 350). Specifically, little is known about whether teachers, in fact, learn new skills and strategies from participating on PITs. Similarly, it is unclear whether teachers perceive that team provision of new intervention ideas increases their capacity to address student needs. Exploring this link would provide a better understanding of teachers' motivation to use PITs. A final area conspicuously lacking in the literature is whether these variables—team provision of new intervention strategies and teacher perceptions of increased capacity—are related to team effectiveness and, ultimately, positive student outcomes. Filling these gaps in our understanding needs to be driven by theory. One promising theoretical framework for doing so is self-determination theory (Deci, 1980; Deci & Ryan, 1985, 2000; Ryan & Deci, 2002).

Self-Determination Theory

SDT asserts that people universally have three primary and innate psychological needs—competence, autonomy, and relatedness—that are essential for psychological growth and well-being (Deci, 1980; Deci & Ryan, 1985, 2000; Ryan & Deci, 2002). Briefly (as these terms will be described at length below), the need for competence involves striving to attain desired outcomes, the need for autonomy entails having choices and experiencing one's actions as being self-initiated, and the need for relatedness encompasses relating to and caring for others, as well as feeling related to or cared for by others (Deci, 1980; Deci & Ryan, 1985, 2000; Ryan & Deci, 2002).

SDT posits that these needs can be examined to understand individuals' goal pursuits (e.g., Deci & Ryan, 2000). More specifically, the theory holds that people move toward or away from activities or social contexts as a function of the degree to which they are able to satisfy their basic psychological needs within those social environments (e.g., Deci & Ryan, 2000; Gagne & Deci, 2005). In other words, according to SDT, the pursuit of the satisfaction of these three needs underlies individuals' motivation. Therefore, SDT research has focused on whether social-contextual factors foster or impede individuals' satisfaction of their needs for competence, autonomy, and relatedness.

SDT research has explored and provided evidence of the link between basic need satisfaction and motivation in both laboratory and applied settings, including schools (e.g., Black & Deci, 2000; Vallerand, Guay, & Fortier, 1997), medical facilities (e.g., Williams, 2002), and work organizations (e.g., Gagne & Deci, 2005). Other studies have examined and demonstrated support for the relationship between satisfaction of these

three needs and individuals' well-being (for a review, see Deci & Ryan, 2000; Ryan & Deci, 2002). In these studies, the researchers defined well-being in a variety of ways, including psychological adjustment (i.e., higher self-esteem and lower levels of anxiety, depression, somatic symptoms, and social dysfunction) and self-perceived vitality and positive affect (Baard, Deci, & Ryan, 2004; Deci et al., 2001; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Sheldon, Ryan, & Reis, 1996). For teachers, well-being might manifest generally in the aforementioned ways as well as more specifically in their feelings of satisfaction with teaching as a profession, with their students/classroom as a whole, and with their individual relationships with students.

Competence

Simply, competence is "a felt sense of confidence and effectance in action" (Ryan & Deci, 2002, p. 7). It is the perception that an individual can bring about change in his/her environment. In his now classic piece on effectance motivation, White (1959) asserted that humans have a primary propensity for competence—to have an effect on the environment—and that individuals engage in competence-motivated behavior for the direct, immediate reward of impacting the environment. He defined competence as an individual's *actual* skill and ability to interact effectively with the environment and an individual's sense of competence as his/her *subjective perception* of his/her ability to effect the environment (White, 1972).

Elliot and colleagues (2002) believe the need for competence subsumes the need for achievement. They proposed that White's (1959) notion of effectance motivation is the initial manifestation of the need for competence, and this need becomes more complex over time, eventually incorporating the need to achieve. Murray (1938) defined

this latter need as the desire "to accomplish something difficult. To master, manipulate, or organize physical objects, human beings, or ideas. To do this as rapidly, and as independently as possible. To overcome obstacles and attain a high standard. To excel one's self….To increase self-regard by the successful exercise of talent" (p. 164). In this definition, Murray asserts that individuals strive to not only affect change in their environment but also to excel in doing so. This position is echoed by Vallerand and Ratelle (2002), who propose that individuals possess a desire to surpass themselves or accomplish something.

According to SDT, individuals strive to be competent, to seek challenges that are optimal for their capacities, and to persistently attempt to grow by maintaining and enhancing those skills (e.g., Ryan & Deci, 2002). This is evident in infancy in early motor play, manipulation of objects, exploration of surroundings, and attempts to communicate with others; through these activities, infants experience pleasure and reward in their ability to impact the world around them (Deci & Ryan, 2000). Later in life, as adults in a work setting, the need for competence is expressed by a desire for professional growth (Baard, 2002).

Autonomy

According to SDT, individuals innately crave autonomy, or volition. They desire to be the initiators of their own behaviors (deCharms, 1968; Deci & Ryan, 2000; Ryan & Deci, 2002;) and, by corollary, seek to avoid being controlled. Autonomy, however, is not equivalent to independence from others. Rather, individuals aim to feel a sense of willingness and choice when acting, whether the actions are independently initiated or stem from requests from significant others (Chirkov, Ryan, Kim, & Kaplan, 2003;

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deCharms, 1968; Deci & Ryan, 2000; Ryan & Deci, 2002) In other words, when actions (e.g., doing chores, undertaking work tasks, completing homework) are influenced by outside sources (e.g., family, bosses, teachers, etc.), individuals want to feel that they had a degree of choice in determining whether or not to act as requested.

The SDT model proposes that individuals will prosper in social environments that foster autonomy (e.g., Deci & Ryan, 2000). In an autonomy-supportive environment, individuals in an authority role (e.g., parents, managers) take the other's (e.g., child's, employee's) perspective, acknowledge the other's feelings and perceptions, provide information and a meaningful rationale for recommendations and/or requests, allow for choice, and minimize the use of pressure and control (Baard, 2002; deCharms, 1968; Deci et al., 1989, 1994; Williams, 2002). Although those in positions of authority influence the actions of their subordinates, SDT postulates that the aforementioned supportive behaviors can enhance individuals' sense of self-initiation, thus promoting satisfaction of the need for autonomy (Deci & Ryan, 2000).

Research examining the link between autonomy-support and outcomes has focused primarily on children (for a review, see Deci & Ryan, 2000), and for good reason, as children are generally in environments (e.g., school, home) where authority figures (e.g., teachers, parents) significantly influence the degree of choice and autonomy children are permitted. Additionally, there is a growing body of research exploring adults' experiences of autonomy-support (e.g., Baard et al., 2004; Cross & Wyman, 2006; Deci et al., 1989, 1994; Williams, 2002). SDT posits that adults need autonomy, particularly in the workplace, where they seek some level of control and choice in their work (Baard, 2002).

Relatedness

Relatedness, the third basic psychological need proposed by the SDT model, refers to the need to connect with and be integral to and accepted by others (Deci & Ryan, 2000; Ryan & Deci, 2002). According to SDT, this longing for connection is distinct from the attainment of a specific or ancillary outcome (e.g., sex) and instead "concerns the psychological sense of being with others in secure communion or unity" (Ryan & Deci, 2002, p.7). The need for relatedness has its roots in attachment theory (Bowlby, 1988), which posits that secure attachment between child and caregiver fosters exploration and growth. Bowlby asserted that individuals have a fundamental need for close connections with others, and SDT makes the same claim. Specifically, SDT holds that motivation is more likely to flourish in contexts characterized by a sense of secure relatedness (Deci & Ryan, 2000; Ryan & Deci, 2002).

Basic Need Satisfaction of Employees in Work Settings

In addition to postulating that humans universally have three intrinsic needs (i.e., for competence, autonomy, and relatedness), SDT posits that 1) conditions that are conducive to the satisfaction of these needs facilitate motivation and 2) basic need satisfaction is related to psychological health and well-being (e.g., Deci & Ryan, 2000; Ryan & Deci, 2002). A variety of field and lab studies lend support to these assertions, (for a comprehensive review, see Deci & Ryan, 2000; Gagne & Deci, 2005; Ryan & Deci, 2002). The research on basic need satisfaction of employees in work settings is particularly relevant to the present study and, accordingly, is detailed below.

Several studies have used SDT to better understand employees' experiences within their work environments (for a review, see Gagne & Deci, 2005). Two studies of

note found relations between basic need satisfaction and important work-related outcome variables, including work performance and participation (Kasser, Davey, & Ryan, 1992) and job attitude and employee self-esteem and well-being (Ilardi, Leone, Kasser, & Ryan, 1993). Other SDT studies in work settings emphasized the importance of managerial autonomy-support. For instance, in their study within a major U.S. corporation, Deci and colleagues (1989) found an association between managerial autonomy-support and employees' global job satisfaction, job satisfaction across several domains (e.g., quality of supervisor feedback, opportunity to make inputs, job security), and level of trust in the corporation. Researchers (Baard et al., 2004; Deci et al., 1989, 2001) found managerial and workplace autonomy-supportiveness to be similarly important in two subsequent studies. Their results indicated a link between autonomy-supportiveness and employees' overall need satisfaction, which in turn was associated with greater employee work engagement (Deci et al., 2001), higher levels of employee work performance (Baard et al., 2004), and employees' psychological adjustment (e.g., self-esteem; levels of anxiety, depressive, and somatic symptoms; and social functioning) on the job (Baard et al., 2004; Deci et al., 2001). Taken together, these studies are promising in their implications for the utility of applying SDT to teachers' experiences in school settings.

Although not a study involving teachers, Cross and Wyman (2006) used SDT concepts in a school setting to explore the job satisfaction of paraprofessionals implementing a school-based prevention program. Given that prereferral intervention teams are conceptualized as prevention programs, designed to address student needs before they become more serious and warrant special education services (Fuchs et al., 1996; Welch, Brownell, & Sheridan, 1999), Cross and Wyman's (2006) findings are

particularly relevant to the present study. They found that implementers' self-reports of satisfaction of the needs for competence, autonomy, and relatedness did, as a composite, predict overall job satisfaction. When separating the implementers into two groups—experienced and beginner—there was variability in the importance of specific psychological needs for job satisfaction. Specifically, the satisfaction of the need for competence appeared to be more salient for beginner implementers. That is, greater satisfaction of competence needs predicted overall job satisfaction for beginner implementers, whereas satisfaction of autonomy and relatedness needs predicted overall job satisfaction for veteran implementers. The authors asserted that this finding reflects the importance for new implementers to experience competence and efficacy early in their careers. The results of this study lend support to the assertion that characteristics of intervention implementers' work settings play an important role in fostering the successful implementation of such programs. These findings have implications for PITs, namely that the team's intervention implementers (which are typically the classroom teachers) are likely to be more satisfied with their roles when their needs for competence, autonomy, and relatedness are supported. Yet to be examined is whether satisfaction of these needs is as salient for classroom teachers participating on PITs, who face the competing demands of implementing individualized prereferral interventions and attending to the needs of a classroom of students.

Given the nature of teachers' work, which is marked by external pressures such as ever-changing legal policies and school initiatives (Nastasi, 2002), a challenging workload, and limited autonomy or control (U.S. Department of Education, 2004), SDT is a promising framework for understanding teachers' experiences. Additionally, the high

rates of teacher attrition (Benner, 2000; Darling-Hammond & Schlan, 1996; U.S. Department of Education, 2004) suggest that we do not fully understand how to promote teachers' well-being, which SDT asserts can be understood as a thwarting of the satisfaction of teachers' basic needs (Deci & Ryan, 2000; Ryan & Deci, 2002). However, despite the utility of SDT for examining teacher perspectives, no studies to date have applied the SDT model to an exploration of teachers' need satisfaction in school. SDT seems particularly useful for gaining insight into teachers' experiences on PITs, as these teams are, by design, intended to meet teachers' basic needs of competence, autonomy, and relatedness by increasing teacher capacity and providing them with collegial support (Chalfant & Pysh, 1989; Fuchs et al., 1996; Kovaleski & Glew, 2005; Pugach & Johnson, 1989, 1996; Zins & Erchul, 2002).

<center>Prereferral Intervention Teams and Self-Determination Theory</center>

Although not previously conceptualized as such, the existing research and suggested best practices for PITs and teacher consultation are clearly consistent with SDT. Factors identified or purported to be critical to team success, including providing teachers with substantive intervention suggestions (Inman & Tollefson, 1988; Slonski-Fowler & Truscott, 2004; Truscott et al., 2005; Wilson et al., 1998), addressing teacher knowledge and skill deficits (Caplan & Caplan, 1993; Kampwirth, 2003) to promote treatment integrity (Gresham, 1989; Flugum & Reschly, 1994; McDougal et al., 2005; Telzrow & Beebe, 2002), ensuring teacher acceptability (Eckert & Hintze, 2000; Kazdin, 1981; McDougal et al., 2000; Noell et al., 2005; Witt & Martens, 1988), structuring dialogue so that teacher input is encouraged and valued (Kampwirth, 2003; Pugach & Johnson, 1989, 2000, 2002; Slonski-Fowler & Truscott, 2004), and providing teachers

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with emotional and logistical support (Athanasiou et al., 2002; Doll et al., 2005; Etschedit & Knesting, 2007; Fuchs et al., 1990; Slonski-Fowler & Truscott, 2004) can easily be viewed as social-contextual conditions that serve to satisfy teachers' basic psychological needs of competence, autonomy, and relatedness. In the section that follows, the existing literature on PITs and teacher consultation is reviewed through an SDT lens.

