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Relationships Between Educator Beliefs, Perceptions of Educational Practices and Skills, PS/RtI Implementation, and Educational Outcomes

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Relationships Between Educator Beliefs, Perceptions of Educational Practices and Skills, PS/RtI Implementation, and Educational Outcomes

by

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Dedication

I would like to thank my parents for their continued support and encouragement and for always emphasizing the importance of education. I also would like to thank my fiancé, Lauren, for her support as I worked towards completing this dissertation and finishing graduate school. Thank you to George and Mike for their guidance and mentorship throughout graduate school and Kathy and Connie for their support in writing this dissertation.

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Abstract

This study examined the relationships between pilot school status and Problem-Solving/Response to Intervention (PS/RtI) implementation, educator variables and PS/RtI implementation, and PS/RtI implementation and student and systemic outcomes following the final year of a 3-year PS/RtI implementation Project. School-Based Leadership Team (SBLT) members from 34 pilot schools in seven demonstration districts received training, as well as ongoing technical assistance and coaching, related to PS/RtI implementation. Data on educator's beliefs, perceptions of educational practices, and perceptions of PS/RtI skills; PS/RtI implementation; and student and systemic outcomes were collected from the 34 pilot schools, as well as 27 comparison schools. To examine the research questions in this study, multilevel models were conducted. Results of the analyses suggested that pilot school status appeared to be positively related to increases in PS/RtI implementation over time, while the educator variables did not significantly predict changes in PS/RtI implementation. Increases in PS/RtI implementation were not related to changes in DIBELS kindergarten PSF scores over time, but were negatively related to DIBELS kindergarten NWF scores over time. Finally, PS/RtI implementation was not significantly related to changes in office discipline referrals, but was significantly related to decreases in placements in special education over time. Potential explanations for the findings from this study and suggestions for future research are discussed.

Chapter One

Introduction

According to the No Child Left Behind Act of 2001 (NCLB, 2002), local education agencies should be working towards the goal of enabling all students to meet their state's academic achievement standards and narrowing the achievement gaps between students (NCLB, 2002). Still today, large numbers of students are not meeting academic and behavioral standards. Recent national assessment data indicate that nearly 30% of students fail to meet basic standards of reading proficiency, while approximately 20%-30% of students fall below basic standards for math achievement (Planty et al., 2009). Significant gaps in achievement continue to exist between racial/ethnic minorities, students of low socioeconomic status (SES), and English Language Learners (ELL) and higher-SES, Caucasian students (Planty et al., 2009).

The President's Commission on Excellence in Special Education (PCESE, 2002), reported that almost half of the six million students being served through special education are identified as having a "specific learning disability." Additionally, rates of students identified as having a specific learning disability have risen more than 300% since 1976. Along with the substantial increase in special education identification rates, the traditional model of identification for special education has resulted in the overidentification of students from racially/ethnically diverse backgrounds, males, students from low-SES backgrounds, and ELLs (Heller, Holtzman, & Messick, 1982;

Donovan & Cross, 2002). These data seem to indicate that the traditional service delivery model fails to meet the mandates set forth in NCLB (2002) and IDEIA (2004) regarding accountability in making sure all students achieve academic proficiency, including those students from disadvantaged backgrounds.

In response to these continuing challenges, the No Child Left Behind Act of 2001 (NCLB, 2002) has become the foundation of a school accountability movement, focusing on high-quality education and ensuring that students attain state-determined academic achievement standards. As mandated by the law, states are required to develop challenging academic standards in order to determine which schools are making Adequate Yearly Progress (AYP) towards the goal of having every student performing on grade level by the 2013-2014 school year. The NCLB Act of 2001 requires that statewide assessment systems be developed and used to monitor academic progress and that results be disaggregated by race/ethnicity, gender, socio-economic status (SES), English Language Learner (ELL) status, and disability (SWD) status. Schools that do not demonstrate progress for each of these identified groups are required to provide additional services to students (e.g., tutoring, after-school assistance). Along with increasing schools' accountability for student performance, NCLB emphasizes the importance of utilizing scientifically-based instructional programs and makes funds available to conduct scientific research on educational programs. By requiring schools to use scientifically-based instructional programs and to monitor student data, NCLB holds schools accountable for their students' progress.

In addition to NCLB (2002), the Individuals with Disabilities Education Improvement Act (IDEIA) of 2004 also mandates the use of evidence-based practices and the use of data to make educational decisions about students. Under IDEIA, schools are required to demonstrate the effectiveness of core instruction prior to considering determination of a suspected disability. For students who continue to struggle despite exposure to an effective core curriculum, schools must provide evidence-based interventions and demonstrate that students did not respond to these interventions over a reasonable period of time in order to consider them eligible for special education programs and related services. Schools are required to demonstrate student response to interventions through the use of student-centered assessments that determine the degree to which those students attain the state educational standards. One model that has been suggested to assist schools in meeting the goals and regulations that require data-based decision-making set forth in NCLB (2002) and IDEIA (2004) is the Problem-Solving/Response to Intervention (PS/RtI) Model. The PS/RtI model is defined as "the practice of providing high-quality instruction/intervention matched to student needs and using learning rate over time and level of performance to make important educational decisions" (Batsche et al., 2005, p. 5).

All states are in the process of implementing regulations and guidelines requiring the use of data-based decision-making and a multi-tiered system of supports (Spectrum K12 School Solutions, 2010). The state of Florida has chosen to implement PS/RtI statewide as a general education initiative using the model proposed by the National Association of State Directors of Special Education described below (Batsche et al., 2005). The *Statewide Response to Instruction/Intervention (RtI) Implementation Plan*, published by the Florida Department of Education (DOE), provides the framework for assisting school districts to implement an RtI model of service delivery (Florida

Department of Education, 2008). In addition to publishing the statewide RtI plan, the Florida DOE has developed a Response to Intervention website (http://www.florida-rti.org/), published and disseminated a Technical Assistance Paper (TAP) on RtI implementation (Florida Bureau of Exceptional Education and Student Services, 2006), as well as supported a number of projects and divisions intended to assist in the implementation of RtI through technical assistance, professional development, and program evaluation. These projects include the Florida Problem-Solving/Response to Intervention (PS/RtI) Project, a collaborative project between the Florida DOE and the University of South Florida (Batsche, Curtis, Dorman, Castillo, & Porter, 2007); Florida's Positive Behavior Support (PBS) Project; the Florida Center for Reading Research; Just Read, Florida!; and the Office of Early Learning, as well as other entities working to build the capacity of school districts to implement evidence-based practices and establish RtI systems in schools. Since 2007, the Florida PS/RtI Project has evaluated the impact of implementation of a PS/RtI model in eight demonstration districts in the state of Florida. Consistent with the Florida DOE's RtI model, the Florida PS/RtI Project utilizes the model described below (Batsche et al., 2005).

Overview of Service Delivery in the PS/RtI Model

Consistent with the recommendations of NCLB (2002) and IDEIA (2004), the PS/RtI model focuses on providing high-quality instruction and utilizing data to make educational decisions about students (Batsche et al., 2005). The PS/RtI model includes the problem-solving method, the use of a multi-tier model of service delivery, and a data collection and assessment system to inform decisions at each of three tiers (core, supplemental and intensive instruction/intervention) (Batsche et al., 2005). The problem-solving method (Bergan & Kratochwill, 1990) uses a multi-step process to: (1) identify the problem (i.e., the discrepancy between current student performance and desired benchmarks), (2) analyze what factors are contributing to the presence of the problem, (3) develop and implement a plan for intervention, and (4) evaluate the student or students' response to intervention (Batsche et al., 2005). See Figure 1 for an illustration of the problem-solving method.

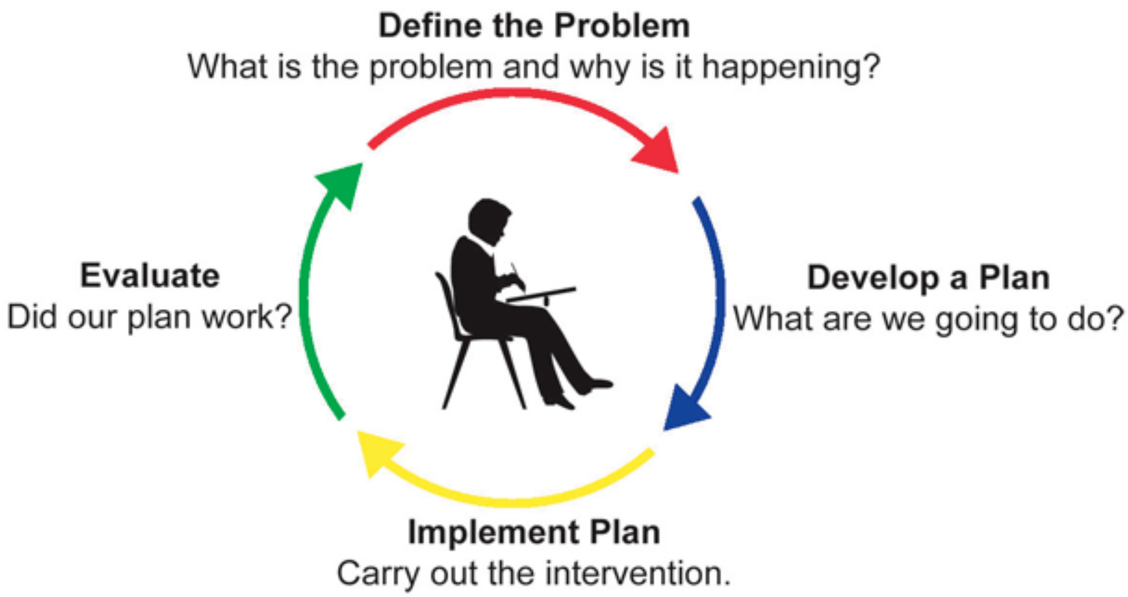

Figure 1. Illustration of the Problem-Solving Method

Along with providing a framework (i.e., problem-solving method) for data-based decision-making, the PS/RtI uses multi-tiered system of service delivery to more efficiently allocate resources. Although several PS/RtI models currently exist (Fuchs, Mock, Morgan, & Young, 2003), a three-tier model of service delivery is commonly used and serves as the framework for the Florida PS/RtI Project (Batsche et al., 2007).

Tier I includes a scientifically-validated core curriculum and universal screenings to identify students at risk for academic and/or behavioral difficulties and to monitor student performance. Schools are required to select core curricula that have been shown to be effective in producing adequate levels of student performance (NCLB (2002); IDEIA (2004). Common universal screening measures include the Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Kaminski & Good, 1996) and the Florida Assessments for Instruction in Reading (FAIR; Foorman, Sáez, Bishop, & Raney, 2008) for literacy skills. The examination of office discipline referrals (ODRs) is commonly used in schools to monitor student behavior and assess the effectiveness of the school's core discipline program (Nelson, Benner, Reid, Epstein, & Currin, 2002). The universal screenings (typically conducted three to four times per year) and analysis of these data serve two purposes. First, screening data can provide evidence of the effectiveness of the core curriculum (Batsche et al., 2005). Specifically, if more than 80% of students are making progress towards state-approved benchmarks, it can be assumed that the core curriculum is effective in meeting the needs of the majority of students. Second, universal screening data can be used to identify students who need further instruction/intervention as determined through the problem-solving process.