Competence in the PIT and Consultation Literature

In simple terms, a competent teacher might be described as one who can foster positive change in his/her classroom and facilitate student growth. Along these lines, when functioning effectively, PITs and consultants can be viewed as teacher competence-enhancers. That is, the primary goal of PITs and school-based consultants is to provide teachers with solutions to address student needs and ultimately improve teachers' on-the-job functioning (Caplan & Caplan, 1993; Kampwirth, 2003; Pugach & Johnson, 1989). Through PITs and consultation, teachers may learn new interventions or ways in which they can modify existing interventions with students. In this manner, PITs and consultants can provide teachers with competence-enhancing conditions such that teachers perceive a resultant increase in their competence. The literature suggests that teachers seek such conditions in their PIT and consultation experiences. For instance, Gutkin (1981) found that over two-thirds of the reasons consultees sought assistance were related to their lack of knowledge and skill in resolving problems. Accordingly, PITs and consultants need to possess expertise in intervention technology, with a knowledge base that includes an understanding of the elements of effective instruction and behavior management strategies (Idol et al., 2000; Zins & Erchul, 2002). Moreover, they should be able to infuse their consultees (i.e., teachers) with this knowledge, assist them in

developing intervention plans, and help them perfect their intervention skills so that they are better equipped to help the client (i.e., referred student) and other students with similar difficulties in the future (Caplan & Caplan, 1993; Kampwirth, 2003; Pugach & Johnson, 1989; Zimmerman, 1995).

A review of the relatively small literature base offers mixed results regarding teachers experiencing PITs and school-based consultation as competence-enhancing. As far as positive findings, Goldman and colleagues (1997) found a significant relationship between teachers' use of consultation from a licensed clinical social worker and their increased sense of problem-solving capacity. Brownell and Pajares (1999) obtained similar results, finding an association between teachers' efficacy beliefs for instructing students with learning and behavior problems and their perception of collegial support (e.g., receiving ideas and materials from special education teachers). In Carter's (1989) small study ($n = 9$) with TATs, teachers generally felt that team members offered new solutions for addressing referral problems. Shram and Semmel's (1984) findings were more equivocal; only roughly half of the teachers in their study indicated TAT recommendations addressed the problem at hand and were pertinent to teacher concerns, practical, specific, individualized, and unambiguous. Several studies offer more troubling findings. Consistent with Truscott and colleagues' (2005) report from national survey data, in which they found that team suggestions rarely included substantive modifications to instruction, 75% of the teachers in Slonski-Fowler and Truscott's (2004) qualitative study felt the team process was essentially an exercise in documentation. They characterized interventions as redundant, generic, or too vague to implement. Unfortunately, these findings are not novel. The teachers in Inman and Tollefson's (1988)

research expressed similar frustrations. Not only did 90% comment that the team asked them to re-implement previously attempted interventions, but teachers who more frequently referred children to the team had more negative views of the team. Based on these results, one might conjecture that the team's ability to enhance teachers' competence declined with use.

In some cases, teams may provide teachers with substantively new intervention ideas, but the interventions are not implemented with integrity. These interventions are less likely to be successful and the teachers implementing the interventions are subsequently unlikely to experience an increase in their sense of competence to address student difficulties (Gresham, 1989; Flugum & Reschly, 1994; McDougal et al., 2005). One factor that may interfere with treatment integrity is a lack of specificity in the intervention design. For instance, teachers in Wilson and colleagues' (1998) study were unable to describe their methods for working with challenging students in anything other than vague terms, which the authors proposed may have been a reflection of the specificity of the team-proposed interventions themselves. Taken together, the studies outlined above suggest that competence-promotion is an important aspect of effective PIT and consultation experiences. However, research has not systematically explored this construct with teachers involved with PITs or consultants and accordingly, further investigation is warranted.

Autonomy in the PIT and Consultation Literature

Although teachers aim to gain new intervention ideas and skills through consultation to increase their sense of competence, the best practice literature indicates that PITs and consultants should be careful to avoid using an "expert model" of

consultation (Pugach & Johnson, 1989, 2002). Specifically, PITs and consultants need to seek input from teachers, respecting and privileging their knowledge about teachers' classroom and students, in order to facilitate their independent problem-solving (Kampwirth, 2003; Pugach & Johnson, 1989, 2002). Pugach and Johnson (1989, 2002) purport that collaboration is critical to team and consultation success; they feel the blending of skills and perspectives holds the potential to enhance the team's collective problem-solving power. As much as possible, content decisions (e.g., on the interventions to be implemented) should be jointly generated and approved by all parties within a non-hierarchical climate (Kampwirth, 2003; Kovaleski, 2002; Pugach & Johnson, 1989, 2002; Telzrow & Beebe, 2002; Zins & Erchul, 2002). As Kampwirth (2003) noted, "having all the expert knowledge in the world in the areas of curriculum, teaching methods, and behavior management is of no use if the consultant does not know how to relate it to the consultee as an adult learner-collaborator" (p. 23).

When the consultation climate is non-egalitarian and/or teams consist largely of specialists, teachers may react with intimidation and a lack of assertiveness rather than offering independent summaries of their professional views (Pugach & Johnson, 1989, 2002). This is problematic for a variety of reasons, not the least of which being that teachers are more likely to implement interventions if they perceive they had a role in developing them (Nevin, Thousand, Paloucci-Whitcomb, & Villa, 1990). Accordingly, teacher acceptability—teachers' judgments that the intervention procedures are appropriate, reasonable, and unobtrusive (Kazdin, 1981)—is an important factor for teams and consultants to consider (Eckert & Hintze, 2000; Telzrow & Beebe, 2002). Soliciting teachers' feelings and opinions can help to ensure interventions are acceptable,

fit into teachers' routines, and are compatible with teachers' philosophies and their classroom environment (Dietrich, 1999; Sheridan, Kratochwill, & Bergan, 1996; Witt & Martens, 1988). This approach is felt to enhance treatment integrity/adherence, although the link between acceptability and treatment implementation has received inadequate attention in empirical studies (Eckert & Hintze, 2000; Noell et al., 2005).

Research suggests that there is considerable variability in teachers experiencing PITs as autonomy-supportive, respectful, and receptive to teacher input and opinion. A handful of studies reveal promising findings. For instance, 72% of the teachers in Shram and Semmel's (1984) study, all of whom experienced the TATs as successful, reported being actively encouraged to participate in TAT discussions and decisions. However, only a slight majority felt like part of the team, which suggested, according to the authors, that teacher input was solicited but not incorporated in a fashion that made them feel like equal members. In another TAT study, educators agreed that team members respected their opinions and were sensitive to their feelings (Harrington & Gibson, 1986). Kruger's (1997) research suggests that autonomy-supportive team experiences can, in themselves, function to increase teachers' perceptions of their own competence. Specifically, he found that team reassurance of the teacher's worth, defined as the teacher's sense that the team appreciated his/her skills and abilities, exhibited a substantial relationship to self-efficacy in problem solving.

Pugach and Johnson's (1996) findings lend additional support to the importance of meaningful teacher involvement in the consultation process. Using a structured dialogue and a peer collaboration approach, teachers were actively involved in constructing meaning about classroom problems and developing interventions. This

approach produced noteworthy results: teachers reported improvement in 86% of the

situations targeted by intervention. In a more recent qualitative study of teams selected as

exemplary, team members consistently reported that exploring a variety of options,

asking a multitude of questions, and soliciting ideas and perspectives from *all* parties was

critical to team effectiveness (Etscheidt & Knesting, 2007). However, not all teams

succeed in respecting teacher knowledge and opinions. For example, Slonski-Fowler and

Truscott (2004) found that two-thirds of teachers in their qualitative study perceived their

input was devalued or ignored by the teams in designing recommendations and final

outcomes. They noted that communication and problem solving appeared to diminish

substantially when teachers perceived this devaluation. This finding, coupled with the

research outlined above, suggest that autonomy-promotion is an important component of

successful PITs and consultation relationships. However, research to date has not

explicitly examined teachers' satisfaction of the need for autonomy within these common

school contexts and therefore, additional research is necessary.

Relatedness in the PIT and Consultation Literature

Beyond enhancing teacher capacity in a collaborative way, PITs and consultants

should be aware that teachers generally call upon their services in times of need.

Accordingly, it is important that the team process and consultative relationship be warm,

caring, and supportive (Pugach & Johnson, 2002; Zins & Erchul, 2002). Three qualitative

studies highlight the weight teachers place on this need. For instance, in Athanasiou and

colleagues' (2002) study, consultees cited support as the most important aspect of their

relationship with consultants. Specifically, they felt heard and appreciated the time the

consultants allotted to listen to their concerns and frustrations. In fact, even though the

teachers as a whole did not find the interventions suggested by consultants to be effective, they all indicated they would seek consultation in the future in large part because they felt so supported. Team members in the Etscheidt and Knesting study(2007) also cited feeling cared for as being integral to team effectiveness. Specifically, team members found it safe to have difficult and sometimes heated conversations about the best solution for a child, because they felt the discussion was among friends. In contrast, Slonski-Fowler and Truscott (2004) found that teachers expressed frustration when they perceived an absence of support. Eighty-three percent noted a lack of follow-up from team members; they felt unsupported and alone in pursuing the team-developed goals.

Another way in which teams and consultants can care for teachers and help to satisfy teachers' need for relatedness is by acknowledging and respecting teachers' daily stressors and workloads. Specifically, even without difficult-to-teach students, teachers are short on time and support (U.S. Department of Education, 2004). Accordingly, teachers may be prone to view teams and consultants that do not consider teachers' daily realities (e.g., large classes, limited free time, diverse students) as disconnected and uncaring. This is evident in the PIT literature: in a number of studies, teachers complained that finding suitable meeting times was difficult, the iterative nature of the consultation process took too long, prescribed treatments were too complex, the interventions demanded too much time and energy, and they wanted periodic check-ins and more administrative and school support (e.g., Fuchs & Fuchs, 1989; Fuchs et al., 1990; McDougal et al. 2005). The teacher acceptability literature reflects these same obstacles: teachers generally tend to find interventions that are less complex and require less time and resources as more acceptable (Dietrich, 1999; Eckert & Hintze, 2000;

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Gresham, 1989; Telzrow & Beebe, 2002). Taken as a whole, these studies suggest that relatedness is an important condition that may influence PIT and consultation success. However, teachers' experiences of emotional support and satisfaction of the need for relatedness through PIT and/or consultation processes have not been thoroughly examined. Further research in this domain is warranted.

Studies 1 and 2

The current studies address three gaps in the literature on PITs. First and foremost, existing studies on PITs lack a theoretical framework for understanding the team process. Instead, research to date has generally examined teams dichotomously, focusing on whether teams were successful or not. The present studies use an empirically tested theory to examine successful PITs. Namely, the SDT model was used to gain insight into teachers' experiences of the PIT process. The literature reviewed above provides considerable evidence that SDT concepts are important to successful consultation and PIT functioning. However, prior to the current studies, the SDT model had never explicitly been tested with PITs.

Secondly, previous studies of PITs suffer from a variety of methodological shortcomings. The majority of these studies examine university-led team programs, which tend to differ from field-based PITs in their training, intervention knowledge, and funding. Accordingly, the results of these studies may not be an accurate reflection of how PITs function in schools without researcher-infused resources. Additionally, the few studies that examine teacher perspectives of PITs tend to assess teachers' global satisfaction with the team process. Moreover, they do not systematically explore the link between specific team process conditions and teacher satisfaction. Thus, these studies fail

to assess whether specific team process conditions are critical to teachers perceiving that they have benefited from participating. Previous study findings, therefore, lack clarity: the researchers themselves must infer what team process conditions are associated with teacher general satisfaction.

By contrast, the present studies have several methodological strengths. The research was conducted with field-based PITs, which were established and implemented without university training, assistance, or funding support. Therefore, the study has higher external validity than previous studies of university-led teams. Additionally, the SDT model guided the assessment of teacher satisfaction with the process. Specifically, the current studies explored whether teachers perceive that the team helps to satisfy their three basic needs for competence, autonomy, and relatedness. The studies also explored whether particular team conditions were linked with teacher need satisfaction. Intervention novelty (i.e., team provision of modified or new intervention ideas), which was conceptualized as a competence-enhancing condition, was examined to determine if it was associated with teacher reports of increased perceived competence.

Third, the present studies provide additional insight into the role of PITs in schools. Specifically, these studies were intended to explore the link between the team process and student outcomes. The studies examined whether PITs with teachers reporting higher levels of satisfaction of their basic needs for competence, autonomy, and relatedness via their experience with the team realized greater levels of success in affecting student-level change.

Two interrelated studies were conducted. Study 1 reviewed a random sample of a whole district's elementary school PIT records. Study 2 was a more in-depth examination

of teacher reports of their PIT experiences and used both records review and teacher self-report to gain additional information on PIT processes and outcomes and teacher need satisfaction. Study objectives and hypotheses are outlined below:

Study 1 Objective 1: Describe the Variability in Competence-Enhancing Conditions on PITs

Study 1 examined the degree to which PITs provided classroom teachers with intervention novelty (i.e., new or significantly modified intervention ideas), which theoretically could serve to increase teachers' capacity to address the needs of students with academic and behavioral difficulties.

Study 1 Objective 2: Examine the Relationship Between Intervention Novelty and Team Outcomes

Study 1 analyzed whether there was an association between intervention novelty, theorized to be a competence-enhancing condition, and success or progress on the referred student's target goal. Study 1 also explored the relationship between intervention novelty and intervention utility, the latter operationalized as the sustainability and perceived usefulness of the PIT-suggested interventions. Given that PITs are designed to provide teachers with novel ideas for intervening effectively with students (Chalfant & Pysh, 1989; Fuchs et al., 1996; Kovaleski & Glew, 2005; Pugach & Johnson, 1989, 1996; Zins & Erchul, 2002), we hypothesized that teams offering a higher degree of intervention novelty would realize greater success in addressing students' target goals. We also posited that interventions with a higher degree of novelty would be more sustainable and useful for teachers.

Study 2 built upon Study 1 to gain a better understanding of teachers' perceptions and experiences of the PIT process. Study 2 had three goals. First, the study re-examined whether teams with greater intervention novelty (i.e., that provided teachers with modified or new interventions) would realize higher levels of success. Secondly, the study assessed whether teachers reported a perceived increase in their competence when participating on teams with these competence-enhancing conditions. Third, it evaluated whether teacher reports of basic need satisfaction were linked to team success.