Provided that the core curriculum has been demonstrated to be effective, Tier II (supplemental instruction/intervention) is designed to provide services in addition to those provided in Tier I to those students not meeting academic and/or behavior benchmarks. As previously described, school-based, problem-solving teams should systematically use a structured problem-solving process (such as the four-step problem solving model) to determine why students are not mastering particular skills and implement interventions designed to address specific academic or behavioral needs. Standard treatment protocol interventions are sets of evidence-based practices designed to increase the skills of students exhibiting difficulties in a specific area common to those students. Standard treatment protocol interventions are typically delivered in small groups, scripted or structured, and scientifically supported to improve the performance of students exhibiting specific needs (Batsche et al., 2005). Students should receive Tier II interventions based on specific needs and progress should be monitored through the collection and analysis of data throughout intervention implementation.

Students who demonstrate improvement as a result of Tier II interventions are gradually faded back into receiving only core instruction. Some students, however, may continue to need Tier II interventions to maintain successful performance levels. When students do not demonstrate a positive response to interventions in Tier II, they often require more intensive interventions (Batsche et al., 2005). Students who fail to make progress, despite being exposed to a scientifically-validated core curriculum and supplemental instruction, typically receive more intensive, individualized interventions aimed at increasing progress in specific academic or behavioral skills (referred to as Tier III services). While students are receiving intensive Tier III interventions, their progress continues to be monitored. If the student does not demonstrate a sufficient response to intervention, school-based problem-solving teams continue to develop interventions until a positive response to intervention is attained (Batsche et al., 2005). If the team believes that a student's poor response to intervention is influenced by a potential disability, an evaluation of identify a potential disability can take place. See Figure 2 for an illustration of the three-tiered model of service delivery.

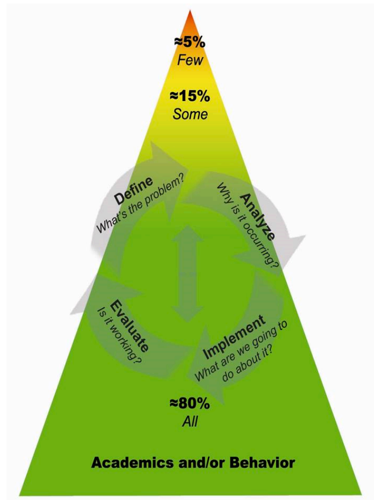

Figure 2. Illustration of the Three-Tiered Model of Service Delivery

The final component of a PS/RtI model is the use of an integrated data collection and assessment system for informing educational decisions at each tier (Batsche et al., 2005). In order to determine whether or not students are responding to instruction/interventions, data must be collected to assess academic skill and behavioral performance. Within an RtI model, curriculum-based assessment, as well as Curriculum-Based Measurement (CBM) (Deno, 1985; Shinn, 1989) and Curriculum-Based Evaluation (CBE) (Howell & Nolet, 1999), have been used to monitor students' progress. Ideally, these measures directly assess skills required by state and local standards and assess basic skills demonstrated to lead to higher-level skills. These measures are designed to be sensitive to small amounts of growth, can be administered efficiently and repeatedly, can be easily summarized, can be used to make comparisons across students and monitor students' progress, and are directly relevant to developing instructional strategies addressing the specific area of need (Batsche et al., 2005). In summary, the RtI model of service delivery assists schools to use their resources more efficiently in order to better meet the needs of students.

Previous Research on PS/RtI Models

Research on the effectiveness of an RtI model of service delivery has demonstrated a positive impact on student and systemic outcomes. Student outcomes refer to student-related variables, such as student academic skill, student growth in a skill, time on-task, and academic task completion. Systemic outcomes typically refer to school-wide issues, including office discipline referrals for behavior, referrals for suspected disability, placements in special education, schoolwide retention rates, and changes in activities engaged in by school personnel (e.g., consultation, standardized assessment, intervention development). Several studies have demonstrated positive student outcomes associated with implementation of a PS/RtI model, including increased academic achievement (Marston, Muyskens, Lau, & Canter, 2003; Torgeson, 2009; VanDerHeyden & Burns, 2005) and decreased office discipline referrals and suspensions (Knoff & Batsche, 2005). Several studies and meta-analyses also have indicated a positive relationship between PS/RtI implementation and student outcomes (Burns, Appleton, & Stehouwer, 2005; Burns & Symington, 2002; Telzrow, McNamara, & Hollinger, 2000). Research on the impact of a PS/RtI model on systemic outcomes has indicated a positive impact on referrals for special education (Burns, Appleton, & Stehouwer, 2005; Burns & Symington, 2002; Knoff & Batsche, 2005; VanDerHeyden, Witt, & Gilbertson, 2007), placements in special education (Burns et al., 2005; Burns & Symington, 2002; Knoff & Batsche, 2005; Marston et al., 2003; VanDerHeyden et al., 2007), and disproportionality

(Marston et al., 2003; VanDerHeyden et al., 2007). In addition to providing promising early evaluations of implementation of PS/RtI models, many of these aforementioned studies were conducted over several years and included extensive data collection.

Preliminary research on student and system outcomes in PS/RtI models appears promising. However, caution should be exercised when examining results and considering possible implications from these studies for a number of reasons. First, most studies used relatively small sample sizes. Several of the cited RtI implementation studies examined the outcomes of RtI models in only a small sample of schools or districts (Knoff & Batsche, 2005; VanDerHeyden & Burns, 2005; VanDerHeyden et al., 2007) and due to limited previous research and strict inclusion criteria, the meta-analyses utilized a relatively small number of studies (Burns et al., 2005; Burns & Symington, 2002). Second, data were typically collected from predominantly Caucasian schools and districts (VanDerHeyden & Burns, 2005; VanDerHeyden et al., 2007). Several other studies did not report student demographic data (Marston et al., 2003; Telzrow et al., 2000; Torgeson et al., 2009). Third, the majority of studies used relatively simple statistical analyses (e.g., means, frequencies, chi-square analyses) when examining implementation outcomes (Torgeson, 2009; VanDerHeyden et al., 2007). Finally, due to the many external variables associated with educational research (e.g., competing initiatives or programs, lack of resources, student needs taking priority over best empirical practices), most researchers noted the lack of control group or random assignment of schools (Marston et al., 2003; VanDerHeyden & Burns, 2005; VanDerHeyden et al., 2007). In summary, more research relating to expected outcomes of implementing a PS/RtI model needs to be conducted in order to more confidently provide implications for implementation. Future research on implementation of PS/RtI models should consider using larger sample sizes, employing more diverse samples, utilizing control groups and random assignment, conducting more complex statistical analyses, and include educator variables in order to examine expected outcomes.

Rationale for Examining Educator Variables

To address some of the concerns of previous research stated above, the present study examined the relationships between certain educator variables, PS/RtI implementation and outcomes using data from a 3-year, large scale PS/RtI implementation study. Examining stakeholder variables in a large-scale implementation effort is important (Hall & Hord, 2006). Previous research on large-scale systems change efforts in education has suggested that educator attitudes about the innovation and perceptions of self-efficacy (Bol et al., 1998; Ross, 2001; Ross et al., 2004; Smith et al., 1998) play an important role in predicting implementation. More recent research has suggested a positive relationship between teachers' self-efficacy and perceptions of RtI outcomes (Nunn, Jantz, & Butikofer, 2009). However, further research on the relationships between educator variables and implementation of RtI models is necessary in order to provide information essential for successful implementation.

Statement of the Problem

NCLB (2002) and IDEIA (2004) have required accountability in the form of higher levels of student performance. One model proposed to better meet the needs of students and schools is a PS/RtI model of service delivery. While preliminary research on implementation of PS/RtI models has demonstrated both positive student and systemic outcomes (Burns et al., 2005) limitations of these studies potentially decrease the generalizability of the results to large-scale implementation efforts. Additionally, previous research has largely ignored the potential relationships between educator variables and PS/RtI implementation. The purpose of the current study was to add to the existing body of research by examining the relationships between educator variables and changes in PS/RtI implementation over time, as well as the relationships between PS/RtI implementation and student and systemic outcomes. Using data from a large-scale, statewide PS/RtI implementation project, the current study addressed the following research questions:

1. Is there a difference between pilot and comparison schools in changes in the level of PS/RtI implementation relative to reading over time?
2. What is the relationship between school-level educator beliefs, perceptions of educational practices, perceptions of PS/RtI skills, and levels of PS/RtI implementation in pilot schools?
3. What is the relationship between changes in the level of PS/RtI implementation in pilot schools and the following student and systemic outcomes?
    a. Student Outcome
        i. Initial student reading performance
    b. Systemic Outcomes
        i. Rate of office discipline referrals (ODRs)
        ii. Rate of placements in special education

Chapter Two

Review of the Literature

This chapter begins with a discussion of federal legislation that provides the context for a shift to a Response to Intervention (RtI) model in education. Next, an overview of service delivery within an RtI model is discussed. Then, research on student and systemic outcomes in both a traditional service delivery model and RtI model are presented along with the importance of professional development in implementing an RtI model.

Context for Shift to a PS/RtI Model

Federal legislation, such as the Elementary and Secondary Education Act (NCLB, 2002) and IDEIA (2004), has provided the impetus for the school accountability movement. These pieces of legislation aim to hold schools accountable by requiring states to develop challenging student achievement standards, to use scientifically-based instructional programs, to monitor the progress of students, and to report disaggregated student achievement data. Additionally, the President's Commission on Excellence in Special Education (PCESE, 2002) highlighted the importance of shifting focus from compliance and bureaucratic imperatives to student academic and social outcomes. One model that has been proposed to assist schools in improving the academic, behavioral, and social outcomes for all students is Problem-Solving/Response to Intervention (PS/RtI).

Overview of Service Delivery in the PS/RtI Model

The PS/RtI model incorporates many of the critical elements required by NCLB and IDEIA, including the focus on high-quality instruction or interventions matched to student needs and using student progress monitoring data to make important educational decisions (Batsche et al., 2005). The PS/RtI model includes a problem-solving method, a multi-tier model of service delivery, and a data collection and assessment system to inform decisions at each tier (Batsche et al, 2005). The problem-solving method includes a multi-step process to develop, implement and evaluation instruction and/or interventions (Bergan & Kratochwill, 1990). Educators can apply the problem-solving method for multiple units of analyses, including a single student, a group of students, a classroom or an entire school building in order to (1) identify the problem (i.e., the discrepancy between current student performance and desired benchmarks), (2) analyze what factors are contributing to the presence of the problem, (3) develop and implement a plan, and (4) evaluate the student or students' response to intervention (Batsche et al., 2005).

The PS/RtI model provides educators with both a framework and the structure for utilizing resources more efficiently and developing more effective instruction and interventions. As previously mentioned, the PS/RtI model uses a multi-tiered system of service delivery to more efficiently allocate resources. Although several models currently exist in the field (Fuchs et al., 2003; Spectrum K12 School Solutions, 2010), a three-tier model of service delivery is commonly used and is the framework for the Florida PS/RtI Project (Batsche, Curtis, Dorman, Castillo, & Porter, 2007).

Tier I includes a scientifically-validated core curriculum and universal screenings to monitor the progress of ALL students and to identify students at risk for academic and behavioral difficulties. NCLB (2002) and IDEIA (2004) require districts to select core curricula that are proven effective in producing levels of student performance that meet or exceed state proficiency standards. In addition, universal screenings allow schools to monitor levels of student performance on common reading, math, and behavior skills. The methods to measure these skills include commercially available measures (e.g., DIBELS, AimsWeb), as well as assessments developed by states and school districts. The universal screenings (typically conducted three to four times per year) and analysis of these data serve two purposes. First, screening data provide evidence of the effectiveness of the core curriculum (Batsche et al., 2005). Specifically, if more than 80% of students are making progress towards state-approved benchmarks, it can be assumed that the core curriculum is effective in meeting the needs of the majority of students. Second, universal screening data can be used to identify students who need modifications to instruction in Tier I (e.g., differentiation) or more intensive instruction/intervention at Tier II. Movement up the tiers of service delivery (i.e., Tier I to Tier II, Tier II to Tier III) is associated with an increase in the intensity of services delivered, not just more time spent on instruction. The PS/RtI model also emphasizes that the effectiveness of more intensive instruction (Tiers II and III) is based on the presence of an effective core curriculum. The first comprehensive study of special education in the United States, conducted almost 30 years ago, concluded that the effectiveness of special education services was based on the effectiveness of a strong core curriculum (Heller, Holtzman & Messick, 1982).

Tier II services are more intensive than those provided in the core curriculum and can be developed through use of the problem-solving method or standard treatment protocols (Batsche et al., 2005). More intense services are those that are provided for more time than is available in Tier I and focus more narrowly on curricula areas. As previously described, school-based, problem-solving teams can use the four step problem solving process to identify why students are not mastering particular skills and implement interventions designed to address specific academic or behavioral needs. Standard treatment protocol interventions are sets of evidence-based practices designed to increase the skills of students exhibiting difficulties in a specific area. Standard treatment protocol interventions typically are delivered in small groups, scripted or structured, and proven to be effective in producing change in students exhibiting specific needs (Batsche et al., 2005). Regardless of the method used (i.e., problem-solving or standard treatment protocol), students should receive Tier II interventions based on specific needs and progress should be monitored throughout intervention implementation.

Students who demonstrate improvement as a result of Tier II interventions are gradually faded back into receiving only core instruction or might continue to require Tier II interventions to attain state and/or district proficiency standards. Students who need additional services to attain proficiency often are referred for more intensive interventions (Batsche et al., 2005). Tier III services typically are more intensive (more time and a narrower focus of curriculum than Tier II), individualized interventions aimed at increasing progress in specific academic or behavioral skills. While students are receiving intensive Tier III interventions, their progress continues to be monitored. If a student receiving Tier III services also demonstrates the characteristics of a disability

AND requires specialized educational services, then that student would be identified as a student with a disability. In Florida, students receiving Tier III services are identified as English Language Learners, students who did not have sufficient opportunity to learn, students with disabilities and “other” students (Spectrum K12 School Solutions, 2010). Clearly, Tier III is not synonymous with special education.

The final component of a PS/RtI model is the use of an integrated data collection and assessment system used to inform educational decisions at each tier (Batsche et al., 2005). In order to determine whether or not students are responding to instruction/interventions, data must be collected to assess academic skill development and behavioral performance. Within an RtI model, curriculum-based assessment, as well as curriculum-based measurement (CBM, Deno, 1985; Shinn, 1989) and curriculum-based evaluation (CBE, Howell & Nolet, 1999), have been used to monitor student progress. These assessments should assess skills aligned with state and local standards, as well as basic skills demonstrated to lead to higher-level skills. The assessments should be sensitive to small amounts of growth, be able to be administered efficiently and repeatedly, be easily summarized, and be used to make comparisons across students and monitor students’ progress. Finally, it is critical that the assessments are directly relevant to developing instructional strategies addressing the specific area of need (Batsche et al., 2005). In summary, the RtI model of service delivery assists schools to use their resources more efficiently and effectively to meet the needs of students.

Research on Student and Systemic Outcomes in the Current Model of Service Delivery

Various research studies suggest that a significant number of students are still struggling to meet basic standards of proficiency in the current model of schooling in America. The National Center for Educational Statistics (NCES) is the primary federal center for collecting, analyzing, and reporting important educational data. Each year, the NCES produces an annual report, *The Condition of Education* (Planty et al., 2009). *The Condition of Education* includes important educational data, such as education enrollment rates, student performance, and resources for education. Student achievement data from the 2007 National Assessment of Educational Progress (NAEP) Reading and Mathematics Assessments were used for *The Condition of Education 2009* (Planty et al., 2009). For both the NAEP Reading and Mathematics Assessments, possible scores range from 0 to 500. These assessments evaluate what students should know and be able to do, and achievement levels are defined by student scores. The four achievement levels include below basic, basic, proficient, and advanced. Along with *The Condition of Education 2009*, a more detailed examination of 4th- and 8th-grade student's performance on the NAEP Assessments is included in *The Nation's Report Card: Reading 2009* (NCES, 2009b) and *The Nation's Report Card: Mathematics 2009* (NCES, 2009b).

The percentage of 4th- and 8th-grade students performing at or above the basic achievement level in reading was higher in 2007 than in 1992, by 4 and 3 points, respectively (Planty et al., 2009). However, 33% of 4th-graders and 26% of 8th-graders still failed to meet basic levels of reading proficiency. Also of concern are the achievement gaps that continue to exist between racially and culturally diverse students, English Language Learners (ELL), students with disabilities (SWD), and students who qualify for free/reduced lunch compared to their White, higher-SES peers. Specifically, for 4th grade students, *The Nation's Report Card: Reading 2009* (NCES, 2009b) reports that while 77% of White students performed at or above the basic level of reading proficiency, only 47% of Black students and 48% of Hispanic students met basic levels of proficiency. Reading achievement gaps continued to exist between 4th-grade ELL students (69% of non-ELL students at or above basic proficiency level compared to 29% of ELL students), students with disabilities (69% of non-SWD students at or above basic level compared to 34% of SWD students), and students on free- and/or reduced lunch (79% of high-SES students at or above basic level compared to 51% of low-SES students). By 8th-grade, these reading achievement gaps continued to exist between groups (NCES, 2009b).

The Nation's Report Card: Mathematics 2009 (NCES, 2009a) demonstrates that similar achievement gaps exist for mathematics. Among 4th grade students, 90% of White students performed at or above the basic level of mathematics proficiency, compared to only 63% of Black students and 70% of Hispanic students. Similar achievement gaps existed for ELL students (84% of non-ELL students at or above level compared to 57% of ELL students), students with disabilities (84% of students not diagnosed with a disability at or above basic level compared to 59% of SWD students), and low-SES students (91% of high-SES students at or above basic level compared to 71% of low-SES students) (NCES, 2009a). By 8th-grade, many of these achievement gaps continue to widen. For example, the gap between the percentage of White students and Black students achieving basic standards in mathematics was greater in 8th grade (33 percentage points) than in 4th grade (27 percentage points), as well as the gap between White students in Hispanic students in 8th grade (26 percentage points) and 4th grade (20 percentage points). The achievement gap was also larger among 8th grade ELL students, students with disabilities, and students from economically disadvantaged backgrounds (low-SES), compared to the achievement gap among 4th grade students (NCES, 2009a). Clearly, the increases in achievement gaps between certain groups of students and their White, higher-SES peers are troubling.

Educators have long voiced concerns about educational services for students with disabilities within a traditional model of service delivery (Heller, Holtzman, & Messick, 1982; Hosp & Reshchly, 2003; PCESE, 2002; Vaughn & Fuchs, 2003). As of 2006-2007, about 6.7 million school-age children receive special education services through IDEA, with almost 40% of these children labeled as having a “specific learning disability,” representing the largest primary disability group (Planty et al., 2009). Since 1976, the number of students identified as having a “specific learning disability” has grown by almost 300% (PCESE, 2002). While the Individuals with Disabilities Education Act (IDEA) created great opportunities for students with disabilities, many agree that current special education practices can be improved (Heller, Holtzman, & Messick, 1982; Hosp & Reshchly, 2003; PCESE, 2002; Vaughn & Fuchs, 2003). In 2001, President Bush created the President’s Commission on Excellence in Education with the goal of finding ways to improve America’s special education system and move towards a culture of accountability for these services (PCESE, 2002). In its final report, the President’s Commission on Excellence in Special Education concluded:

1. While IDEA is providing safeguards and access for children with disabilities, the current system often places process above results.
2. The current system utilizes a model that waits for children to fail, instead of focusing on prevention and intervention.
3. The responsibility to educate children with disabilities should be shared by general education and special education.
4. Parents often do not have adequate options when their child fails to make progress.
5. More energy needs to be focused on the first mission of public schools, educating every child, instead of focusing on compliance.
6. Due to the lack of validity of current identification methods, thousands of children are misidentified each year.
7. Highly qualified teachers are necessary to support children with disabilities.
8. The current system needs to support rigorous research and the implementation of evidence-based practices.
9. The focus needs to be on academic achievement and social outcomes, in school and beyond.

In response to these nine findings, the President's Commission on Excellence in Special Education reported recommendations for improving the services delivered to students in special education. Listed below are recommendations from the PCESE:

1. While legal and procedural safeguards are necessary, services need to be focused on providing opportunities and ensuring the achievement of every child.
2. Early identification and interventions are necessary to prevent student failure.
3. General education and special education need to work together and share the responsibility for children with disabilities.

Similar to the President's Commission on Excellence in Special Education, Forness (2001) reviewed 24 meta-analyses examining the effectiveness of special education and related services. In this review, "special class placement" resulted in the lowest mean effect size (-0.12) of any intervention reviewed by the meta-analyses. This negative effect size associated with special class placement suggests a potentially harmful effect. In the studies examining the effect of special class placement for children with learning disabilities or behavioral disorders, the mean effect size was 0.29. However, this effect size for special class placement was still small (Cohen, 1988).