Study 2 Objective 1: Evaluate the Relationship Between Intervention Novelty and Teacher Perceptions of Increased Competence

The study explored whether intervention novelty was linked to teacher reports of increased competence (i.e., their capacity to help the referred student and other challenging students to succeed). We hypothesized a strong positive correlation between intervention novelty and teacher-perceived competence, lending support to the proposition that this team process condition is de facto competence-enhancing.

Study 2 Objective 2: Re-examine the Relationship Between Intervention Novelty (i.e., PIT-Provided Opportunities for Competence Enhancement) and Team Outcomes

As with Study 1, Study 2 explored the link between intervention novelty and team outcomes. As PITs are charged with providing teachers with new skills/ideas for addressing student needs (Chalfant & Pysh, 1989; Fuchs et al., 1996; Kovaleski & Glew, 2005; Pugach & Johnson, 1989, 1996; Zins & Erchul, 2002), we hypothesized that there would be a strong positive correlation between intervention novelty (i.e., PIT provision of meaningfully modified or new intervention ideas) and team success in addressing student needs.

Study 2 Objective 3: Evaluate Whether Teacher-Perceived Autonomy-Support Accounts for Any Additional Variance in Team Success, Over and Above That Due to Intervention Novelty

Given the research that competence enhancement <u>and</u> autonomy-support (Deci & Ryan, 2000; Ryan & Deci, 2002) are critically important to motivation, we expected teacher experiences of a supportive and autonomy-fostering team climate to be linked to greater levels of team success.

Study 2 Objective 4: Evaluate Whether Teacher-Perceived Relatedness Accounts for Any Additional Variance in Team Success, Over and Above That Due to Competence Enhancement and Teacher-Perceived Autonomy-Support

This objective examined the relationship between teacher-perceived connection to PIT members and the team's effectiveness in producing student-level change. We hypothesized that higher levels of teacher-perceived relatedness will be linked to greater levels of team success.

CHAPTER III

STUDY 1 METHODS AND DATA ANALYTIC PLAN

Setting and Participants

Both Study 1 and Study 2 were conducted in the public elementary schools in a small Southeastern city. Study 1 was conducted during the pilot year (i.e., the 2005-2006 school year) of the district's roll-out of a new prereferral intervention team program. The shift to a new prereferral intervention team model was district-led. The program model utilized by the district had been shown previously to yield positive student change (McDougal et al., 2000).

According to the district's Annual Progress Report, the district served 12,527 students during the 2005-2006 school year. Of these students, 5,270 were enrolled in elementary school. The student population had a comparable racial and ethnic composition to that of many other areas of the United States; enrolled students were 77% White, 13.5% African-American, 4.6% Hispanic, 4.3% Asian, and 0.6% Other. Approximately 19% of the population received special education services, 19% received free or reduced lunch, and 17% were placed in gifted programs. The teacher population in the district was predominantly White (93.2%) and female (77.4%), and a large proportion (43%) held Masters degrees. Teachers in the district, on average, had approximately 14 years of teaching experience.

Procedures

Following Institutional Review Board approval from both the University of

Virginia and the district under study, the researchers solicited district elementary schools

for participation in Study 1. The researchers contacted the principal at each elementary

school in the district, with 15 of the 16 schools agreeing to participate in the study. The

principal at the one non-consenting elementary school opted not to participate due to

concerns about the time burden he believed the study would place on the school's

administrative personnel. Another school had to be excluded given that their PIT records

did not follow the standardized forms used by all the other schools. As a result, data were

collected from 14 of the 16 elementary schools.

The district-developed forms, which were slightly modified versions of those used

by McDougal and colleagues (2000), were used by PITs in the district to document the

PIT process and procedures employed for each referred student. Forms include an initial

request for assistance form, a referral information form, an initial meeting form, follow-

up meeting forms, and, if necessary, referral forms for a Section 504 evaluation or a

special education evaluation.

The researchers recruited three district employees unaffiliated with the study

(hereafter referred to as "record collectors") to assist in the collection and de-identification

of the schools' PIT records. The schools provided one of the record collectors with lists

of the students referred to their respective PITs during the 2005-2006 school year. Each

student received a unique identification code to preserve his or her anonymity. To ensure

the random selection of the PIT records collected, the research team provided the record

collector with a list of randomly generated numbers that corresponded with the students'

identification codes. The record collectors then copied and removed identifying

information from ten PIT forms for each school. If fewer than ten students had been

referred to the school's PIT during the 2005-2006 school year, the form collector copied

and de-identified all of the school's 2005-2006 PIT records.

<center>PIT Record Completeness</center>

Incomplete data occurred for two primary reasons: timing of the PIT initial

meeting and poor compliance with the paperwork. If PITs held the initial meeting in the

last months of the school year, the PIT process often continued into the next school year,

which was beyond the scope of our data collection. Additionally, some PITs omitted

significant sections of the district forms or did not complete the forms at all. Due to

incomplete data, the original sample of PIT records ($N = 129$) was broken down into two

smaller samples—the full sample ($n = 117$) and the analytical sample ($n = 50$). For the

full sample, twelve of the 129 records were excluded. Five records were excluded

because they lacked intervention novelty data, and seven records were excluded because

the teams did not appear to address referrals using team problem-solving—students were

immediately referred for special education evaluations.

The analytical PIT sample of 50 was obtained after exclusion of 67 PIT records.

Records were excluded because they did not have a full set of forms ($n = 65$) or the PIT

scheduled the follow-up meeting for the following school year ($n = 2$). With regard to

those records lacking a full set of forms, data were needed on the team-suggested

interventions, PIT perception of progress, and intervention utility to examine the

relationship between intervention novelty (team competence-enhancing conditions) and

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team outcomes (Objective 2). Thirty-six records were excluded because they lacked data on the first team outcome measure—PIT perceptions of student progress. Twenty-nine records lacked data on the second team outcome measure—intervention utility (i.e., the final status of the team's suggested interventions)—and thus, these records were not included in the analytical sample as well. The flow chart in Figure 1 indicates the process by which these analytical samples were obtained.

Figure 1
Flow Chart of Sample Selection

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                        ┌─────────────────────────┐
                        │        n = 129          │
                        └─────────────────────────┘
                                    │
Excluded records with immediate referrals for special education evaluations (n = 7) and those missing data (n = 5)
on competence-enhancing conditions (i.e., whether or not the team provided new or improved intervention ideas)
                                    │
                                    ▼
                        ┌─────────────────────────┐
                        │        n = 117          │
                        └─────────────────────────┘
                                    │
Excluded records without data on the team's perception of intervention progress (n = 36) and those with first
follow-up meetings scheduled for the following school year (n = 2)
                                    │
                                    ▼
                        ┌─────────────────────────┐
                        │         n = 79          │
                        └─────────────────────────┘
                                    │
Excluded records without data on the final status/utility of the team-suggested interventions (n = 29)
                                    │
                                    ▼
                        ┌─────────────────────────┐
                        │         n = 50          │
                        └─────────────────────────┘
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Sample Comparison

Analyses were conducted to investigate whether there were significant differences between the two samples ($n = 117$ and $n = 50$). Pearson chi-square analyses revealed no significant differences between the samples with regard to student gender $\chi^2(1, N = 117) = .38, p = .54$; student race $\chi^2(4, N = 117) = 2.77, p = .60$; grade $\chi^2(5, N = 117) = 9.18, p = .10$; and school attended $\chi^2(13, N = 117) = 14.42, p = .35$. There were also no differences in whether the student had academic or nonacademic primary goals $\chi^2(2, N = 117) = 1.08, p = .58$, whether the students were referred for special education testing $\chi^2(1, N = 117) = .17, p = .68$, or whether they were found eligible for special education services $\chi^2(1, N = 47) = 1.34, p = .25$. Independent sample t-test results indicated that the two samples were not significantly different with regard to the number of referral concerns $t(160) = 1.33, p = .18$ and intervention novelty $t(165) = -.43, p = .67$. These findings suggest that the two samples are comparable in their composition.

Measures

The research team conducted a records review and coded the PIT records to determine the variability in teams' provision of novel and substantive intervention ideas and success in meeting the needs of referred students. The research team developed a coding manual and worksheets to guide the coding of the records. Following extensive coding training, the research team coded the PIT records. To test intercoder reliability, one member of the research team coded 30 randomly selected records that overlapped with the other coders. All coders were blind to which records were double-coded for reliability. Cohen's kappa for the codes used in Study 1 ranged from .61 to 1.0. Based on Cicchetti and Sparrow's (1981) guidelines for interpreting kappa coefficients (i.e., greater than 0.75 suggests

excellent agreement and a kappa between 0.60 and 0.74 reflects good agreement), all

codes used in Study 1 reached appropriate levels of reliability.

Primary Goal Category

The research team reviewed records and categorized the primary goal for referred

students into one of eight categories: academic, inattention, overactivity,

aggression/defiance, social/emotional, work attitude, medical, or other. See Appendix A.

Intervention Novelty

The researchers reviewed the records to determine the degree to which PITs offered

novel suggestions for intervening with referred students. The researchers used a single-

item code with a range of zero to three to assess whether the PIT proposed any

intervention at all (0), the same intervention(s) as previously implemented (1),

substantive and sustained modifications to previously implemented interventions (2), or

substantially modified/new and sustained interventions (3). Teams with higher

intervention novelty codes were considered to have provided teachers with newer and

more substantive intervention ideas and, in turn, to have greater competence-enhancing

conditions for teachers. Cohen's kappa for this code was .61. See Appendix B for more

information on the intervention novelty code.

Team Outcome

PIT-perceived progress. The research team reviewed the records and used an

aggregate of two single-item codes to determine the degree to which PITs addressed

referred students' target goals. The first item had a range of one to three and was based

on the check boxes that PITs mark on the district's forms to indicate whether they felt the

student made minor progress (1), made promising progress (2), or met or exceeded the

identified goal (3). The second item was based on coders' assessment of student progress. The coders examined the intervention data in relation to the goals of the interventions to determine the degree to which the referred student made progress. The coders rated on a three point scale: not helpful/no improvement (1), some improvement (2), helpful/good improvement (3). Cohen's kappa for this code was .78. The two-item scale showed adequate internal consistency (Cronbach's α = .69). Accordingly, the two codes were summed and averaged to produce an index of team outcome for each PIT, with higher numbers reflecting higher levels of team success. See Appendix C.

Intervention utility. After intervention(s) with referred students were implemented, the PIT members checked off whether to continue or discontinue the intervention(s). The decisions to continue or discontinue were rank ordered to indicate the utility of the intervention(s). The coders extracted the data from the PIT records (kappa = .76). The code had a range of zero to three, with higher numbers reflecting higher levels of intervention usefulness. PITs indicated on the forms whether the intervention was substantially revised or replaced (coded as 0, suggesting the lowest intervention utility), the intervention was continued with minor changes (coded as 1), the intervention was continued without changes (coded as 2), a plan was developed to discontinue the intervention (coded as 3, suggesting the highest intervention utility), or a new behavior and/or academic goal was identified and a new intervention created (also coded as 3, suggesting the highest intervention utility). See Appendix D.

Special Education Eligibility

The district reviewed the records of students included in this study and provided the research team with a de-identified dataset on whether the students had been referred for special education testing and, if so, found eligible for special education services from 2005-2007.

<div align="center">Data Analysis</div>

Initial analyses describe the characteristics of students referred for pre-referral interventions. Also described is the variability in intervention novelty (i.e., competence-enhancing conditions) offered by PITs. These analyses used the full sample ($n = 117$). First, descriptive analyses of the students referred to the PITs, the nature of the PIT referrals, students referred for special education testing and found eligible for services, and PIT intervention novelty were examined. Second, the new or modified intervention ideas were categorized and reviewed.

Subsequent analyses examined the relationship between PIT competence-enhancing conditions and team outcomes. These analyses involved the analytical sample ($n = 50$). First, intra-class correlations were run to explore the possible impact of nesting of the data within schools. There was an average of four PIT records per school. The intraclass correlation indicated that the between-school variability in intervention novelty was minimal (i.e., under 1%). As a result, the effects of nesting did not have to be considered in the analyses.

Pearson correlation coefficients were then calculated to evaluate the relationship between intervention novelty (i.e., the presence of competence-enhancing conditions) and team outcomes. To further investigate this relationship, follow-up multivariate regression

analyses were conducted. These regression analyses took into account the primary goal

category for the referred student (e.g., academic, social-emotional) given that PITs may

be better equipped to help general education teachers to intervene with students with

difficulties of a primarily academic nature.

CHAPTER IV

STUDY 1 RESULTS AND DISCUSSION

Descriptives for Full Sample

The first section of this chapter profiles the full sample (n = 117) and includes

information on the race, gender, and grade of students referred to the PITs, the nature of

the PIT referrals (e.g., who referred the student, number of concerns, type of referral

concerns, and identified goals), the number of students referred for special education

testing and found eligible for services, and the presence of competence-enhancing

conditions (i.e., team provision of new or modified intervention ideas) on the PITs. A

table of the types of new or modified interventions is also presented.

PIT Student and Referral Characteristics

Demographic data on the students referred to PITs are presented in Table 1. Table

2 provides the characteristics of the PIT referrals themselves, and Table 3 presents

descriptive information regarding PIT-referred students who received special education

testing.

Table 1
Demographic Information on Students Referred to PITs

Variable	N	Percent of Sample ($N = 117$)
Gender		
Male	67	57.3
Female	50	42.7
Race		
White	79	67.5
African-American	27	23.1
Hispanic	8	6.8

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Asian	2	1.7
Other	1	.9
Grade		
Kindergarten	32	27.4
First	21	17.9
Second	21	17.9
Third	29	24.8
Fourth	12	10.3
Fifth	2	1.7

A majority of the referrals were made for boys (57%) compared to girls (43%).

Approximately two-thirds (68%) of the referrals were for white students, although nearly

one-quarter (23%) of referred students were African-American. The large majority of

referrals occurred prior to fourth grade; kindergarten and third grade were the most

common grades from which students were referred to PITs.