While recent reports have demonstrated concern over the efficacy of the current special education system (Hosp & Reschly, 2003; PCESE, 2002; Vaughn & Fuchs, 2003), they are certainly not the first to do so. In one of the first examinations of efficacy in special education, Heller, Holtzman, and Messick (1982) reported findings from a national panel investigating the cause of disproportionality in classes for educable mentally retarded students. The mission of the panel, which included 15 individuals representing a wide range of viewpoints, was to (1) determine factors that account for disproportionate numbers of minority students and males in special education classrooms, and (2) identify placement criteria that do not result in disproportionality among minority students and males. In order to do this, the panel examined a wide range of topics, including the role of IQ testing in special education, the appropriateness of placing special education students in general education classrooms, the causes and proper assessment of mental retardation, and racial discrimination in educational practices. The panel also outlined the purpose of the special education process, which is to improve instruction for children. After analysis of 12 years of Office for Civil Rights (OCR) data, Heller et al. (1982) identified two likely reasons for disproportionality in special education: the validity of assessment practices used to identify students for special education and the quality of instruction received by students in special education. Final recommendations focused on improving the assessment procedures and instructional practices used in special education.

Research on Student and Systemic Outcomes in a PS/RtI Model

In response to research on the efficacy of the traditional service delivery model, research on the efficacy of the PS/RtI model of service delivery has taken shape. Review of previous literature found several studies on the relationship between implementation of a PS/RtI model and student and systemic outcomes. While there is some conceptual variability among the PS/RtI models in the literature, they have all included the key components identified by Batsche et al. (2005). Specifically, these models have included a tiered service delivery model in which services of increased intensity were provided to students with difficulties, use of the problem-solving process to identify student needs and inform intervention, and use of data to monitor student progress and make educational decisions. A review of research conducted on the efficacy of a PS/RtI model is now presented.

In 2005, Burns, Appleton, and Stehouwer conducted a meta-analytic review of the efficacy of RtI models implemented for research, as well as field-based models. Burns et al. (2005) reviewed studies from four large-scale district or state RtI implementation initiatives (i.e., Heartland Agency Model, Ohio Intervention Based Assessment Model, Pennsylvania Instructional Support Team Model, Minneapolis Public School's Problem-Solving Model), examining the effectiveness of an RtI model related to student and systemic outcomes. Burns and colleagues reviewed 21 RtI implementation studies and found promising results for both research-implemented RtI models and existing field-based models. High unbiased estimates of effect (UEE) (Hedges, 1982), a weighed estimator of effect using effect size and the sample size for each individual study, were found for both existing field-based RtI models (1.42) and research-implemented models (.92). Results were positive for both student and systemic outcomes within an RtI model as well. The researchers found higher overall UEEs for systemic outcomes (1.54) than for student outcomes (1.02), though both UEEs were greater than 1.00, indicating a large effect size. However, differences in student and systemic outcomes were found between the two groups. Specifically, while existing field-based models resulted in larger UEEs for systemic outcomes (1.80) than for student outcomes (.94), the opposite was found for research-implemented models. Research-implemented models led to larger UEEs for student outcomes (1.14) than for systemic outcomes (.47). The researchers discussed that differences between existing field-based models and research-implemented models could be in the length of implementation. For example, it is likely that over the longer period of implementation, teams implementing field-based models had time to refine their implementation models, potentially resulting in increased success. The researchers also examined rates of referral to and placement in special education. Results from the meta-analysis found that 1.68% of the student population was placed into special education, compared to previous estimates that about 5% of the student population exhibited a learning disability (Lerner, 2002). While this meta-analysis suggests a positive relationship between RtI implementation and student and systemic outcomes, the researchers noted the importance of further research on RtI models.

A meta-analytic review of prereferral intervention teams (PIT), defined as any multidisciplinary problem solving team, resulted in similar findings (Burns & Symington, 2002). Burns and Symington included nine studies that examined student and systemic outcomes among university-implemented and field-based PIT models. Studies were also categorized by whether or not the researchers used random assignment in the study. For each of these various groupings, Cohen's (1988) *d* was computed for an effect size (ES). Overall, a mean effect size at or above .90 was found for seven of the nine studies, indicating a large effect. Studies in which a random assignment was used resulted in effect sizes more than two times larger than studies that did not use random assignment (1.43 vs. 0.64). The mean effect size for university-implemented PIT models (1.32) was also more than twice as large as the mean effect sizes for field-based PIT models (.54). While this meta-analysis also suggests that PITs are effective in increasing student and systemic outcomes, the small number of studies (i.e., only 9 studies on PIT effectiveness) that met the researchers' inclusion criteria severely limits the extent to which recommendations for practice can be made. In fact, the researchers highlighted that the primary purpose of this meta-analysis was not to empirically investigate the effectiveness of PITs, but rather to identify areas in need of future research.

Research studies on the large-scale implementation of PS/RtI models were also found. Marston, Muyskens, Lau, and Canter (2003) reported on the student and systemic outcomes associated with implementing an RtI model in the Minneapolis Public Schools. In the article, the authors noted that the district has been utilizing a problem-solving approach to intervention assistance, referral, evaluation, and eligibility decisions since the early 1990s (Marston et al., 2003). The authors also described components of the model used in Minneapolis, including operation within a three-tiered model to deliver services of increasing intensity to students, use of the problem solving process, and the use of data to make educational decisions about students. The importance of ongoing training and professional development for school staff was also highlighted. In their evaluation of implementation of a PS/RtI model, the researchers found decreases in child counts for children diagnosed with learning disabilities (LD) and mild mental impairments (MMI) in the traditional model since the problem-solving model phase-in began in 1994. However, over that same time, students identified for special education services through the SNAP (problem-solving teams) process increased to almost 4% of the student population by 2001. During this time period, the total number of students with high-incidence disabilities (i.e., students identified as LD or MMI through traditional process, students identified through SNAP process) does not deviate from about 7% of the student population. This indicates that the problem-solving model implemented by pilot schools did not inflate the numbers of students diagnosed with high-incidence disabilities, even during a time when district data indicated that the proportion of struggling students was increasing. Data from this evaluation also suggest that implementation of the PS/RtI model in the Minneapolis School District had a positive impact on disproportionality of African American students placed in special education. Specifically, in 1997, while 44% of the student population was African American, almost 69% of students placed in special education were African American. By 2001, when 45% of the student population was African American, only about 54% of students placed in special education were African American. Along with the evaluation reported by Marston et al. (2003), Reschly and Starkweather (1997) conducted an independent evaluation of the problem-solving model implemented in Minneapolis Public School District. Reschly and Starkweather (1997) concluded that prereferral interventions in the problem-solving model were superior to those using the traditional approach, special education services were delivered earlier using the problem-solving model, school staff were generally positive about implementation of the problem-solving model, and there was an overlap of about 75% of students identified for special education using the problem-solving model and the traditional criteria for eligibility. The results from the independent evaluation provided further support for implementation of the PS/RtI model. As with any research, this study was not without limitations. The authors discussed the lack of control schools, which limited the ability to compare schools implementing the problem-solving model to schools not yet implementing. Additionally, schools were not randomly assigned to implement the model. The earliest implementation sites in this evaluation were often schools that had already been experimenting with the problem-solving model and were perhaps more open to change. However, this evaluation of the problem-solving model in the Minneapolis School District contributes to the growing research base supporting the implementation of a PS/RtI model in the schools.

VanDerHeyden, Witt, and Gilbertson (2007) also conducted a multi-year examination of the effects of implementation of a response to intervention (RtI) model on the identification and evaluation of children for special education. VanDerHeyden et al. (2007) implemented System to Enhance Educational Performance (STEEP), a research-based RtI model, in five elementary schools within one school district. The purpose of the study was to evaluate the effect of STEEP implementation using only district personnel to implement the model. The STEEP model operates within the problem-solving process by utilizing CBA and CBM probes in reading and math to identify students' level of performance, planning interventions for struggling students, and evaluating the effectiveness of those interventions. Teachers work with trained consultants to learn how to complete necessary procedures and apply decision rules at the following stages of the STEEP process: (1) universal screening, (2) classwide intervention, (3) assessment of the effects of incentives on performance, and (4) assessment of students' response to interventions delivered in the general education classroom. STEEP implementation began in 2 elementary schools for the 2002-2003 school year, adding one school in 2003-2004, and two schools in 2004-2005 (VanDerHeyden et al., 2007). School psychologists, who play an integral role in the districts' prereferral process, were trained to coordinate STEEP implementation in the five elementary schools. Four to five coaches were also hired at each school to assist with implementation. Throughout implementation, data were collected on the number of evaluations conducted, the demographics of students evaluated and placed in special education, and the outcomes of each evaluation conducted.

At the end of implementation, VanDerHeyden et al. (2007) examined the effect of STEEP implementation on special education evaluations and identification for each of the five elementary schools. All 4 schools (school 3 was excluded from the multiple baseline analyses) reduced the number of initial evaluations from baseline to STEEP implementation. Specifically, while the number of initial evaluations during baseline years ranged from 10 to 30, the number of initials evaluations during the first year of STEEP implementation ranged from 6 to 9. The percent of students evaluated who qualified for services was increased from 41% during baseline years to 71% during STEEP years, potentially indicating a greater accuracy of evaluation and identification within the STEEP model. The disproportional representation of males evaluated for special education was decreased from 62% during baseline years to 59% during STEEP years. Finally, diagnoses of students with a specific learning disability decreased from 6% of elementary school children to 3.5% following the first year of STEEP implementation.

VanDerHeyden and Burns (2005) also examined schoolwide STEEP implementation in their evaluation of the use of CBM and CBA data to plan and deliver mathematics instruction in order to improve student skill and group test scores. The researchers examined STEEP implementation within one elementary school during the 2002-2003 school year. As previously mentioned in the review of VanDerHeyden et al. (2007), STEEP is a problem-solving model that relies on CBA and CBM data to identify problems, plan and implement interventions, and evaluate the effectiveness of those interventions. VanDerHeyden & Burns (2005) utilized school-based coaches to assist with universal screening procedures. At the beginning of the school year, classroom teachers administered math probes to identify current skill placement (CBA) and track student growth (CBM). School-based consultants trained teachers to score the math probes and provided each teacher with a graph of their students' performance. These universal screening data were used to identify whether a classwide intervention or small-group intervention was more appropriate. Examination of these data indicated that classwide math problems were evident in all 4th and 5th grade classrooms, so the decision was made to develop an intervention plan to improve math skills for all students in 3rd through 5th grade. Students began to receive supplemental math instruction using a fluency-building intervention, in addition to the schoolwide math curriculum. Teachers were trained to implement the intervention, intervention integrity was monitored, and student progress monitoring data were collected and shared with teachers throughout the school year. At the end of the year, CBM data were analyzed using repeated-measure ANOVA analyses and significant effects were found for each grade and for the total sample. Cohen's (1988) *d* effect sizes ranged from .49 to .97, with medium effect sizes for students in 5th grade (.49) and the total sample (.62), and large effect sizes for students in 3rd (.97) and 4th grade (.86). Significant effects were found for all grades and the total sample when *t* tests were used to examine SAT-9 data. Effect sizes ranging from .29 to .45 indicated small to medium effects. These results provide additional evidence of the effectiveness of using a problem-solving model to increase student achievement. Replications of this study could include more schools and a larger sample size to increase the generalizibility of results.