Table 2
Descriptive Information on the PIT Referrals

Variable	N	Percent of Sample (N = 117)
Referring Source		
Teacher	78	66.7
Parent	14	12.0
Teacher and Parent	3	2.6
Other	9	7.7
Resource Teacher	2	1.7
Missing Data	11	9.4
Number of Listed Referral Concerns		
One	28	23.9
Two	34	29.1
Three	35	29.9
Four	10	8.5
Five	7	6.0
Missing Data	3	2.6
Listed Referral Concerns[1]		

Academic	94	80.3
Inattention	56	47.9
Overactivity	24	20.5
Aggression/Defiance	13	11.1
Social/Emotional	45	38.5
Work Attitude	13	11.1
Medical	26	22.2
Other	5	4.3
Primary Goal[1]		
Academic	73	62.4
Inattention	23	19.7
Overactivity	5	4.3
Aggression/Defiance	5	4.3
Social/Emotional	17	14.5
Work Attitude	4	3.4
Medical	7	6.0
Other	2	1.7

[1]As PITs sometimes listed several categories for concerns and goals, the frequencies and percentages for these variables will not add up to 117 and 100%, respectively.

Teachers initiated 67% of the 117 PIT referrals and parents initiated 12% of the PIT referrals. The vast majority (80%) of referrals listed academics as an area of concern. Additionally, in many of the referrals, student inattention (48%) and social/emotional difficulties (39%) were noted as concerning.

Referrals for Special Education Testing and Eligibility Findings

Some students referred to the PITs are successfully served in the general education setting and are not referred for special education testing. However, in many cases, the PITs deem it necessary to refer the students for special education evaluations. Tables 3 and 4 provide descriptive statistics on PIT-referred students who received special education testing and the eligibility findings for those students.

Table 3

Rates of Special Education Evaluations for Students Within Two Years of PIT Referral.

Referral Status	*N*	Percent
Referred for Special Education Evaluation	47	40.2
Not Referred for Special Education Evaluation	70	59.8

Table 4

Eligibility Findings for PIT-Referred Students Receiving Special Education Evaluations

Eligibility Determination	*n*	Percent
Found Eligible for Special Education Services	34	72.3
Not Found Eligible for Special Education Services	13	27.7

Of the 117 students referred to PITs, 47 (40%) were eventually referred for special education testing. Following testing, 72% of these 47 students were found eligible to receive special education services compared with 28% who were tested but found ineligible for special education services.

Variability in Competence-Enhancing Conditions on PITs

A primary aim of Study 1 was to examine the distribution of competence-enhancing conditions across PITs—namely, the degree to which PITs provided classroom teachers with substantive and novel suggestions for intervening with referred students. Table 5 provides descriptive information on the distribution of these competence-enhancing conditions as measured on the intervention utility scale.

Table 5

Distribution of PIT Intervention Novelty

Variable	*N*	Percent of Sample (*N* = 117)
(0) No Intervention Described	6	5.1
(1) Unmodified Intervention	10	8.5
(2) Slightly Modified/Non-Sustained Intervention	30	25.6
(3) Substantially Modified/New and Sustained Intervention	71	60.7

Overall, 61% of the PITs proposed interventions that were new or substantially modified from those previously implemented by teachers. However, about 9% advised teachers to continue using the interventions they had already been utilizing prior to referring the child to the PIT. Moreover, about 5% did not propose any interventions at all. Examples of the substantially modified and new interventions introduced during the PIT process are presented in Table 6.

Table 6

Types of Interventions Suggested

Intervention Type	Substantially Modified/New Interventions (*N* = 141)	
	n	Percent
Behavior Contract	5	3.5
Behavior Contract with Home-School Collaboration	10	7.1
Self-Monitoring System	7	5.0
Guided Support to Complete Age-Appropriate Tasks	8	5.7
Alternative Teaching Methods	27	17.1
Alternative Seating Assignment	1	0.7
Social/Emotional Support by School Personnel	11	7.8
Counseling/Guidance Services Within the School	10	7.1
Tutoring/Extra Academic Support Within the School	21	15.0
Support from an Outside Agency	8	5.7
Home Support	13	9.2
Parent Consultation	12	8.5
Other	8	5.7

As PITs sometimes provided several intervention ideas to address the primary goal for the referred child, the frequencies for these categories will not add up to 117.

PITs most frequently (i.e., approximately 17% of the time) proposed alternative teaching methods (e.g., increased use of manipulatives, modifying assignments, repeating directions, and writing down oral directions) and (15% of the time) tutoring/extra academic support at school to address the student's primary goal. Additionally, the PITs often encouraged parental involvement and/or consultation with outside professionals. Specifically, PITs commonly (i.e., approximately 9% of the time) suggested increased home support, which requires parents to participate in intervention implementation, and parent consultation with outside professionals, which may include parents arranging for an evaluation or consultation with a pediatrician or specialist outside of the school.

Results for Analytical Sample

This section presents findings involving the smaller sample (*n* = 50). Descriptive

statistics on team outcomes (i.e., student progress and intervention utility) as well as the

results of analyses examining the relationship between PIT intervention novelty,

intervention utility, and student progress in the prereferral intervention are presented.

Team Outcome Descriptives

The PIT records showed considerable variability with regard to student progress

(*SD* = .79) and intervention utility (*SD* = .97). Students referred to PITs tended to make

moderate progress (*M* = 1.54) on their primary goal. Additionally, PIT-proposed

interventions for addressing these primary goals were generally continued without

changes (*M* = 2.13), suggesting that the teams' proposed interventions were perceived as

useful to the teachers (see Table 7).

Table 7
Team Outcome Descriptive Statistics

Scale	Mean	SD	Range
PIT-Perceived Progress	2.13	.79	1.0-3.0
Intervention Utility	1.54	.97	0.0-3.0

Findings

Correlations. A primary aim of Study 1 was to examine the relationship between

PIT intervention novelty and team outcomes. Contrary to our original hypothesis, no

significant relationship was found between intervention novelty and PIT-perceived

student progress or intervention utility. A trend, however, was found between

intervention novelty and intervention utility (r = .26, p = .07), suggesting that teachers

who received new or meaningfully improved intervention ideas from their PITs tended to

perceive the interventions as more useful and implement them for longer durations. The

team outcome variables, PIT-perceived progress and intervention utility, had a moderate

correlation which approached significance ($r = .27, p = .06$). See Table 8.

Table 8
Intercorrelations Between Intervention Novelty and Team Outcomes

Scale	1	2	3
1. Intervention Novelty			
2. PIT-Perceived Progress	.12		
3. Intervention Utility	.26[+]	.27[+]	

[+]$p < .10$

Multivariate regression analyses. In two separate analyses, the team outcome

variables (i.e., PIT-perceived progress and intervention utility) were regressed on two

predictors, the variable "primary goal is non-academic" and intervention novelty. Model

1 approached significance in predicting student progress. In Model 1, when taking into

account intervention novelty, PITs focused on non-academic goals were more likely to

show progress ($\beta = .30, p < .1$). When taking into account whether PITs focused on non-

academic goals, however, intervention novelty did not predict student progress ($\beta = .15, p

= .29$). Together the predictors accounted for 10% of the variance in perceived student

progress. In Model 2, "primary goal is non-academic" and intervention novelty were

significant predictors of intervention utility. Specifically, when taking into account the

new or improved nature of the interventions, PITs with non-academic goals were more

likely to have more useful interventions ($\beta = .33, p < .05$). In addition, when taking into

account whether the goal was academic or non-academic, novel or improved intervention

ideas were more likely to be useful ($\beta = .29, p < .05$). Together, the predictors accounted

for 17% of the variance in intervention utility.

Table 9
PIT Goal and Intervention Novelty Predict Progress and Intervention Utility

	Model 1	Model 2
	β	β
Academic Primary Goal	$-.30^+$	$-.33*$
Intervention Novelty	.15	.29*
R^2	$.10^+$	.17*
F Value	$F(2, 47) = 2.7^+$	$F(2, 47) = 4.9*$

Note: β = Standardized Beta
$^+ p < .10 * p < .05$

Study 1 Discussion

The results of Study 1 offer a portrait of the types of children referred to prereferral intervention teams and the reasons why they need assistance. The study also provides a snapshot of the number of prereferral students who are tested for special education and found eligible for services. Moreover, the study shows that while most prereferral teams offer new intervention ideas for classroom teachers to implement with their referred students, a substantial number of teachers do not receive novel intervention ideas. Finally, the study showed a trend that if teachers are offered new interventions during the PIT process, then they are more likely to find those interventions useful. Unexpectedly, whether teachers were offered novel interventions in the PIT process was not related to student progress in reaching their preferral goals.

The majority of students referred to these PITs were white, male, and teacher-referred. That noted, there was a substantially higher percentage of African-American students referred to the PITs than would be expected given their composition in the student population in the district. This finding is not surprising given similar trends in the

special education literature, which has frequently shown that African-American students are overrepresented in the population of students receiving special education services (Donovan & Cross, 2002; Harry & Klingner, 2006; Valenzuela, Copeland, Qi, & Park, 2006).

Most PIT referrals occurred prior to 4th grade; kindergarten and third grade students comprised over half of the PIT referrals. The high number of kindergarten referrals may be due to the fact that kindergarten is many children's first exposure to structured, formal schooling. Accordingly, kindergarten teachers frequently are the first educators to teach these students and identify significant learning challenges, often leading to PIT referrals for those children who struggle. The high number of 3rd grade referrals is likely correlated with the increased pressure on both teachers and students, as 3rd grade is the first year in Virginia in which students take Standards of Learning (SOL) tests. This finding has implications for the need to provide additional supports for kindergarten and third grade teachers. Specifically, kindergarten and third grade teachers are likely to benefit from having time set aside for them to collaborate with their peers regarding classroom interventions as well as trainings on individualized and empirically supported interventions targeting academic and/or inattention difficulties.

Study 1 results highlighted the successes of PITs as well as the challenges they face in helping teachers to meet the needs of their students. Sixty percent of the children referred to the PITs seemed to be effectively served via the PIT process without the need for special education testing or services. The PITs appear to be achieving their intended aim with this group of students, helping teachers to remediate academic and behavioral challenges in the general education classroom. This finding is consistent with previous

research and lends further support to the PIT approach as useful and cost-effective (Burns & Symington, 2002; Fuchs et al., 1990a, 1996; Kovaleski & Glew, 2005; Marston et al., 2003). PIT-referred students seemed to be those most in need of help in school. That is, 40% of the students referred to the PITs went on to receive special education evaluations; this figure is consistent with previous research on special education testing referral rates in schools with PITs (e.g., Bahr, Whitten, Dieker, Kocarek, & Manson, 1999; Lane, Pierson, Robertson, & Little, 2004). Of the students referred to PITs and then subsequently for special education evaluations, 72% were found eligible for services from 2005-2007. This is a considerably high rate, particularly when compared to the 55% "hit rate" for county students from pre-kindergarten through 12th grade who were referred for special education evaluations in the year prior (2004-2005) to the district's implementation of the PIT program. This high "hit rate" has both positive and negative implications. The good news is that the special education testing was generally useful and confirmed PIT assumptions—that the student had special needs requiring services beyond those typically provided by general education teachers. However, as "students with very severe deficits are readily identifiable in any school," this high hit rate raises concern that the students referred for special education testing perhaps should have been tested earlier (Kovaleski & Glew, 2005, p. 19). These students may have experienced an unnecessary delay in receiving necessary services due to the PIT process. Future research should examine whether the time lag in services is detrimental to those students referred to PITs and then later found to qualify for services.

Regarding competence-enhancing conditions, the majority of PITs (61%) proposed intervention ideas that were new or substantially modified from those

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previously implemented by teachers. A primary goal of these teams is to provide teachers with solutions to address student needs, these teams appeared to be achieving that aim (Kampwirth, 2003; Pugach & Johnson, 1989). In contrast, about 14% proposed no new interventions, which is problematic. That noted, intervention novelty—PIT competence-enhancing conditions—did not guarantee positive team outcomes. A trend was found between competence-enhancing conditions and intervention utility, supporting the notion that intervention novelty is an important component of the PIT process. However, contrary to our hypothesis, no significant relationship was found between competence-enhancing conditions and PIT-perceived student progress. Therefore, although teachers receiving new or meaningfully improved intervention ideas from their PITs tended to implement them for longer durations, students did not necessarily realize gains under these conditions.

There are a variety of possible explanations for this finding. First, PIT-suggested interventions may have had low levels of acceptability; regardless of the novelty or potential usefulness of interventions proposed by the PITs, many teachers may have found them to be incompatible with their existing routines and the day-to-day demands of their class (Eckert & Hintze, 2000; Telzrow & Beebe, 2002). Additionally, in their first year of implementation, PITs may have lacked the capacity to provide teachers with empirically-supported and targeted intervention ideas. In addition, the PIT-proposed interventions may have been vague with little detail on how or what to implement, making it difficult for teachers to execute them (Wilson et al., 1998). Similarly, with more complex novel interventions, teachers may not have received the in-class modeling and/or more direct training necessary to intervene with the target student(s) effectively

(Lane et al., 2003; Sterling-Turner et al., 2002). Logistical constraints (e.g., school support, availability of human or material resources) might also have impacted implementation. All three of these factors—teacher acceptability, teacher knowledge and understanding of the proposed interventions, and logistical issues—can affect treatment integrity and, ultimately, student progress (Noell et al., 2005; Telzrow & Beebe, 2002).

Study 1 results provide insight into the types of problems that PITs may be better at addressing. That is, PITs focused on non-academic primary goals were more likely to offer more sustained and useful interventions to teachers and to have students experience progress. Contrary to expectations, PITs seem better equipped to aid teachers with students presenting with non-academic difficulties than those with purely academic problems. This may be a product of the multidisciplinary nature of the teams; on the PITs, teachers share their concerns about the referred students with individuals from different disciplines (e.g., school psychologists, speech-language pathologists) who can then offer intervention ideas from their areas of expertise. Teachers are explicitly trained in the areas of instruction and academic intervention, and thus likely have tried a wide variety of interventions with students with primarily academic difficulties prior to referring him/her to the PIT. Accordingly, PITs may be limited in the value they can add with academic referrals. Moreover, these children may be the very students who require the socioemotional or medical services beyond those available in the general education classroom to make progress (Kovaleski & Glew, 2005; Marsten et al., 2003; Rock & Zigmond, 2001).

Study 1 provided a portrait of the PIT process at the elementary school level. By examining a random sample of PIT records across an entire school district, we identified

the types of students and referral issues commonly presented to PITs, the variety of interventions employed, and the frequency of subsequent referrals for special education testing. Additionally, Study 1 revealed a trend between intervention novelty and team outcomes. With a larger sample, this relationship may have been stronger. Moreover, Study 1 was conducted in the first year of the district's adoption of the PIT program. As effective systems-level change in the schools can take anywhere from three to five years, the link between intervention novelty and team outcomes may be greater once the program has been in place for a few years (Rosenfield, 1992).

Accordingly, further examination of the relationship between intervention novelty and PIT outcomes is warranted. That noted, one can infer from the Study 1 findings that teachers need PITs to do more than provide them with novel intervention ideas to help them to teach challenging students. However, using records data alone, the experience of teachers could not be captured in Study 1. A study involving teachers' perspectives seems critical, as it would inform the field about the PIT components that teachers perceive as useful and important to their students as well as their professional development. Thus, Study 2 was undertaken with the aim of obtaining a more in-depth understanding of the PIT process from the perspective of those individuals who turn to PITs for help and support—the teachers.

CHAPTER V

STUDY 2 METHODS

Context

As noted previously, Study 2 was conducted in the same school district as Study
1. However, data collection for Study 2 began following the pilot year (2005-2006) of the
district's implementation of the PIT program. Specifically, Study 2 was part of a larger
study that began in the spring of 2007, during the second year of the district's
implementation of the PIT program. Data were again collected during the 2007-2008
school year, which corresponded with year three of the district's PIT program
implementation.

Participants and Procedures

Subsequent to Institutional Review Board approval from both the University of
Virginia and the district under study, the researchers solicited district elementary school
teachers for participation in this study. The study was conducted in 14 of the 16 schools
in the district. Forty-one consented teachers met criteria for inclusion in the study.
However, three teachers dropped out of the study before the final survey. One teacher
quit teaching, one took a leave of absence due to a family emergency, and another chose
not to continue after the first survey due to her workload. The participants consisted of 38
elementary school teachers. All but one of the teachers was female. One teacher was
African-American and the rest identified as White.

Procedures

In the spring of the 2006-2007 school year and the fall of the 2007-2008 school year, a member of the research team introduced the study at faculty meetings in 14 elementary schools. After the faculty meeting, consent forms were left with general education teachers, and teachers were informed of the inclusion criteria for the study. The inclusion criteria ensured that the researchers could prospectively follow the teachers through their PIT process from the initial request, through the team meetings, and after the teacher had implemented team-suggested interventions and assessed whether student progress had been made.

Teachers completed three on-line surveys: one prior to their first PIT follow-up meeting, one following the first follow-up meeting, and a final survey at least a month after their completion of the second survey. Participating teachers received compensation for each survey completed. Following their completion of the third survey, teachers participated in a 45-minute semi-structured interview with a member of the research team. They also copied and removed identifying information from the PIT records and provided the records to the researchers for coding.

Measures

Teachers completed three surveys over the course of their PIT involvement. The second survey contained items designed to assess social-contextual conditions of the PIT, including teachers' perceived autonomy-support and satisfaction of the need for relatedness. The third survey contained three items intended to assess teachers' perception of satisfaction of the need for competence and three additional relatedness items. The three relatedness items on the third survey tap a component of relatedness—

namely, team acknowledgment of time and logistical demands on teachers—that the researchers felt would be better assessed later in teachers' involvement in the PIT process. Whenever possible, the researchers used reliable and valid scales in the surveys. However, when necessary, the researchers developed their own scales to measure the desired constructs.

Teacher Surveys

   Perceived competence. To assess teachers' perceptions of satisfaction of the need for competence, teachers completed three researcher-developed survey items, which comprise the Perceived Competence Scale. The three-item scale demonstrated good internal consistency, which is a measure of reliability (Cronbach's $\alpha = .76$). All three items used a 5-point, Likert-type scale ranging from Strongly Disagree (1) to Strongly Agree (5). The following items comprise the Perceived Competence Scale: "The PIT helped me think of new ways of approaching interventions with this child," "Through the PIT process, I improved my ability to teach my student and manage challenging behaviors effectively," and "I would be likely to use this intervention with a child with similar problems in the future." A mean Perceived Competence score was calculated after summing item scores. Higher scores indicated greater levels of teacher perceived satisfaction of the need for competence via the PIT. See Appendix E.

   Perceived autonomy-support. To assess teachers' perceptions of autonomy-support, the researchers had teachers complete the PIT Autonomy-Support Scale, a 10-item version of the Work Climate Questionnaire (Baard et al., 2004). The Work Climate Questionnaire was adapted from two comparable questionnaires: one used to assess patients' perceptions of the degree of autonomy-support they received from their health

care providers (Williams, Grow, Freedman, Ryan, & Deci, 1996; Cronbach's α = .92) and the other to assess students' perceptions of the degree of autonomy-support they received from their college or medical school instructors (Williams & Deci, 1996; α = .96). Baard and colleagues (2004) found the scale to have acceptable validity; the scale correlated .61 with satisfaction of the need for autonomy ($r = .61$; $p < .001$). Two small differences exist among the PIT Autonomy-Support Scale and the aforementioned instruments. First, the present study's researchers changed the target group/person to fit this study (i.e., PIT instead of manager, doctor, or instructor). Additionally, the researchers dropped five items from the original measure to reduce redundancy. The scale used for the current study demonstrated high internal consistency (Cronbach's α = .92). After reverse scoring items worded in the negative direction, item scores were summed and a mean obtained to yield a mean PIT Autonomy-Support Scale score. Higher scores indicated greater levels of teacher perceived autonomy-support via the PIT. See Appendix F.

Perceived relatedness. Two scales measuring teachers' perceptions of satisfaction of the need for relatedness were used. The first scale, titled the PIT Relatedness Scale, was included on the second survey completed by teachers. This eight-item scale was drawn from the relatedness subscale of the Psychological Needs Met at Work measure (Deci & Ryan, 1985). Acceptable internal reliabilities of .84 and .79 have been demonstrated for the scale in previous studies (e.g., Cross & Wyman, 2006; Deci et al., 2001). The internal consistency of the scale in this study was good (Cronbach's α = .79). The wording of the original instrument was modified to fit this study (e.g., "people at work" was changed to "people on my PIT team"). Respondents used a 7-point, Likert-type scale ranging from Not at All True (1) to Very True (7). Teachers were asked to rate

how accurately the eight statements characterize their respective PIT experiences. Items include: "People on my PIT team care about me" and "I really like the people I worked with during the PIT meeting." After reverse scoring items worded in the negative direction, item scores were summed together and a mean obtained to yield a mean PIT Relatedness Sale score. Higher scores indicated greater levels of satisfaction of the need for relatedness via the PIT. See Appendix G.

The second scale, titled the Awareness of Teacher Workloads, was included on the third teacher survey. This scale was used in a piloted survey in 2005-2006, and Cronbach's alpha approached .70. In the current study, the scale demonstrated low but adequate internal consistency (Cronbach's $\alpha = .67$). Respondents used a 5-point, Likert-type scale ranging from Strongly Disagree (1) to Strongly Agree (5) to complete the three-item, researcher-developed scale. Items include "I received sufficient assistance from PIT support personnel to implement the intervention(s) generated by the PIT," "It has not been difficult to use the intervention(s) generated by the PIT and still meet the needs of other children in my classroom," and "The intervention(s) generated by the PIT have not been practical in the amount of time required for record keeping." After reverse scoring items worded in the negative direction, item scores were summed together and a mean obtained to yield a mean Awareness of Teacher Workloads Scale score. Higher scores indicated greater levels of satisfaction of the need for relatedness—specifically, PIT recognition of the demands on teachers. See Appendix H.

Interviews

The researchers conducted semi-structured interviews with participating teachers to gain qualitative information on their experiences with the PIT on which they

completed survey items as well as their general perceptions of PIT functioning. The interview questions mirror the survey items assessing teachers' perceptions of team satisfaction of their basic needs and include competence questions (e.g., "Do you feel the PIT process helped you to be a better teacher in any way? Does it have potential to help teachers become more skilled?"), autonomy-support questions (e.g., "Were there any recommended interventions that you agreed to do but then did not implement in the classroom?"), and relatedness questions (e.g., "Were there aspects of the PIT process that helped you to feel more connected to/supported by school staff?"). The interviews will be used to illustrate the quantitative findings.

Records Review and Coding

The researchers collected teachers' PIT records and applied the coding system developed for Study 1 to assess the presence of intervention novelty and team outcomes (i.e, PIT-perceived progress, intervention utility).

<center>Missing Data</center>

Of the 38 teachers, one teacher did not provide the researchers with PIT records and thus lacked intervention novelty and team outcome data. He was excluded from the study. Four teachers provided records without data on PIT-perceived progress and were also excluded. The remaining 33 teachers included in the quantitative analysis were similar in composition to those teachers excluded from the study. They did not differ with regard to years of teaching t (39)= .418, p=.60) or grade taught χ^2 (5, $N = 41$) = 6.075, p = .30. Data on whether teachers' PIT-referred students received special education evaluations were available for 38 of the teachers. There were no differences among the 33 teachers included in the study and those excluded with regard to whether their students received

special education evaluations χ^2 (1, $N = 38$) = 342, p = .56. The sample size varies by one to two teachers depending on the analyses, due to scales missing for individual teachers. The sample size is indicated in the tables.

Data Analysis

First, descriptives of participating teachers, their PIT experiences, and their referred students were examined. Second, Pearson correlation coefficients were calculated to evaluate the relationship between intervention novelty and three dependent variables—teacher perceptions of increased competence (i.e., Perceived Competence Scale score) and team outcomes (i.e., PIT-perceived progress and intervention utility). The interrelationships between the four SDT dependent variables (perceived competence, autonomy-support, relatedness, and awareness of teacher workloads) were examined using Pearson correlation coefficients as well. Third, multivariate regression analyses were run with the two dependent team outcome variables. Specifically, intervention novelty, PIT Autonomy-Support, PIT Relatedness, and PIT Awareness of Teacher Workloads were entered in blocks as predictors of PIT-perceived progress and intervention utility. Entering the variables in blocks showed how much additional variance was accounted for by each block.

CHAPTER VI

STUDY 2 RESULTS

Study Descriptives

Demographic data on the students referred to PITs are presented to provide a

context for teachers' PIT experiences. The majority of referred students were male

(64%), Caucasian (70%), and in lower grades (i.e., 67% were in kindergarten or first

grade). The PITs identified academic issues as a primary goal for 61% of the referred

students, meaning that a non-academic concern was targeted for over one-third of the

PIT-referred students. Inattention was a primary goal for 30% of the referred students,

and 15% were identified as having noteworthy social-emotional difficulties.[2]

Table 10
Student and PIT Descriptives.

Variable	*N*	Percent of Sample
Gender		
Male	21	63.6
Female	12	36.4
Race		
White	23	69.7
African-American	5	15.2
Mixed	3	6.1
Other	2	9.1
Grade		
Kindergarten	12	36.4
First	10	30.3

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[2] PITs sometimes listed multiple primary goals for referred students. Accordingly, the percentages do not add up to 100%.

Second	5	15.2
Third	4	12.1
Fourth	--	--
Fifth	2	6.1

Teachers varied in their years of teaching. Approximately 18% were in their first year of teaching, 15.2% had between one and five years of experience, 33.4% had between six and 15 years of experience, and 33.3% had 16 or more years of experience.

As shown in Table 11, teachers ranged widely in their perceptions of whether their competence as teachers was enhanced via PIT-involvement (SD = .76, *Min*: 1.33, *Max*: 4.33). Overall, teacher ratings fell between "neutral" and "agree" in terms of their experiences of competence enhancement (M = 3.40). Although 39% felt the process had boosted their ability to help the referred child and other challenging students, 18% of teachers did not perceive the PIT process as competence-enhancing. Teachers also varied in their perceptions of PIT autonomy-support (SD = .99, *Min*: 3.00, *Max*: 7.00). Teachers generally felt that the PIT climate supported their independence and offered them choices (M = 5.64). In fact, the overwhelming majority of teachers (94%) had ratings that were between "neutral" and "strongly agree" in terms of their experiences of autonomy-support.

Teachers were generally neutral to positive with regard to their experiences of relatedness on PITs (SD = .75, *Min*: 3.75, *Max*: 7.00). Overall, teachers agreed that PIT members were friendly and caring (M = 6.09). Teachers varied in their perceptions of whether the PIT seemed aware of the daily demands on them (SD = .84, *Min*: 1.67, *Max*: 5.00). Some teachers felt that PITs were unrealistic in their expectations (*Min*: 1.67). Others felt that the team suggested practical interventions and provided sufficient

assistance (*Max*: 5.00). Overall, teacher ratings fell between "neutral" and "agree" in

terms of PIT acknowledgement of the time and logistical constraints on teachers (*M* =

3.79).

Table 11
Descriptive Statistics

	Mean	Std Dev	Range
1. Years of teaching	3.55	1.8	1.00 – 6.00
2. Intervention novelty	2.36	.86	0.00 – 3.00
3. Perceived competence	3.40	.76	1.33 – 4.33
4. Autonomy-support	5.64	.99	3.00 – 7.00
5. Relatedness	6.09	.75	3.75 – 7.00
6. Awareness of teacher workload	3.79	.84	1.67 – 5.00
7. Loss of satisfaction from teaching	4.21	.69	2.75 – 5.00
8. PIT-perceived progress	2.15	.61	1.00 – 3.00
9. Intervention utility	1.73	.87	0.00 – 3.00

Prereferral intervention teams varied in their success in meeting referred children's

primary goals, with some referred students making minor to no progress (*Min*: 1.00) and

others students meeting or exceeding their goal (*Max*: 3.00). Overall, PITs felt that

referred students made promising progress (*SD* = .61, *M* = 2.15). With regard to

intervention utility, there was considerable variability in whether teachers experienced

PIT-suggested interventions as sustainable and useful (*SD* = .87, *Min*: 0.00, *Max*: 3.00).