Torgeson (2009) presented outcomes from large-scale implementation of an RtI model in Reading First schools in Florida. Reading First is a federally funded initiative that aims to prevent early reading difficulties through implementation of an RtI model, particularly in predominantly poor and racially and culturally diverse schools. In Florida, Reading First schools have focused on providing high-quality instruction that is differentiated according to student need, identifying students falling behind in reading through the use of reliable screening and progress monitoring tools, and providing interventions to accelerate the development of struggling readers. The majority of the 318 schools in the first cohort of Florida Reading First schools in 2003-2004 have a high proportion of economically disadvantaged (72% quality for free/reduced lunch) and racially and culturally diverse students (62%), as well as English Language Learners (14%). The Reading First schools reported an 81% reduction in the percentage of kindergarten students identified as learning disabled from the Year 1 to Year 3 of implementation. Similar reductions in the percentage of students identified as learning disabled were reported for grades 1 (67%), 2 (53%), and 3 (42%) in Reading First schools. In addition to reductions in learning disability identifications, the percentage of students finishing the year with significant difficulties (defined as scoring below 20th percentile on a measure of reading comprehension) fell by 40% from Year 1 to Year 3 in Kindergarten and about 30% in grades 1, 2, and 3. Torgeson (2009) comments that the RtI model should lead to earlier identification of students in need of interventions and increase the chance to prevent the development of serious reading difficulties.

Telzrow, McNamara, and Hollinger (2000) examined the relationship between the fidelity of problem-solving implementation by multidisciplinary teams (MDTs) and student outcomes in 227 schools during the 1996-1997 school year. The researchers used the Intervention Based Assessment (IBA) problem-solving approach and identified the following problem-solving components: behavioral definition of the problem, baseline data, clearly identified goal, hypothesized reason for the problem, systematic intervention plan, evidence of treatment integrity, data indicating student response to intervention, and comparison of student performance with baseline. The researchers used the Problem Solving Worksheet (Telzrow, 1995) and a Case Evaluation instrument to collect information on the fidelity of the problem-solving process. Following the year-long implementation, the components with the highest mean fidelity scores were "Behavioral Definition of the Problem" and "Clearly Identified Goal," while the components with the lowest mean fidelity scores were "Hypothesized Reason for the Problem" and "Treatment Fidelity." The low mean fidelity score for "Treatment Integrity" was not surprising, as previous reviews have found that only 14.4% of behavioral intervention studies measured and reported integrity data (Gresham & Gansle, 1993). The mean score of student performance was 4.0, indicating a positive student change, although the defined student goal was not achieved (Telzrow et al., 2000). Six of the eight problem-solving components were significantly correlated with global student outcomes (ranging from .13 to .24), while only the "Hypothesized Reason for the Problem" and "Treatment Integrity" components were not significantly correlated. The researchers used a stepwise multiple regression analysis to determine which problem-solving components predicted student outcomes. The analysis found that "Clearly Identified Goal" and "Data Indicating Response to Intervention" were both significant predictors of student outcomes. This study provided evidence of the relationship between most components of the problem-solving process and student outcomes, with two components significantly predicting the ultimate goal, improved student outcomes.

Research on Relationships Between Educators' Beliefs, Perceptions of Skills, and Implementation

There are many factors that can influence the extent to which a particular model of service delivery is implemented in a school or district, but previous research on the relationships between educators' beliefs and efficacy, and implementation is lacking. The lack of literature in this area is not surprising however, since typical schoolwide change efforts lack participation by the entire school staff (Hall & Hord, 2006). This is concerning, considering the importance of involving all stakeholders throughout the change process has been widely documented as an essential component of schoolwide systems change efforts (Curtis, Castillo, & Cohen, 2008; Hall & Hord, 2006; McGlinchey & Goodman, 2008). In this section, previous research on the relationships between educators' beliefs and efficacy, and implementation will be discussed.

Bol et al. (1998) investigated teachers' perceptions of support in implementing the New American Schools (NAS) restructuring models in the Memphis City School (MCS) district. After MCS was selected and funded by NAS to implement different restructuring models, the following types of support were provided: external professional development opportunities; teacher collaboration within the school setting; and resources, including money, time, materials, and equipment. Questionnaires were administered to 980 teachers in the 34 MCS schools during the spring of 2007 in order to collect information from those educators implementing the models. Focus groups using 7 to 10 randomly selected teachers from each of the 34 schools were also conducted. Results from the questionnaire indicated that both teacher perceptions of resource adequacy and professional development opportunities were significantly related to pedagogical change and student outcomes. Teachers commonly responded that the support provided through teacher collaboration was one of the most successful aspects of the school reform designs. Teachers also commented that not having necessary skills and not receiving sufficient professional development impeded on implementation efforts. While this study relied solely on teacher self-report data and only basic statistical analyses were conducted, Bol et al. (1998) suggested that teacher's perceptions of not having the necessary skills or professional development hindered implementation of the reform model.

Smith et al. (1998) examined the school reform efforts in MCS by interviewing school principals, conducting focus groups with teachers, administering two teacher questionnaires, and completing classroom observations at each reform school. Results were examined for each of the eight restructuring designs being implemented in the MCS schools and findings were similar to those from Bol et al. (1998). While some differences existed between each of the eight restructuring designs, Smith et al. (1998) presented the following elements of schools that were quick to implement their selected restructuring design: strong principal leadership, compatibility of the selected design with the school's existing philosophies, teacher buy-in to the design, strong teaching staff, and perception by teachers and administrators that the design elements were positively impacting student outcomes. Unfortunately, Smith et al. (1998) also used relatively simple statistical methods, only reporting descriptive statistics and generalizations from interviews and focus groups. A more detailed account of schools that were successful in quickly implementing their selected restructuring design would have been beneficial.

Nunn, Jantz, and Butikofer (2009) examined the concurrent validity between teacher efficacy and perceptions of response to intervention (RtI) outcomes. The researchers collected data from 429 teachers, administrators, and support staff using the Teacher Efficacy Belief and Behavior Scale-TEBBS (Nunn, 1998) and the Indicators of RtI Effectiveness Scale-IRES (Nunn, 1999). All participants in the study received five days of training, as well as on-site follow-up support, through an RtI implementation initiative. The previously mentioned instruments were completed by each of the participants on the final day of training following the year long RtI implementation process. The researchers employed the Pearson-Product Moment correlation to subscales of both instruments, finding significant relationships between all four dimensions of the TEBBS with all four dimensions of the IRES, ranging from .11 to .49. "Satisfaction with Results" on the IRES was highest correlated with "Intervention Skills Efficacy" (.48) and "General Teacher Efficacy" (.49) on the TEBBS. Overall, increases in teacher efficacy were significantly related to perceptions of improved outcomes of intervention, satisfaction with results, collaborative team process, and data-based decisions. This preliminary research study provides support for investigating the relationship between educator-related variables, such as beliefs or efficacy, and PS/RtI implementation.

Importance of Professional Development

The majority of the literature described above discussed the importance of professional development and technical assistance in implementation of a large-scale initiative (Batsche et al., 2007; Batsche et al., 2005; Marston et al., 2003; VanDerHeyden & Burns, 2005; VanDerHeyden et al., 2007). Marston et al. (2003) discuss that educators often need additional training to implement a PS/RtI model and that typical educator roles often change. For example, school psychologists may be asked to spend more time providing interventions, training staff, and conducting evaluations of PS/RtI implementation. Building administrators may spend more time systematically finding and allocating resources, supporting time for meetings, scheduling trainings, and assisting in the evaluation of PS/RtI implementation (Marston et al., 2005). Professional development and ongoing technical assistance are critical components in ensuring that educators have the skills and support to implement a PS/RtI model.

While the area in which professional development is being delivered may vary, the critical components of professional development have long been established (Showers, Joyce, & Bennett, 1987). Showers et al. (1987) found that effective professional development contains four stages: theory, demonstration, opportunities to practice, and immediate corrective feedback. In addition to these four major stages, the importance of ongoing coaching has been established (Joyce & Showers, 2002). Joyce and Showers (2002) conducted a meta-analysis of research on training and coaching and found that when training only included theory and discussion, about 5% of participants were able to demonstrate the skill taught. When demonstrations were added to the training session, 20% were able to demonstrate the skill. The addition of practice and feedback to the training resulted in 60% of the participants being able to demonstrate the skill. However, follow-up evaluations demonstrated that only 5% of the learned skill was transferred to the educators' classroom only 5% of the time. Finally, when ongoing, on-site coaching was added to the professional development program, 95% of participants were able to demonstrate the skill and the newly acquired skill was transferred the classroom 95% of the time (Joyce & Showers, 2002). This research citing the importance of coaching is one reason that many PS/RtI implementation projects have included ongoing coaching and technical assistance in their professional development plans (Batsche et al., 2007; VanDerHeyden & Burns, 2005; VanDerHeyden et al., 2007).

Conclusion

Data on implementation of the PS/RtI model of service delivery suggest overall promising results. Positive outcomes have been reported for both student (Burns et al., 2005; Burns & Symington, 2002; Knoff & Batsche, 2005; Marston et al., 2003; Telzrow et al., 2000; Torgeson, 2009; VanDerHeyden & Burns, 2005) and systemic (Burns et al., 2005; Burns & Symington, 2002; Knoff & Batsche, 2005; Marston et al., 2003; VanDerHeyden et al., 2007) outcomes. However, the previously mentioned evaluations of PS/RtI implementation have varied in the unit of analysis examined (e.g., student, school, district), the research questions and methods used, as well as the comprehensiveness of the evaluation. Additionally, educator variables related to PS/RtI implementation have largely been ignored.

For these reasons, a more comprehensive evaluation of implementation of PS/RtI models is necessary. Evaluating the relevancy of variables operating within a PS/RtI model will assist in developing a more clearly defined picture of what factors influence successful PS/RtI implementation. Future research examining variables that have the potential to impact PS/RtI implementation will provide practitioners with information needed to guide the decision-making process for implementation in the schools.

Chapter Three

Methods

A longitudinal, quasi-experimental research design was used to address the research questions presented in this study. This study employed data that were drawn from a larger evaluation of a 3-year, statewide school-reform initiative, the Florida Problem-Solving/Response to Intervention (PS/RtI) Project. Data were analyzed to evaluate the relationship between various educator variables and PS/RtI implementation, as well as the relationships between PS/RtI implementation and student and systemic outcomes over time.

Participants

Pilot schools. A total of 40 pilot schools within 8 demonstration districts were selected to begin PS/RtI implementation during the 2007-2008 school year. The districts were selected through a competitive application process. All 67 school districts in the state of Florida were encouraged to apply and nominate up to six pilot schools in their district to begin PS/RtI implementation (See Appendix A for a copy of the application). The grant application was sent to district leadership personnel in each of the districts and 3 Bidder's Conferences were held to provide a detailed explanation of the Project application requirements. Of the 67 school districts that were invited to apply, 12 districts completed applications.