Generally, recommended interventions were perceived as having modest to medium

utility (*M* = 1.73).

Correlational Findings

Table 12 shows the intercorrelations among variables. Contrary to what was

expected, the Pearson correlation between intervention novelty and teachers' perceived

competence was not significant (*r* = .18, *p* = .31*)*. Additionally, teacher perceptions of

their own competence in teaching challenging students were unrelated to team outcomes.

The Pearson correlations between intervention novelty and team outcome variables—

PIT-perceived progress and intervention utility—were in the expected direction ($r = .37$,

$p < .05$ and $r = .42$, $p < .05$, respectively). On teams with higher levels of intervention

novelty, referred students were more likely to show progress and PIT-suggested

interventions were more likely to be sustained and perceived as useful. The team outcome

variables were not significantly interrelated, which suggests that they are distinct

outcomes of the prereferral process. See Table 12.

Table 12
Correlations among independent and dependent variables

	1	2	3	4	5	6	7
1. Intervention novelty	1						
2. PIT-perceived progress	.37*	1					
3. Intervention utility	.42*	.17	1				
4. Perceived competence	.18	.26	.07	1			
5. Autonomy-support	.01	.24	-.08	.62**	1		
6. Relatedness	-.12	.35*	-.04	.21	.65**	1	
7. Awareness of teacher workloads	.07	-.13	-.07	.59**	.56**	.32$^+$	1

$^+p <.10$, *$p< .05$, **$p< .01$

Pearson correlation coefficients indicated significant interrelationships among the SDT

dependent variables. Although interrelated, the size of the correlations suggests that these

SDT variables were distinct outcomes (r ranges from .56 to .65). Of note, the correlations

showed no significant relationship between perceived competence and relatedness; there

was no significant link between teachers' sense that they had gained in their ability to

help challenging students and their experience of caring and camaraderie on the PIT.

Additionally, the correlation between relatedness and awareness of teacher workloads

approached significance ($r = .32$, $p = .07$). The correlation size indicates a modest

relationship between these two variables. The results suggest that the two are linked;

teachers' perceptions that they are cared for by PIT members are related to their sense

that the team recognizes their unique workloads. That noted, the size of the correlation

indicates that these variables, though similar, are distinct." See Table 12.

Regression Findings

    Intervention novelty, SDT variables, and team outcomes. Table 13 shows the

results of the hierarchical multiple regression analyses, with PIT-perceived progress and

intervention utility regressed on intervention novelty, autonomy-support, relatedness, and

awareness of teacher workloads. The results indicate that intervention novelty,

relatedness, and team awareness of teacher workloads predicted higher levels of PIT-

perceived progress. However, autonomy-support was not predictive of team-perceived

progress. As a group, the predictors accounted for 41% of the variance in the team's

perception that students' primary goals were addressed. As expected, intervention novelty

explained a substantial portion of the variance in progress, accounting for 14% of the

variance. When taking into account teacher experiences of relatedness, autonomy-

support, and PIT awareness of teacher workloads, teams providing teachers with

substantially newer and modified intervention ideas were more likely to show progress

($\beta = .44$, $p < .01$). Relatedness explained an additional 11% of variance. When taking into

account intervention novelty, autonomy-support, and PIT awareness of teacher

workloads, teams on which teachers felt more relatedness were more likely to show

progress ($\beta = .41$, $p < .05$). A significant and negative Beta for team awareness of teacher

workloads was found, which explained an additional 11% of the variance in PIT-

perceived progress. This finding runs counter to expectations; the negative value of the Beta suggests that when taking into account intervention novelty, autonomy-support, and relatedness, teams with greater awareness of teacher workloads were less likely to show progress ($\beta = -.40$, $p < .05$).

In the second set of hierarchical multiple regression analyses, only intervention novelty was found to predict intervention utility. When taking into account autonomy-support, relatedness, and team awareness of teacher workloads, interventions were more likely to be sustained and seen as useful on teams providing substantially new or modified intervention suggestions ($\beta = .45$, $p < .05$). Intervention novelty explained 18% of the variance in intervention utility. Autonomy-support, relatedness, and awareness of teacher workloads were not predictive of intervention utility.

Table 13

Regression Analysis for Variables Predicting Team Outcomes

Predictor variable	With All Variables Entered	At Each Step	
	β^a	R^2 change	β^a
PIT-Perceived Progress			
Step 1. Intervention novelty	.44*	.14*	.37*
Step 2. Autonomy-support	.19	.05	.23
Step 3. Relatedness	.41*	.11*	.43*
Step 4. Awareness of teacher workloads	-.40*	.11*	-.40*
Intervention Utility			
Step 1. Intervention novelty	.45*	.18*	.42*
Step 2. Autonomy-support	-.14	.01	-.12
Step 3. Relatedness	.10	.01	.10
Step 4. Awareness of teacher workloads	-.08	.00	-.08

Note. [a] standardized beta coefficient.
* $p < .05$, **$p < .01$

CHAPTER VII

DISCUSSION

Study 2 Discussion

The results of Study 2 provide new insight into teacher experiences of prereferral intervention teams. The findings highlight the two-fold role of PITs—to provide teachers with expertise *and* empathetic support. Study 2 results suggest that prerereferral intervention teams not only offer teachers new intervention ideas but do so in a warm, supportive atmosphere. Analyses showed that team provision of modified or new intervention ideas was consistently associated with team outcomes. PITs that introduced novel interventions to teachers were more likely to have referred students who made progress toward their referral goal, as determined from PIT record review.

The study also showed that some dimensions comprising self-determination theory were more important than others in predicting PIT outcomes. Teacher experiences of relatedness on the PITs were linked to student progress. In other words, PITs on which teachers experienced more connection and warmth from team members tended to have students who made progress toward their referral goal. This suggests that teachers' interpersonal experiences of their team matter for student outcomes. Importantly, relatedness was the only SDT dimension that found such a link. Unexpectedly, PITs in which teachers felt that the team was sensitive to and aware of their workloads were less likely, not more likely as hypothesized, to have referred students who made progress. Also unexpected was the finding that teachers who received new intervention ideas were

not more likely to report greater competence in addressing the needs of challenging

students, compared to teachers who did not receive new intervention ideas.

Intervention Novelty and Student Progress

The present study provides a new perspective on the importance of intervention

novelty for student progress on referral goals. Consistent with our hypotheses, on teams

providing teachers with meaningfully modified or new intervention ideas, referred

students were more likely to show progress, as recorded on PIT records. Regression

analyses showed that teams' ability to provide teachers with novel ideas for intervening

with students accounted for 14% of the variance in student progress. This finding is not

unexpected given the primary role of PITs—to assist classroom teachers in modifying

instruction or classroom management for students experiencing academic or behavioral

difficulties (Burns & Symington, 2002; Fuchs et al., 1990; Flugum & Reschly, 1994).

This finding corroborates those of previous studies, in which PITs provided teachers with

new intervention ideas, which resulted in student gains in targeted areas such as

reductions in problem behaviors and increased levels of academic performance (Fuchs &

Fuchs, 1989; Kovaleski et al., 1999; McDougal et al., 2005).

SDT Dimensions

Of the SDT dimensions measured, only relatedness predicted PIT-perceived

progress. The study showed that teachers who experienced their teams as caring and

supportive were more likely to realize success in addressing referred students' primary

goals. These findings corroborate previous SDT research, which found a link between

employee performance and satisfaction of the need for relatedness (Baard et al., 2004).

Previous PIT studies produced similar findings; when teachers felt uncared for and

unsupported, they often grew frustrated, ultimately reducing their motivation to implement suggested interventions and reducing the likelihood of team effectiveness (Etscheidt & Knesting, 2007; Slonski-Fowler & Truscott, 2004). The present study extends our understanding of the influence of social-contextual factors on team, teacher, and student success. Specifically, the results highlight the importance of PIT provision of social support over and above other SDT dimensions. This support appears to be more important to teachers and to student progress than a team environment that provides choices and fosters teacher autonomy. That is, while there was no significant association between teachers' experiences of PIT autonomy-support and student progress, teachers who perceived that their teams cared for them and acknowledged their hard work were more likely to have students make progress on their primary referral goal.

Unexpectedly, there was a negative relationship between PIT awareness of teacher workloads and student progress, suggesting that teams with greater awareness of teacher workloads were less likely to have students show progress toward their referral goal. That is, when teams took into account teachers' workloads and offered less burdensome and simpler intervention suggestions, it seems that students were likely to make less progress. In contrast, teachers who received more labor- and time-intensive intervention ideas from their teams were more likely to see their students improve, as indicated in the PIT records. The finding of a negative relationship between PIT awareness of teacher workloads and student progress may be related to another surprising result from Study 2: there was no significant relationship between intervention novelty and teachers' perceived competence.

A unifying explanation for these two findings, albeit speculative, is that teachers may find the workload trade-off required for student progress too great to bear. Effective interventions for challenging students often require a tremendous amount of time, labor, and energy (e.g., Conduct Problems Prevention Research Group, 1992; Hinshaw, Klein, & Abikoff, 1998). At times, the implementation of such interventions may make it difficult to attend to other students and classroom responsibilities. Thus, one might speculate that even when receiving intervention suggestions from their PITs that prove effective, general education teachers may resent the effort required, viewing the burden as incompatible with the daily demands of their classroom. Accordingly, they may not view this addition to their intervention repertoire as competence-enhancing; in fact, due to the labor required, these teachers may hope to never use these interventions again, regardless of student need. Future research is needed to further examine the potentially complex relationship between sensitivity to teacher workload and PIT interventions.

Intervention Utility

On PITs with higher levels of intervention novelty, PIT-suggested interventions were more likely to be sustained and perceived as useful. Regression analyses showed that teams' ability to provide teachers with novel ideas for intervening with students accounted for 18% of the variance in intervention utility. This finding is consistent with our initial hypothesis. On PITs, teachers may have sought new ways of understanding and intervening with their challenging students; when they received novel suggestions, they tended to view the interventions as more useful and sustainable and to implement them with fewer modifications, as compared to teachers on PITs with lower levels of intervention novelty.

Unexpectedly, SDT dimensions of autonomy-support and relatedness did not predict intervention utility. It was anticipated that a team atmosphere in which teachers are encouraged to ask questions, are provided with choices, and experience the team as warm and supportive would lead to more acceptable, useful, and sustainable intervention ideas. However, findings did not support this conclusion. Although autonomy-supportive and nurturing team environments have been shown to foster teams' identification of more targeted and helpful interventions (Etscheidt & Knesting, 2007; Pugach & Johnson, 1996), Study 2 results indicate that PITs with these characteristics did not necessarily provide teachers with more useful intervention ideas. The present findings suggest that the team atmosphere may be less relevant to the intervention selection process than previously thought. Rather, these results provide some indication that teachers' interpersonal experiences on their PITs help to satisfy a different need for teachers—the need to have others bear witness to their frustrations and efforts and, ultimately, to feel cared for and supported.

Overall Discussion

Using the combined strengths of a prospective design and the self-determination theory (SDT) model, the findings of Study 1 and 2 offer a new understanding of teacher experiences of the prereferral intervention team process. Study 1 highlighted the variability in intervention novelty across PITs, as measured by PIT records review. Charged with providing teachers with solutions to address student needs, 61% of PITs did just that, offering teachers new intervention ideas or suggestions as to how to substantially modify existing interventions. However, about 14% of teams proposed no new interventions, which is a startling finding. It suggests that the referring teachers left

their teams without any new ideas for helping their struggling students. Study 1 also showed a link between intervention novelty and intervention utility. Teachers on PITs with higher intervention novelty were provided with more useful intervention ideas, whereby the teachers were less likely to alter the interventions proposed by the PIT than their counterparts on PITs with lower levels of intervention novelty. Additionally, Study 1 findings suggest that PITs may be better equipped to aid teachers with students presenting with non-academic difficulties than those with purely academic problems. That is, when taking into account intervention novelty, PITs focused on non-academic goals were more likely to offer interventions that were unaltered by teachers and to have students show progress than PITs addressing referral goals of a purely academic nature.

Study 2 took the examination of teachers' PIT experiences a step further. Using SDT, Study 2 showed that teachers may benefit from not only expertise but also interpersonal connection and warmth from their PITs. Teams that provide that expertise to teachers by offering them novel intervention ideas were more likely to have referred students who made progress toward their referral goal. Additionally, teachers who perceived their teams as warm and caring—whose need for relatedness was better satisfied by their PIT—tended to have students who progressed in meeting their referral goal. Satisfaction of this basic need for relatedness stood out as a significant predictor over the other SDT dimension of autonomy-support. Implications are that teachers may need more than just intervention ideas from PITs; they may benefit from emotional support from their colleagues as well. Unexpectedly, PITs that seemed supportive of teachers in another way—namely, that were more aware of teacher workloads—were less likely to have students make progress on their referral goal. It is possible that team

sensitivity to teachers' daily classroom demands proposed less labor-intensive interventions for teachers, possibly limiting the potential for student change.

Students in the Prereferral Process

Across the two studies, the majority of referred students were male and in lower grades. A large percentage of children were kindergarteners. This high number of referrals in the lower grades suggests that teachers in this district are using PITs as intended; they are identifying students with significant learning and behavioral difficulties during their first years of schooling. Consistent with the current emphasis on early intervention, PITs and teachers appear to be implementing remedial and preventive interventions in the general education classroom early in these children's academic careers, enabling the children to function in the least restrictive environment and possibly helping to prevent their burgeoning problems from escalating.