The 12 applications were reviewed by members of the Florida Problem-Solving/Response to Intervention (PS/RtI) Project Leadership Team. Each application was reviewed by at least two reviewers and scored using a standard evaluation rubric (See Appendix A for a copy of the evaluation rubric). The 11-item rubric assessed the degree to which each district reported commitment to the Project, commitment of personnel and resources, included district and school demographic data, and previous experience with initiatives and programs. Districts were selected for participation in the Project based on the average application score from the Project reviewers and the extent to which the district was representative of other Florida school districts (in terms of district size, geographic location, student demographics). The eight school districts selected for participation in the Project included a total of 40 pilot schools. The number of pilot schools per district ranged from three to seven. These selected schools vary in terms of several characteristics in order to ensure that they are representative of other schools in the state of Florida. Following the 2007-2008 school year, one of the eight districts decided to discontinue its involvement with the Florida PS/RtI Project. The current study only used data collected from the 7 districts and 34 pilot schools that continued PS/RtI implementation and data collection throughout the 3-year Project.

Comparison schools. In order to evaluate the effectiveness of implementing a PS/RtI model in the pilot schools, school districts also were asked to nominate a comparison school for each pilot school selected. In the district applications, a total of 36 comparison schools were proposed to match the 40 pilot schools. Upon receiving the application packets, members of the Project Leadership Team evaluated the extent to which the pilot and proposed comparison schools were properly matched based on each of the school's philosophy, size, student demographics, student achievement, and presence of other state level initiatives (i.e., Reading First, Positive Behavior Support, Voluntary Pre-Kindergarten). After comparing the aforementioned characteristics of each pilot school with the proposed comparison school, the Project Leadership Team agreed that three of the 36 proposed comparison schools were not properly matched to their pilot school. Since the small number of schools in the two districts that proposed the three improperly matched schools limited selection of more comparison schools, a total of 33 comparison schools were deemed appropriate matches to their pilot school and included in the Project. As previously mentioned, one district discontinued its involvement in the Project after the 2007-2008 school year. Therefore, only data collected from the remaining 27 comparison schools were used in the current study.

Florida Problem-Solving/Response to Intervention Project

The Florida Problem-Solving/Response to Intervention (PS/RtI) Project was designed to evaluate the implementation of a PS/RtI model in the aforementioned pilot schools and demonstration districts across the state of Florida (Batsche et al., 2007). The Project was approved and funded by the Florida Department of Education (FLDOE) and included two initiatives: (1) a statewide training component and (2) a district based training and evaluation component available to a select number of demonstration districts in Florida. The statewide training component, which was available to all districts in Florida, was intended to build capacity for district-level PS/RtI implementation across the state. The three-year training sequence was voluntary for districts and focused on current legislation, the problem-solving process, and building capacity for PS/RtI implementation. However, due to the resources available, the statewide component included very limited technical assistance and data collection.

In contrast, the purpose of the demonstration district component was to evaluate the impact of implementing a PS/RtI model in a limited number of sites. For this reason, more resources were devoted to evaluation of the demonstration component of the Project. For example, the School-Based Leadership Teams from the pilot schools received three years of training (4-5 days per year) on implementation of a PS/RtI model, as well as technical assistance designed to assist pilot schools in implementing a PS/RtI model. Comparison schools received no training or technical assistance from the Florida PS/RtI Project. Prior to beginning participation in the Project, demonstration districts were asked to choose which grade levels and subject areas (i.e., reading, math, behavior) to target for PS/RtI implementation. In addition to training, demonstration districts also had access to PS/RtI technical assistance and school-based coaching. In order to evaluate the impact of PS/RtI implementation on various student and educator outcomes, there was extensive data collection in the demonstration districts.

Throughout this process, the Florida PS/RtI Project was supported by the Project Leadership Team, which included two co-directors, one project leader, three regional coordinators, and two project evaluators. Members of the Project Leadership Team planned and delivered training, evaluated school and district data, and supported PS/RtI implementation in the demonstration districts. The regional coordinators coordinated and supported PS/RtI implementation in each of their designated regions (i.e., North, Central, South). Finally, the project evaluators ensured that evaluation data were collected from the demonstration districts (See Appendices B and C for a copy of the Project Implementation Plan and Project Evaluation Model, respectively).

Each Project demonstration district also was awarded a mini-grant to fund the hiring of PS/RtI implementation coaches. Districts were awarded these mini-grants based on the proposed number of pilot schools so that one coach could be hired for approximately three pilot schools. Specifically, districts that proposed three pilot schools were awarded one, $50,000 mini-grant to fund the hiring of one PS/RtI implementation coach, while districts that proposed six pilot schools were offered $100,000 to hire two coaches. PS/RtI Project Leaders included the coaching component in the Florida PS/RtI Project citing research that coaching has been identified as an essential component of professional development and critical for achieving transfer of new skills into the classroom (Joyce & Showers, 2002). Coaches assisted in coordinating data collection in their pilot schools and their matched comparison schools. The coaches also were responsible for providing ongoing technical assistance to their pilot schools in order to support the implementation of a PS/RtI model. Coaches did not provide any training or technical assistance to their matched comparison schools. However, it is important to note that the context of educational change in Florida might have influenced the initiation of PS/RtI practices in comparison schools, even without involvement from the Florida PS/RtI Project. For example, the *Statewide Response to Instruction/Intervention (RtI) Implementation Plan* (Florida Department of Education, 2008), the Technical Assistance Paper (TAP) on RtI implementation (Florida Bureau of Exceptional Education and Student Services, 2008), and State mandates (e.g., Florida Administrative Code Rule 6A-

6.0331 [2009]) have all provided an impetus for Florida schools to implement PS/RtI practices with or without assistance from the Florida PS/RtI Project.

Measures

Since system-wide implementation of PS/RtI models has only recently been attempted in schools, empirically validated measures of the PS/RtI process were not yet available in the literature. For that reason, Project staff reviewed PS/RtI implementation initiatives from across the country in order to identify measures that were being used to evaluate PS/RtI implementation. The measures that the Project staff collected provided the basis for development of the evaluation tools used by the Florida PS/RtI Project.

Project staff also reviewed previous systems change literature, publications, and conference presentations to gain a better understanding of the big ideas and critical components of systems change initiatives. Previous literature highlighted the importance of building consensus, involving all stakeholders in the change process, and collecting data to measure implementation progress (Curtis, Castillo, & Cohen, 2008; Hall & Hord, 2006). Based on this information, Project staff constructed a number of PS/RtI implementation evaluation measures.

In order to examine consensus development, the Project staff developed surveys addressing several implementation issues. The current study used the three surveys that were developed to assess (1) educators' beliefs about the effectiveness of the model, (2) the degree to which educators perceive certain PS/RtI practices are occurring in their schools, and (3) the extent to which educators feel they have the skills needed to implement PS/RtI practices in their schools. An Educator Expert Validation Panel (EEVP) was used to review each of these instruments. Members of the EEVP were all educators from a nearby school district with some level of exposure to the PS/RtI model. Project staff listed types of school and district based personnel who would provide a representative sample of educators for the panel. This list was delivered to the district contact person, who compiled a list of names and contact information of personnel who meet the descriptions of personnel needed for the EEVP.

After receiving contact information of all EEVP members, Project staff sent a validation form for the instruments to each of the panel members. The validation forms were sent to five general education teachers, two special education teachers, three school administrators, two school psychologists, two guidance counselors, two social workers, one reading specialist, one behavior specialist, three district administrators, and three program supervisors. Panel members were asked to provide feedback on the content and clarity of each survey item, as well as recommendations for adding or removing items (See Appendix D for a copy of the validation forms). As an incentive for completing the validation forms, EEVP members were given a $100 stipend by the Project. Of the 24 members who received validation forms, completed forms were returned by 14 members, including forms from one general education teacher, two special education teachers, one school administrator, two school psychologists, two guidance counselors, two social workers, three district administrators, and one program supervisor. Project staff then reviewed feedback regarding the instruments and made necessary revisions. The following is a description of the measures that were used to collect data, which will be analyzed to evaluate PS/RtI implementation in the present study.

Beliefs Survey. The *Beliefs Survey* contained 27 items that assess educators' beliefs about the services that are provided to students. It was designed to assess educators’ educational philosophy and beliefs about assessment practices, core instruction, interventions, and special education services. The *Beliefs Survey* items used a 5-point Likert scale, which ranged from “1=strongly disagree” to “5=strongly agree” (See Appendix E for a copy of the *Beliefs Survey*). Individual educators at each of the pilot and comparison schools completed the *Beliefs Survey*. The content validity of the *Beliefs Survey* was examined using the EEVP procedures discussed above. A factor analysis and reliability analysis also were conducted to assess the technical adequacy of the *Beliefs Survey*. A common factor analysis was conducted using Statistical Analysis Software – Version 9.2 (SAS v. 9.2) on data collected from 2,430 *Beliefs Survey*s completed by educators in 62 schools in 7 districts across the state of Florida in the Fall of 2007. Based on an examination of the eigen values, the percent of variance explained by each factor, and the scree plot, three factors were retained. Factors were rotated using oblique rotation – Promax. The standardized regression coefficients were then examined in order to determine which items were best described by each of the three factors. All but 4 items loaded onto one of the three factors using .30 as the minimum requirement for standardized regression coefficients. Following the factor analysis procedures, Project staff interpreted the factors by examining the items loading on each factor. Factor 1 was named *Academic Ability and Performance of Students with Disabilities,* as the items measured educators’ beliefs about the abilities and performance of students with disabilities. Factor 2 was named *Data-Based Decision Making,* as it included items measuring beliefs about using data to make educational decisions. Factor 3 was named *Functions of Core and Supplemental Instruction,* as it included items measuring beliefs about the functions of core and supplemental instruction. Internal consistency reliability estimates were computed for the items that comprised each of the three factors. The following standardized Cronbach alpha coefficients were derived for each of the three factors: Factor 1: α= .8696, Factor 2: α= .7937, Factor 3: α= .8475.

Perceptions of Practices Survey. The *Perceptions of Practices Survey* was designed to assess educators' perceptions of the extent to which their schools were implementing PS/RtI practices. The 17 items on the *Perceptions of Practices Survey* assessed educator's perceptions using a 5-point Likert scale, which ranged from "1=never occurred" to "5=always occurred" (See Appendix F for a copy of the *Perceptions of Practices Survey*). Individual educators at each of the pilot and comparison schools completed the *Perceptions of Practices Survey*. The content validity of the *Perceptions of Practices Survey* was examined using the EEVP procedures discussed above. A factor analysis and reliability analysis also were conducted to assess the technical adequacy of the *Perceptions of Practices Survey*. A common factor analysis was conducted using SAS v. 9.2 on data collected from 2,140 *Perceptions of Practices Surveys* completed by educators in 62 schools from 7 districts across Florida during the Fall of 2007 to assess the technical adequacy of the instrument. Based on an examination of the eigen values, the percent of variance explained by each factor, and the scree plot, two factors were retained. Factors were rotated using oblique rotation – Promax. The standardized regression coefficients were then examined in order to determine which items were best described by each of the two factors. All items loaded onto the two factors using .30 as the minimum requirement for standardized regression coefficients. Following the factor analysis procedures, Project staff interpreted the factors by examining the items loading on each factor. Factor One was named *Perceptions of RtI Practices Applied to Academic*

Content, as it included items assessing perceptions of RtI practices for academics. Factor Two was named *Perceptions of RtI Practices Applied to Behavioral Content*, as it included items assessing perceptions of RtI practices for behavior. Internal consistency reliability estimates were computed for the items that comprised each of the two factors. The following standardized Cronbach alpha coefficients were derived for each of the two factors: Factor 1: α= .9566, Factor 2: α= .9711.