Teacher Experiences of the PIT Process

Studies 1 and 2 showed that teachers' experiences of intervention novelty, autonomy-support, and relatedness varied. Whereas many teachers participated on PITs that offered new or substantially modified intervention ideas, some teachers participated on teams that proposed no new ideas and/or advised them to continue using the interventions they had already been utilizing prior to PIT involvement. Similarly, whereas some teachers experienced the teams as warm, helpful, and supportive, others found their PITs to be out-of-touch and, to some degree, invalidating.

This variability in teachers' experiences was evident in their interviews. One teacher described her experience of PITs as incredibly supportive:

It makes me feel like I know there is someone else outside my door

(laughs)—that I'm not alone. Cause I think sometimes when you're

teaching, you just feel like you're all alone…And so that's nice to

know that there are other people out there willing to help. And it's

not a threatening way, I never feel like, well you know you should be

doing this. It's never brought to me that way.

Another teacher described her frustrations with the PIT, noting:

It's really a process where a lot of teachers avoid because it

creates more work, instead of creating more support. I have had

experiences [of PITs] in the past where I've said that….I don't feel

supported because the process is supposed to be about the teacher

and the teacher helping the student, not necessarily about fixing the

kid yet. You're supposed to be helping me figure out how to work

with this kid and I feel like we go to these meetings and it just

creates more stuff for us to make and do and keep track of and then

nobody ever comes back and checks on us or asks us how it's

working.

Intervention Novelty

Fundamentally, the PIT serves as a problem-solving forum to help classroom

teachers to define goals and develop individualized plans of intervention for referred

students (Burns & Symington, 2002). The present study corroborated previous findings

(e.g., Fuchs & Fuchs, 1989; Kovaleski et al., 1999; McDougal et al., 2005),

demonstrating a strong association between intervention novelty and student progress.

Study 2 showed that teams providing classroom teachers with novel ideas for addressing student needs were more likely to have students that made progress on referral goals, as measured by coding of PIT records review This study adds to existing research by demonstrating a link between intervention novelty and intervention utility. In Studies 1 and 2, teachers on PITs which offered them new ideas generally implemented the proposed interventions with fewer modifications than teachers on PITs with lower levels of intervention novelty. It seems that teachers who did not receive novel recommendations or modifications for existing interventions perceived such aid as less useful and thus were quicker to discontinue or substantially alter these suggested interventions than their counterparts on teams with higher levels of intervention novelty.

Teachers' experiences of intervention novelty on PITs varied and, in turn, so did their feelings about the helpfulness of their teams. In teacher interviews from Study 2, many teachers spoke glowingly of the advice they received from their PITs. One teacher indicated that she had run out of ideas for helping a student and then "had three people [on the PIT] say, 'well, you could do this, this, this, and this,' which I had not thought of—you know, it really energized me." Another teacher described how the team helped her address a student's emotional needs and noted, "After we started the PIT process…it was almost like I could just sit and watch him change."

On the other hand, some teachers were dissatisfied with the PIT process and expressed frustration with the lack of new or useful intervention ideas. For instance, one teacher stated, "We didn't come up with anything, you know? We just sat there and talked and talked for 45 minutes." Other teachers bemoaned the quality of the interventions suggested. A veteran teacher described a negative PIT process, noting that,

"The interventions…[are the] part of the process that I feel is totally useless, because…very seldom have I been through a meeting where they have thrown a new intervention toward me that I have not [already] tried." Some teachers were disillusioned when they felt forced into implementing interventions they doubted would be helpful. One teacher explained, "they give you a strategy that you know is not going to work, but it's just kind of like you've got to do your time, giving it a try, and then going back in saying it didn't work."

The implications are that PIT intervention novelty matters tremendously to teachers and, ultimately, to student progress via the PIT. Teachers participating on teams with higher levels of intervention novelty may help their referred students *and* feel empowered to better serve non-referred students in their classroom. For instance, one teacher spoke of the benefits of intervention novelty on her PIT, noting that "you learn different techniques and different styles and ideas that obviously you didn't know before, or otherwise you wouldn't have gone through PIT." Some teachers who received novel intervention ideas from their PITs went on to use these interventions with other students. On the other hand, when intervention novelty was lacking, as one teacher noted, it sometimes felt as if the PITs "just schedule[d] a new meeting."

Intervention Novelty and Student Progress

Studies 1 and 2 produced discrepant findings with regard to the relationship between intervention novelty and student progress. Specifically, intervention novelty was linked to student progress in Study 2, but not in Study 1. In part, this discrepancy may be due to the timing of the two studies. Study 1 was conducted during the pilot year of the district's implementation, which is in the initial stages of organizational change. Study 2

occurred across years two and three of PIT use in the district. PIT adoption by schools was likely more complete when Study 2 was conducted, with greater teacher understanding of the PIT process and more administrative support and resources. Accordingly, Study 1 may have captured the PIT process during its start-up phase, with the results potentially understating the associated positive outcomes of a more mature program.

The results of Study 2 likely better characterize the PIT process. This supposition is supported by earlier research on program evaluations. Researchers advise that program maturity is an important consideration in assessing program effectiveness and encourage using a long-term approach that tracks the program over relevant stages of implementation (Chatterji, 2005; Kane, 2004). Accordingly, future research on PITs should re-evaluate the relationship between intervention novelty and team outcomes in later years of the program's existence to assess the extent to which program maturity affects the link between intervention novelty and student progress.

Intervention Novelty and Teachers' Perceived Competence

Although intervention novelty was found to be positively correlated with student progress in Study 2, it was not linked to teacher perceived competence. One might conclude from this that teachers do not experience an increase in their sense of competence from team provision of new or significantly modified intervention ideas alone. This finding may be best understood in the context of the current demands on teachers. Specifically, despite increased accountability for teachers, time and support for teachers are still scarce (U.S. Department of Education, 2004). Accordingly, teachers are forced to conduct what amounts to a cost-benefits analysis to determine whether or not to

implement specific individualized interventions. Is the prescribed treatment likely to lead to student change? Even if effective, will the effort required result in a net gain? As one teacher stated, "Sometimes the interventions aren't worth the time it takes to implement them."

In part, teachers may have felt that the labor demands required of them to implement PIT-suggested, effective interventions outweighed the benefits of the student progressing. Thus, although teachers sought intervention novelty from their teams, teacher interviews suggest that they also wanted interventions that were suited for the classroom setting. To this end, one interviewed teacher applauded her team's willingness to withdraw a complicated intervention suggestion; she noted that the time-intensive nature of the suggested intervention was such that she "probably wouldn't have been able to implement it at all."

We might speculate that intervention labor-intensity and complexity moderate teachers' perceived competence. This assertion is supported by the unexpected finding that teams with greater awareness of teacher workloads were less likely to show progress. That is, teams that provided teachers with less demanding intervention suggestions with regard to record-keeping and implementation tended to realize less student progress than teachers provided with more time-intensive suggestions. This finding indicates that the simple and perhaps more generic interventions were not associated with change and that the most effective interventions were often those that were most challenging for the teacher to implement in his/her classroom. Some teachers acknowledged this in their interviews; for instance, one teacher lamented the logistical obstacles to her implementing complex interventions:

There wasn't any time in my day that I had free that [the referred

 student] was free that I could just pull him aside and it wouldn't

infringe on anybody else's time. That's what became frustrating, is just

the whole time issue…

The findings in Study 2 suggest that teachers may be faced with an unenviable

and unresolvable dilemma. They can implement simpler, less labor-intensive

interventions and perhaps realize less success with the referred student but be able to

devote time to their other students *or* implement a more demanding intervention that

might better address the referred student's difficulties at the potential expense of the

teacher's other students and own well-being. Therefore, even if the teacher were to

effectively implement a PIT-suggested intervention, he/she may not want to use the

intervention again with other students.

Relatedness and Student Progress

The present findings demonstrate that teachers' experience of relatedness on PITs

is linked to student progress through the prereferral process. These results corroborate

those of previous studies (e.g., Athanasiou et al., 2002; Etscheidt & Knesting, 2007) in

that teachers frequently cited feeling cared for as being integral to team effectiveness.

Unexpectedly, whereas relatedness was linked to team outcomes, the other SDT

dimension of autonomy-support was not. This finding is surprising given that previous

research and consultation literature on "best practices" consistently advocate for a non-

hierarchical team environment that privileges teacher input in decision-making

(Kampwirth, 2003; Pugach & Johnson, 1989; Shram & Semmel, 1984; Zins & Erchul,

2002).

It is worth speculating on the likely mechanisms explaining why teachers' satisfaction of the need for relatedness was so vital to PIT success. One possibility is that the team atmosphere may be only minimally relevant to the intervention selection process but particularly important to teacher morale and motivation. When teachers experience their teams as caring, they may feel more group accountability and less isolated in addressing the needs of referred students. This supposition would also explain why a link between autonomy-support and team outcomes was not found. A warm team climate may serve to validate teachers and their efforts, thus recharging and refocusing them to help their referred students to make progress. This assertion is well supported in the SDT literature; SDT holds that motivation is more likely to flourish in contexts characterized by a sense of secure relatedness (Deci & Ryan, 2000; Ryan & Deci, 2002). There is some precedent for this finding in previous PIT research as well. For instance, Athanasiou and colleagues (2002) found that teachers placed such a high value on interpersonal support that they would seek consultation in the future, even if they did not find the interventions suggested by consultants to be effective.

Teacher interviews highlighted their varying experiences of relatedness on PITs. Teachers that felt cared for by their PITs lauded their teams, stating that they "always [got] a lot of empathy and sympathy from people" and were "reaffirmed and reassured by [their] team." In contrast, other teachers felt disconnected from team members. One teacher experienced the PIT process as perfunctory and her team members as unsupportive:

I felt like it was just going through a process…And, whether or not I implemented anything, they didn't care. They had filled out the

paperwork, they had done what was required of them, we had had this

meeting. And then I didn't really hear back from them until we had

our next scheduled follow-up meeting.

Another teacher noted that not only did she not feel supported, she experienced

her PIT as evaluative. She commented, "It felt like I was being incriminated for how I

was teaching. It felt like any time I said something that I was doing someone would say,

'Well, you should have done this' or...'You may say you were doing that, but were you

really doing that?'"

Although teachers appear to want interpersonally supportive PITs, such teams

may not be better equipped to provide teachers with effective intervention ideas. In fact,

teams that are overly focused on satisfying teachers' need for relatedness may actually be

worse at generating sound intervention suggestions. That is, it is quite possible that teams

that are overly caring and egalitarian err by being too democratic. With an unclear

hierarchy, no one serving as the expert, and too much credence given to all suggestions

regardless of the expertise of the contributing team member, such teams may decide on

interventions that, though acceptable to teachers, are less likely to be useful and

sustainable. Such groupthink, described by Janis (1971) as "a mode of thinking that

persons engage in when concurrence-seeking becomes so dominant...that it tends to

override realistic appraisal of alternative courses of action" (p. 43), has been previously

cited as a hindrance to effective decision-making on school-based teams (Gutkin &

Nemeth, 1997). PITs high in relatedness seem particularly susceptible to this

phenomenon, in that they are "highly cohesive...[meet] face-to-face, and confronted with

problems that are high in ambiguity" (Gutkin & Nemeth, 1997, p. 201). Implications are

that a balance between PIT intervention novelty and relatedness is necessary; teachers

need to feel connected to and supported by their PITs, but not at the expense of receiving

sound and potentially effective intervention ideas. As one teacher noted, when this

balance was present:

> [It] made it very easy for me to go to all of these other people that now
>
> knew more than my name, and [knew me] in this closer context and I
>
> can go in and specifically say, "This is what I need. This is what I don't
>
> have. Can you help me?"

CHAPTER VIII

LIMITATIONS AND IMPLICATIONS

Limitations

Limitations of Study 1 and 2 need to be considered when interpreting the findings.

The study's conclusions are limited by several methodological issues, including the

reliance on school records and teacher self-reports, as well as characteristics of the

samples.

Records Review

The absence of observational measures may be considered a limitation of both

Study 1 and 2. The researchers were unable to observe PITs or referred students. Instead,

the researchers relied on PIT-completed records to assess the presence of competence-

enhancing conditions (i.e., intervention novelty) and team outcomes. No outside observer

sat in on PIT meetings to discern whether the proposed interventions were novel or

substantial modifications to existing interventions. Although a reliable system for coding

the records was used, it is possible that PIT documentation may not have been

representative of the actual team process (e.g., some teams may have completed the

forms more thoroughly than others) or team outcome (e.g., team ratings of referred

students' progress may have been influenced by the majority opinion of the group).

Additionally, there were no observational measures to verify whether teachers

implemented suggested interventions with integrity or whether students truly made

progress on referral goals. The inclusion of more objective measures would strengthen

the findings. Future research on PITs may wish to use direct observation of the team process and/or student functioning. Nonetheless, to reduce reliance on team completion of records to measure student progress, the researchers reviewed the PIT record data and made a more holistic, global judgment of whether progress was made; that is, they took into account all information in a set of records and combined their rating with the team's ratings to code student progress. The multi-informant nature of this measure thus increases confidence in the findings.

Teacher Self-Reports

SDT domains—teachers' satisfaction of their basic needs for competence, autonomy, and relatedness—were measured by self-report. Response bias or other unmeasured confounds, such as personality, may have influenced the way in which teachers completed survey items. For instance, a teacher with a more Pollyannish outlook might provide an assessment of the team experience that was far more positive than another less positive teacher's review of the same experience. Thus, the use of self-report may be considered a limitation of the present study. Future research might choose to develop a standardized observation system using outside observers to objectively assess how well teams supported teachers' autonomy and relatedness needs. That noted, for Study 2 the researchers were interested in teachers' perceptions of the teams. SDT concepts are based on individual perception; accordingly, to gain information on teachers' subjective experiences of their PITs, self-report was the most appropriate methodology.