Perceptions of RtI Skills Survey. The *Perceptions of RtI Skills Survey* was designed by Project staff to assess the degree to which educators felt they had the skills to implement PS/RtI practices. The 20 items on the *Perceptions of RtI Skills Survey* assessed educator's perceptions about each item using a 5-point Likert scale, which ranged from "1=not skilled" to "5=very highly skilled" (See Appendix G for a copy of the *Perceptions of RtI Skills Survey*). Individual educators at each of the pilot and comparison schools completed the *Perceptions of RtI Skills Survey*. The content validity of the *Perceptions of RtI Skills Survey* was examined using the EEVP procedures discussed above. A factor analysis and reliability analysis also were conducted to assess the technical adequacy of the *Perceptions of RtI Skills Survey*. A common factor analysis was conducted using SAS v. 9.2 using data collected from 2,184 *Perceptions of RtI Skills Surveys* completed by educators in 62 schools in 7 districts across the state of Florida in the Fall of 2007. Based on an examination of the eigen values, the percent of variance explained by each factor, and the scree plot, three factors were retained. Factors were rotated using oblique rotation – Promax. The standardized regression coefficients were then examined in order to determine which items were best described by each of the three factors. All survey items loaded onto one of the three factors using .30 as the minimum requirement for standardized regression coefficients. Following the factor analysis procedures, Project staff interpreted the factors by examining the items loading on each factor. Factor 1 was named *Perceptions of RtI Skills Applied to Academic Content,* as items were best described as measuring educators' perceptions of RtI skills when addressing academic concerns. Factor 2 was named *Perceptions of RtI Skills Applied to Behavioral Content,* as items measured educators' perceptions of RtI skills when addressing behavior concerns. Factor 3 was named *Perceptions of Data Manipulation and Technology Use Skills*, as items measured educators' perceptions of skills in accessing, interpreting, and graphing data. Internal consistency reliability estimates were computed for items that comprised each of the three factors. The following standardized Cronbach alpha coefficients were derived for each of the three factors: Factor 1: α= .9759, Factor 2: α= .9735, Factor 3: α= .9430.

Tiers I and II Critical Components Checklist. The 15-item *Tiers I and II Critical Components Checklist* was designed to assess the degree to which the four steps of the PS/RtI process were present when educators evaluated core (Tier I) and/or supplemental (Tier II) instruction. Data collected using the instrument also were used to provide feedback to Project pilot schools regarding PS/RtI implementation. Three items assessed problem identification, two items assessed problem analysis, six items assessed intervention development and implementation, and four items assessed program evaluation/RtI. Coaches from the Florida PS/RtI Project completed the *Tiers I and II Critical Components Checklist* for pilot and comparison schools by examining permanent products (e.g., meeting notes) from meetings that addressed Tier I and II instruction. Permanent products were reviewed three times per year for each school (i.e., Fall, Winter, and Spring) in order to correspond with typical universal screening and assessment periods. During each assessment period, coaches completed one *Tiers I and II Critical Components Checklist* for each of the target areas (i.e., reading, math, or behavior) and grades (e.g., 1st, 2nd, 3rd) that schools indicated would be targeted for PS/RtI implementation. For example, if a school targeted PS/RtI implementation in reading for grades kindergarten through 2nd, a separate *Tiers I and II Critical Components Checklist* was completed for kindergarten reading, 1st grade reading, and 2nd grade reading at each of the three assessment periods. Note that the *Tiers I and II Critical Components Checklist* is a single instrument and was used to collect information on PS/RtI implementation related to both Tiers I and II. In order to facilitate PS/RtI implementation in the pilot schools, data collected through the use of the *Tiers I and II Critical Components Checklist* was graphed by Project staff and shared with School-Based Leadership Team (SBLT) members in pilot schools by PS/RtI coaches. While sharing the *Tiers I and II Critical Components Checklist* data, PS/RtI coaches assisted pilot school SBLT's in creating goals and action plans for increasing PS/RtI implementation. Data collected through the use of the *Tiers I and II Critical Components Checklist* was not shared with leadership or educational staff at the comparison schools. Each item on the *Tiers I and II Critical Components Checklist* was rated using a 3-point response scale in which 0 = Not present, 1 = Partially present, and 2 = Present. Overall, mean PS/RtI implementation scores were calculated by summing the ratings across all of the items and dividing by the total number of items (See Appendix H for a copy of the *Tiers I and II Critical Components Checklist*).

Content validity evidence of the *Tiers I and II Critical Components Checklist* was examined by comparing items to PS/RtI steps discussed in previous literature. Also, a second rater completed the *Tiers I and II Critical Components Checklist* at selected times during data collection. This procedure allowed for Project staff to determine the inter-rater agreement of raters completing the *Tiers I and II Critical Components Checklists*. Inter-rater agreement was determined by dividing the number of agreements on a checklist by the total number of checklist items (15). The average inter-rater agreement percentage for the 124 *Tiers I and II Critical Components Checklists* that were subject to a second rater was 91.89%, ranging from 60% to 100%.

Dynamic Indicators of Basic Early Literacy Skills (DIBELS). The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) included several standardized, individually administered subtests assessing students' early reading and fluency skills. Data generated from the DIBELS Phoneme Segmentation Fluency (PSF) and Nonsense Word Fluency (NWF) subtests were examined in the current study. The PSF subtest measures students' ability to segment three- and four-phoneme words into individual segments. It is typically administered to all students at the middle and end of kindergarten and the beginning, middle, and end of first grade. PSF scores are reported as the number of phonemes segmented correctly per minute. The NWF subtest measures students' ability to decode and blend nonsense word. It is typically administered to all students at the middle and end of kindergarten and the beginning, middle, and end of first grade. NWF scores are reported as the number of letter-sounds produced correctly in one minute. Concurrent, criterion-related validity coefficients of the DIBELS PSF and NWF subtests with the Woodcock-Johnson Psychoeducational Battery

Readiness Cluster score are .54 and .59, respectively. Predictive validity of the DIBELS PSF and NWF subtests range from .60 to .82. The two-week, alternate-form reliability of the PSF subtest is .88, while the one-month, alternate-form reliability of the NWF subtest is .83 (Good, Wallin, Simmons, Kame'enui, & Kaminski, 2002).

Office discipline referrals. Office discipline referrals (ODRs) are forms that are filled out by educators to refer a student to the school's main office as the result of a negative behavior incident. ODRs are typically used to monitor the behavior of students in schools, as well as provide evidence of the effectiveness of the core (Tier I) behavior program. Evidence has been provided to suggest that ODRs are a valid source of data to be used for decision-making about student behavior (Irvin, Horner, Ingram, Todd, Sugai, Sampson, & Boland, 2006). ODR frequency counts were collected and examined by school personnel anywhere from weekly to yearly, depending on the resources and behavior monitoring plan of a particular school. For the purpose of this study, the rate of ODRs per 100 students was calculated for each school and used in data analyses.

Placements in special education. Students are placed in special education when they are identified with a disability that is negatively impacting their educational performance. However, it has been suggested that ineffective instructional practices and biased assessment practices have led to higher number of referrals and placements than would be expected (Donovan & Cross, 2002). Researchers have shown that implementing evidence-based assessment and instructional practices can reduce the number of referrals and placements for special education (VanDerHeyden, Witt, & Gilbertson, 2007). This suggests that placements in special education can be used an evidence of effective core academic and behavioral programs. For the purpose of this study, the rate of placements in special education per 100 students was calculated for each school and used in data analyses.

School grades. In Florida, school grades have been issued since 1999, with the Florida Comprehensive Assessment Test (FCAT) being the primary criterion (FL DOE, 2010). School grades have been used to track schools based on the state's academic standards and Florida's School Accountability System. The following are the eight performance measures included in the overall grade for schools during the 2009-2010 school year.

> "Points were calculated as follows:
>
> 1. One point for each percent of students who meet high standards by scoring at or above FCAT Achievement Level 3 in reading.
> 2. One point for each percent of students who meet high standards by scoring at or above FCAT Achievement Level 3 in mathematics.
> 3. One point for each percent of students who meet high standards by scoring at or above FCAT Achievement Level 3 in science.
> 4. One point for each percent of students who meet high standards by scoring 3.5 or higher on the FCAT writing assessment. In the event that there are not at least 30 eligible students tested in writing, the district average in writing is substituted.
> 5. One point for each percent of students making learning gains in reading.
> 6. One point for each percent of students making learning gains in mathematics.

7. One point for each percent of the lowest performing students making learning gains in reading. In the event that there are not at least 30 eligible students, the school's reading learning gains are substituted.
8. One point for each percent of the lowest performing students making learning gains in mathematics. In the event that there are not at least 30 eligible students, the school's mathematics learning gains are substituted" (FL DOE, 2010).

The points that a school earned from the eight performance measures were added together and converted into the following school grading system: A (525 points and above), B (495-524), C (435-494), D (395-434), and F (Less than 395). It is important to note that the criteria for school grades remained consistent throughout the three years of Project implementation (i.e., 2007-2008, 2008-2009, 2009-2010).

Data Collection Procedures

Data used to address the research questions in this study were collected from several sources. The number of times each data collection instrument was used to gather information varied as well. The survey instruments which were designed by Florida PS/RtI Project staff in order to assess educator's beliefs, perceptions of school practices, and perceptions of skills (i.e., *Beliefs Survey, Perceptions of Practices Survey,* and *Perceptions of RtI Skills Survey*) were administered one or two times per year throughout the three-year program evaluation project. Each of these surveys were completed by members of School-Based Leadership Teams (SBLT) in each of the pilot schools, as well as the remaining school staff in each of the pilot and comparison schools. Survey data were collected from SBLT members at several PS/RtI Trainings by Regional

Coordinators and coaches. The Regional Coordinators and coaches were trained to provide directions to respondents and provide assistance in completing the surveys. Coaches also were responsible for collecting survey data from the remaining school staff at select times throughout the three-year project. Data typically were collected from the remaining school staff at school staff meetings. Graduate Assistants of the Florida PS/RtI Project manually entered the completed surveys into a database created by the Project. The Graduate Assistants were trained by Project staff prior to data entry. Fifteen percent of the entered surveys were randomly selected and checked for data entry errors by a Graduate Assistant who did not enter the particular surveys. Inter-rater agreement estimates were calculated by dividing the total number of data points entered correctly by the total number of data points that were entered. When inter-rater agreement estimates fell below 90%, a Graduate Assistant rechecked all of the manually entered data.