Teacher Traits

As noted above, teacher personality traits were not considered in this study. It is quite possible that a teacher's disposition might have an effect on his/her experience of the PIT process and student outcomes. To this end, teachers' perceived self-efficacy— their judgments of their ability to bring about desired outcomes of student engagement and learning—has been previously shown to be related to teachers' persistence, enthusiasm, commitment and instructional behavior, as well as student outcomes such as achievement, motivation, and self-efficacy beliefs (e.g., Allinder, 1995; Tschannen-Moran & Hoy, 2001). Accordingly, future research on PITs may wish to examine teacher self-efficacy prior to a teacher's involvement with the PIT and its relation to team outcomes, student progress, and teacher experiences of the team process.

Sample Composition

Factors related to sample size and the selection of participants may be a limitation of Study 2. Teacher consent was obtained at the outset of a PIT referral. They were asked to participate in three surveys and one interview. The time-intensive nature of the study may have discouraged many teachers from participating, leading to a small sample size. Additionally, the time and effort required of teachers may have selected out teachers experiencing higher levels of stress, thus restricting the types of teachers in the sample. Teachers with higher levels of stress may not have been willing to take on an additional responsibility of joining the study. While teachers' stress levels may be related to their respective classrooms or lives outside of school, they may also be by-products of the school environment. Accordingly, teachers from less supportive schools (and likely less supportive PITs) may not have participated in the study, limiting the range of

interpersonal experiences and SDT variability captured by the study. Additionally, the data in Study 1 and the participating teachers in Study 2 were all drawn from a single school district. The sample size and narrow geographic scope of the study limits the generalizability of the findings. Future prospective studies might gather data across multiple school districts and follow more teachers from different school districts through their PIT experience.

Another limitation is the composition of the sample; the sample was predominantly white and female. They were, on average experienced teachers. The homogeneity of the sample thus limits the generalizability of the findings. Minority and male teachers may have far different interpersonal experiences on PITs, perhaps experiencing the teams as more evaluative than their Caucasian and female counterparts, respectively (Aronson & Steele, 2005). Additionally, approximately two-thirds of the referring teachers in this study had taught for over six years. PITs seem to have the greatest potential for enhancing teacher competence with new, less experienced teachers. Novice teachers may be more likely to find PIT-proposed intervention strategies new and be more open to trying strategies with their other students. Accordingly, with a sample comprised of newer teachers, the relationship between intervention novelty and teachers' perceived competence-enhancement may have been significant. Future studies might recruit a less experienced teacher sample and re-examine the SDT dimensions measured in this present study.

Summary and Implications

Summary

Using the self-determination theoretical (SDT) framework as a guide, the aggregated findings of a records review (Study 1) and a prospective study (Study 2) offer a new understanding of teacher experiences of PITs. Most notably, Study 2 points to the significance of teacher experiences of relatedness for student progress. Teachers who felt their teams cared for them and experienced the PIT atmosphere as warm and supportive were more likely to have students make gains on referral goals, as measured by PIT records. The present studies extend previous findings with regard to PITs providing teachers with new intervention ideas or modifications to existing interventions. Study 2 found that teams with high levels of intervention novelty were more likely to have students progress on referral goals. Both Study 1 and 2 showed that, as compared to teachers on PITs with low levels of intervention novelty, teachers on teams that suggested novel intervention ideas or modifications to existing interventions found PIT-suggested interventions more useful. Teachers on teams with higher intervention novelty were less likely to alter the interventions proposed by the PITs, as reflected in PIT records. However, there was considerable variability in intervention novelty across teams. Some PITs provided teachers with no new intervention ideas, which is surprising given that the PITs are primarily tasked with equipping teachers with novel solutions to address student needs (Burns & Symington, 2002). Overall the findings point to the need for PITs to provide both expertise and support to teachers; when trying to serve challenging students, teachers may need not only new ideas but also collegial reassurance and support from their PITs.

Implications

The results of this study highlight strengths of the PIT process as well as areas in which the PIT process can be improved. That is, while many PITs seem to be providing teachers with interpersonal support and useful intervention ideas, other teachers find the process futile and frustrating. The following recommendations are put forward to address many of the current weaknesses of PIT processes; that noted, it is acknowledged that some of these suggestions envision a "best case scenario" in which additional resources would be available to bolster the PIT process.

PIT provision of new intervention ideas or suggestions for modifying existing interventions appears to be important for student progress, yet not all PITs offer novel solutions to teachers. Team provision of new, innovative solutions for addressing student needs is likely to become increasingly important as the Response to Intervention (RTI) approach for identifying learning disabilities gains traction in districts and schools nationally (e.g., Gresham, 2002, 2004; Vaughn & Fuchs, 2003). As teachers gain more experience with RTI, they are likely to become more knowledgeable about individualized interventions; they will therefore need their PITs to provide them with expertise beyond their own. Accordingly, the PIT process may benefit from a systematic check to make sure teachers are not being asked to simply repeat what they have already tried. Additionally, given that some PITs have higher levels of intervention novelty, it might be useful to establish a system for sharing intervention ideas across teams (e.g., via an intervention "blog" or searchable, central database). The Study 1 finding that teams seem to be better able to address non-academic problems suggests that there may be a need to try alternate models for PIT implementation. For instance, it may be useful for each

school to have a few different PITs, each with a different staff composition and area of expertise, such that teachers referring a student with primarily social-emotional concerns would meet with one team, a teacher with a student with primarily academic issues would meet with a different PIT, and so forth.

Study 2 findings indicate that relatedness is also important to teachers. School administrators and PIT leaders need to be informed about the need to create team climates in which teachers feel supported and cared for by their teams. Teachers may need a confidential mechanism to report when their teams are not meeting their expectations. Finally, there is some indication that labor-intense interventions, even when effective, may be too much for teachers to bear. It may be useful for schools to provide other school personnel (e.g., special education teachers, teachers' aides, psychologists) to assist teachers with intervention implementation.

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APPENDICES

Appendix A: Primary Goal for PIT-Referred Students

The following is excerpted from the PIT Records Coding Guide.

Categorizing Behaviors: Please refer to the following list to categorize the goal for the referred student. Note: For speech/language referrals, it is up to the coder's discretion as to whether the issue is Academic or Medical. This should not be an issue for 06-07 PIT records, as the team will have already checked a box to indicate the category they felt was appropriate.

- *Academic*: difficulty following sequential directions; stuck on details, can't move on; disorganized; doesn't know how to begin work; trouble working independently; needs 1:1 support; low achievement
- *Social/Emotional*: conflict resolution; crying; difficulty with transitions; poor adaptability; has no friends; easily frustrated; tantrums; screaming; regressive behaviors; soiling; taking turns; interrupting, dominating conversations; withdrawn; attention-seeking; tattles; self-centered; mood swings; inflexibility
- *Inattention:* easily distracted; doesn't stay on task; short attention span; difficulty focusing; off-task behavior
- *Work Attitude:* Truant; apathetic about school; unmotivated; disinterested; comes late to school; homework completion; doesn't take risks; doesn't complete HW; refuses to complete work
- *Overactivity:* Impulsive; disruptive; difficulty staying in own space; can't sit still; in constant motion; fidgety; grabby; calls out answers; talks too much
- *Aggression/Defiance:* Unkind remarks; disobeys rules; noncompliant; acting out; dangerous behaviors (throwing scissors, breaking things); hitting; angry; inappropriate behavior towards adults (rudeness); hair pulling; pushing
- *Medical:* Lacks fine or gross motor coordination; vision/hearing problems; Not taking medication; health and hygiene; sensory integration difficulties

Appendix B: Intervention Novelty

The following is excerpted from the PIT Records Coding Guide.

12a. Are the proposed interventions novel or substantial improvements on strategies already implemented? (Has the teacher already tried this intervention before, as noted on the initial referral form?)

Scale: 0 = No Intervention Described; 1=Unmodified Intervention; 2= Slightly Modified or Non-Sustained Intervention; 3=Substantially Modified or New Intervention

- Examples of *(1) Unmodified Intervention:*
    - The intervention put forth by the PIT is the same as an intervention listed on the initial referral form
- Examples of *(2) Slightly Modified or Non-Sustained Intervention:*
    - Although the PIT intervention is not exactly the same as an intervention used prior, it is essentially the same intervention with minor modifications
        - For example: "Title I reading group" was used prior to PIT, and now the PIT proposes a "smaller Title I reading group"
        - The child's existing Reading Buddy will meet with the child more often
        - Parent has already been working with the child at home, but now the teacher will call the parent to follow-up.
    - Alternately, the intervention may be novel but not a sustained intervention (i.e., a one-time thing), suggesting that it may not be a substantively impactful new intervention.
        - For example, "Mom takes child to pediatrician to have hearing tested."
- Examples of *(3) Substantially Modified/New and Sustained Intervention:*
    - The intervention is either brand new and different from ones used before, or it is a modified intervention with a substantially new component
    - You, as a coder, feel these are meaningful new interventions or novel, meaningful modifications of previously implemented interventions
        - e.g., Significant and sustained parental component added where there was no parent involvement previously
        - e.g., Child did have peer reading groups previously, but now a Reading Buddy or Reading Specialist will provide support services individually

Appendix C: PIT-Perceived Progress

The following is excerpted from the PIT Records Coding Guide. Codes on these two items will be summed and averaged to produce an index of team outcome for each PIT, with higher numbers reflecting higher levels of team success.

28. Does the PIT feel there has been progress/success on the target goal? (Up through Follow Up Meeting #1) **[Refer to 20.06B, "Evaluate Plan Effectiveness"]** *Scale: 1= Minor progress; 2=Promising progress; 3=Met or exceeded goal.*
Here, simply code based on the boxes checked by the PIT on the form.

29. Does the outcome (quantitative/qualitative) data reflect progress/success on the target goal? (Up through Follow-Up Meeting #1) **[Refer to 20.06B]**
*Note: Coding on this item should be based on your inference. This question is designed to capture those occasions in which the team's marking of the child's progress/success on the target goal (as coded above in #28) is inconsistent with either the quantitative data in the forms or the narrative/qualitative data noted on the forms. For instance, the team may check the box indicating that "promising progress" was made when outcome data suggests otherwise. Also, although we are reviewing qualitative data to score this item, always privilege quantitative data over the qualitative data *
Scale: 1=Not helpful/No improvement; 2=Some improvement; 3=Helpful/Good Improvement
- Examples of *(1) Not helpful/No Improvement*
  o Teacher opinion that the chart was not helpful.
  o "No improvement and needs a therapist."
- *(2) Some Improvement:* The team notes that the child's progress falls short of what they'd like to see.
  o "Although student met goal, he can recognize the words only on the same colored sheet. He is not transferring this knowledge and his reading level remains frustrational at the Late Emergent level."
  o "Met goal on student-selected topic, but classwork still inconsistent."
- Examples of *(3) Helpful/Good Improvement*
  o "Student's writing has improved. She is able to write a short paragraph with sentences on topic and include capitals and punctuation."
  o "PIT intervention helped child" (Teacher perspective)

Appendix D: Intervention Utility

The following is excerpted from the PIT Records Coding Guide.

34b. This section should be completed for *all* PITs. Use any additional Follow-Up meeting forms, starting with Follow-Up Meeting #2 (if it exists). This section is meant to give supplementary data to know if/how the PIT evolved and resolved. Please indicate the intervention status:

- A new behavior and/or academic goal was identified and a new intervention created.
- A plan to discontinue the intervention was created.
- Current intervention continued without changes.
- Current intervention continued with minor changes.
- Current intervention substantially revised or replaced.
- School year ended. No clear indication from forms (i.e., they did not check any of the boxes above) what the current intervention status is.

Appendix E: Perceived Competence Scale

	Strongly Disagree	Disagree	Neutral	Agree	Agree Strongly
1. The PIT helped me think of new ways of approaching interventions with this child.	1	2	3	4	5
2. Through the PIT process, I improved my ability to teach my students and manage challenging behaviors effectively.	1	2	3	4	5
3. I would be likely to use this intervention with a child with similar problems in the future.	1	2	3	4	5

Appendix F: PIT Autonomy-Support Scale

	Strongly Disagree			Neutral			Strongly Agree
1. I felt that my PIT provided me choices and options.	1	2	3	4	5	6	7
2. I was able to be open with my PIT.	1	2	3	4	5	6	7
3. My PIT conveyed confidence in my ability to do well at my job.	1	2	3	4	5	6	7
4. My PIT made sure I really understood the goals of the selected intervention and what I need to do.	1	2	3	4	5	6	7
5. My PIT encouraged me to ask questions.	1	2	3	4	5	6	7
6. I felt a lot of trust in my PIT meeting.	1	2	3	4	5	6	7
7. My PIT answered my questions fully and carefully.	1	2	3	4	5	6	7
8. I have been able to learn interesting new skills through the PIT meeting.	1	2	3	4	5	6	7
9. I did not feel very good about the way my PIT talked to me.	1	2	3	4	5	6	7
10. My PIT tried to understand how I saw things before suggesting a new way to do things.	1	2	3	4	5	6	7

Appendix G: PIT Relatedness Scale

	Strongly Disagree			Neutral			Strongly Agree
1. I really like the people I worked with during the PIT meeting.	1	2	3	4	5	6	7
2. I get along with people on the PIT.	1	2	3	4	5	6	7
3. I pretty much kept to myself during the PIT meeting.	1	2	3	4	5	6	7
4. I consider the people on the PIT to be my friends.	1	2	3	4	5	6	7
5. People on my PIT care about me.	1	2	3	4	5	6	7
6. There are not many people on my PIT that I am close to.	1	2	3	4	5	6	7
7. The people I worked with on the PIT do not seem to like me much.	1		3	4	5	6	7
8. People on the PIT team were pretty friendly towards me.	1	2	3	4	5	6	7

Appendix H: Awareness of Teacher Workloads Scale

	Strongly Disagree	Disagree	Neutral	Agree	Agree Strongly
1. I received sufficient assistance from PIT support personnel to implement the intervention(s) generated by the PIT.	1	2	3	4	5
2. It has not been difficult to use the intervention(s) generated by the PIT and still meet the needs of other children in my classroom	1	2	3	4	5
3. The intervention(s) generated by the PIT have not been practical in the amount of time required for record keeping	1	2	3	4	5