PS/RtI Project coaches also were responsible for collecting data for the implementation integrity measures (i.e., *Tiers I and II Critical Components Checklist)*. The *Tiers I and II Critical Components Checklist*, along with other integrity measures not used in this particular study, was completed three times per year for each pilot and comparison school. Prior to data collection, PS/RtI coaches received one and a half days of training on the implementation integrity measures from Project staff. The training focused on administration, scoring, and inter-rater agreement procedures. PS/RtI coaches also had opportunities to practice completing the integrity measures, practice calculating inter-rater agreement estimates, and ask questions regarding the integrity measures.

In order to complete the inter-rater agreement procedures, a PS/RtI coach coordinated with another PS/RtI coach or his/her Regional Coordinator to complete the integrity measure using the same permanent products from the initial review. Inter-rater agreement estimates were calculated by dividing the number of items agreed upon by the total number of items on the checklist. Inter-rater agreement estimates were calculated for approximately 15% of the integrity measure protocols and the target inter-rater agreement was 80% for each protocol. When 80% agreement was not met, the two scorers discussed the items for which there was disagreement and reached a consensus on how to score each item. Similar to data entry procedures for the surveys, integrity measures were manually entered into a database by Project Graduate assistants. The Graduate Assistants were trained by Project staff prior to data entry. Fifteen percent of the entered integrity measures were randomly selected and checked for data entry errors by a Graduate Assistant who did not enter the particular surveys. Inter-rater agreement estimates were calculated by dividing the total number of data points entered correctly by the total number of data points that were entered. When inter-rater agreement estimates fell below 90%, a Graduate Assistant rechecked all of the manually entered data.

District contacts facilitated the collection of student achievement (i.e., DIBELS) data. The district contacts were provided with protocols detailing the achievement data that was requested. One of the Project Evaluators met with district contacts to discuss data collection procedures. Data from the each district's management information system was sent to the Project Evaluators in electronic files. Project Graduate Assistants uploaded these files into a Project database upon receipt of the data from the district contact (See Appendix I for additional information on data collection and entry for individual student achievement data).

The final elements of data that were used in the current study included student office discipline referral (ODR) data and student placements in special education. These data were collected by district contacts or PS/RtI coaches. School districts that collected these data at the district level sent electronic files to Project staff. Trained Graduate Assistants then uploaded these files into a Project database. PS/RtI coaches collected these data elements in districts that did not collect data at the district level and provided the data to Graduate Assistants in an electronic file. Protocols for district data collection were provided to district contacts and PS/RtI coaches prior to data collection.

Data Analysis Procedures

Research questions were addressed using descriptive and inferential data analyses. Research question one examined change in levels of PS/RtI implementation as measured by the *Tiers I and II Critical Components Checklist,* in both pilot and comparison schools across the three years of the Florida PS/RtI Project. Research question two examined the relationship between school-level educator beliefs (*Beliefs Survey)*, perceptions of practices (*Perceptions of Practices Survey*) and skills (*Perceptions of RtI Skills Survey*), and the implementation of PS/RtI (*Tiers I and II Critical Components Checklist*) in pilot schools. Research question three examined the relationship between implementation of PS/RtI and student and systemic outcomes. For each research question, means and standard deviations were calculated for continuous variables and frequency data were calculated for categorical variables.

Multi-level modeling was the inferential analysis used to address each research question. Multi-level modeling allows researchers to investigate data in which cases are nested by examining the impact of variables at different levels on the dependent variable.

This is especially important in fields such as education, in which students are nested within schools, schools are nested within districts, and districts are nested within state and federal education agencies. Additionally, multi-level modeling allows researchers to examine variables at different levels without significantly decreasing statistical power. In the current study, all multilevel models were examined using Statistical Analysis Software - Version 9.2 (SAS v. 9.2).

Research question 1. *Is there a difference between pilot and comparison schools in changes in the level of PS/RtI implementation relative to reading over time?*

A two-level, multilevel model was employed to examine changes in the implementation of PS/RtI in pilot and comparison schools. The dependent measure for research question one was the implementation score, as measured by the *Tiers I and II Critical Components Checklist.* For the *Tiers I and II Critical Components Checklist*, the average implementation score across each year for each school was entered into the two-level model. Data were collected using the *Tiers I and II Critical Components Checklist* for the 2004-2005 through 2009-2010 school years. Time was entered at Level 1 of the two-level model. Entering time as a Level 1 variable allowed the researcher to use time to predict levels of PS/RtI implementation. Time was zero-centered and intercepts and slopes were initially allowed to vary. Next, the proportion of students in a school receiving free/reduced lunch and school grade were entered at Level 1 as time-varying covariates. The proportion of students in a school receiving free/reduced lunch was entered as a continuous variable for each school. School grade was entered as an interval variable and was coded so that a school grade of A = 4, B = 3, C = 2, D = 1, and F = 0. Both of these Level 1 time-varying covariates were grand mean centered to facilitate the interpretation of results. The interactions between each of the Level 1 time-varying covariates and time also were entered into the multilevel model.

Level 2 predictors included the school-level variables school type and district membership. For school type, pilot school was coded 1 and comparison school was coded 0. District membership also was dummy coded using five dummy coded variables (D1-D5) so that values of 1 represented membership in a given district (i.e., District B, District C, District D, District E, District F), while values of 0 represented non-membership. District G served as the reference district and was coded 0 on variables D1-D5. The interactions between each of the Level 2 variables and time also were entered into the multilevel model.

Research question 2. *What is the relationship between school-level beliefs, perceptions of educational practices, perceptions of PS/RtI skills, and levels of PS/RtI implementation in pilot schools?*

A two-level, multilevel model was employed to examine the relationships between school-level educator beliefs, perceptions of educational practices, and perceptions of skills, and the implementation of PS/RtI in pilot schools. The dependent measure was the implementation score, as measured by the *Tiers I and II Critical Components Checklist.* For the *Tiers I and II Critical Components Checklist*, the average implementation score across each year for each school was entered into the two-level model. Time was entered as a Level 1 predictor. Entering time as a Level 1 predictor allowed the researcher to use time to predict levels of PS/RtI implementation. Time was zero-centered and intercepts and slopes were initially allowed to vary. Next, the same predictors that were entered into the previous model (i.e., proportion of students in a school receiving free/reduced lunch and school grade) were entered at Level 1 as time-varying covariates. Both Level 1 time-varying covariates were grand mean centered to facilitate the interpretation of results. The interactions between each of the Level 1 time-varying covariates and time also were entered into the multilevel model.

Level 2 predictors included the school-level variable district membership, as well as the mean factor scores for each of the school-level educator variables (i.e., beliefs, perceptions of practices, perceptions of skills). The mean factor score for each of the educator variables was computed at the school level and entered into the final two-level model. The interactions between each of the Level 2 variables and time also were entered into the final multilevel model.

Research question 3. *What is the relationship between changes in the level of PS/RtI implementation in pilot schools and the following student and systemic outcomes?*

a. *Student Outcome*
    i. *Initial Student Reading Performance*
b. *Systemic Outcomes*
    i. *Rate of office discipline referrals (ODRs)*
    ii. *Rate of placements in special education*

Research question three addressed the relationship between the implementation of PS/RtI and student and systemic outcomes over time. Student (i.e., initial student reading performance) and systemic (i.e., rate of office discipline referrals, rate of placements in special education) outcomes were entered as the dependent variables in four separate two-level HLM models. For initial student reading performance, the average kindergarten, end of year DIBELS Phonemic Segmentation Fluency (PSF) and Nonsense

Word Fluency (NWF) subtest scores for each school were entered as the dependent variables in two, separate two-level multilevel models. The PSF and NWF subtests were selected as the student outcome measure because they are predictive of reading growth at end of kindergarten (Kaminski & Good, 1996) and previous PS/RtI evaluation efforts have used kindergarten, end of year PSF and NWF scores as indicators of initial student reading outcomes (Tilly, 2003). Finally, since the majority of Project demonstration districts included kindergarten reading as a focus for Tier I and II PS/RtI implementation, including end of year, kindergarten reading measures seemed appropriate. Two separate, two-level multilevel models also were employed to examine the relationship between PS/RtI implementation and the rate of office discipline referrals (ODRs) and the rate of placements in special education. For rate of office discipline referrals (ODRs), the ratio of the total number of ODRs per 100 students for each school year was calculated for each pilot school. For rate of placements in special education, the ratio of the total number of occurrences per 100 students per year for special education placements was calculated for each pilot school.

Time was entered as a Level 1 predictor. Entering time as a Level 1 predictor allowed the researcher to use time to predict the student and systemic outcome variables. Time was zero-centered and intercepts and slopes were initially allowed to vary. Next, the same predictors that were entered into the previous models (i.e., proportion of students in a school receiving free/reduced lunch and school grade) were entered at Level 1 as time-varying covariates. In addition, the average PS/RtI implementation score (as measured by the *Tiers I and II Critical Components Checklist*) across each year for each school was entered into the multilevel model as a Level 1 time-varying covariate. All three Level 1, time-varying covariates were grand mean centered to facilitate the interpretation of results. The interactions between each of the Level 1 time-varying covariates and time also were entered into the multilevel model.

The only Level 2 predictor entered into the multilevel model was district membership. District membership also was dummy coded using five dummy coded variables (D1-D5) so that values of 1 represented membership in a given district (i.e., District B, District C, District D, District E, District F), while values of 0 represented non-membership. District G served as the reference district and was coded 0 on variables D1-D5. The interactions between each of the Level 2 variables and time also were entered into the multilevel model.

Chapter Four

Results

This chapter begins with a brief overview of the procedures used to determine the degree to which the assumptions of multilevel models were met and the procedures used to determine whether intercepts and slopes of the multilevel models were allowed to vary or were fixed. Next, the results from each research question are presented. For each model that was examined, data describing the extent to which the assumptions of multilevel modeling were met, descriptive statistics for outcome and predictor variables, and the multilevel model results are presented. Finally, summaries of the results of each research question are presented.

Assumptions of multilevel model procedures were examined prior to conducting descriptive or inferential analyses. The statistical assumptions of multilevel models examined were the degree to which the data were (1) normally distributed, (2) randomly distributed when data were missing, and (3) nested. In order to examine the degree to which data were normally distributed, the skewness and kurtosis of the dependent measures, as well as the continuous predictors, entered into the multilevel models were examined. Although the degree to which the data were normally distributed is discussed for each model, multilevel models are typically robust to violations of this assumption (Raudenbush & Bryk, 2002). For all multilevel models examined below, the only missing data were at Level 1. The missing data resulted from two pilot schools not being open during the baseline data collection period (2006-2007) and one comparison school closing prior to the final year of the Project (2009-2010). While the missing data are a concern, missing data at Level 1 of multilevel models estimated using restricted maximum likelihood (REML) procedures typically do not present problems (Rubin, 1989). No school-level data were missing at Level 2. The degree to which the data were nested was examined by calculating the intra-class correlations (ICC) for each multilevel model. ICCs estimate the shared variance across levels of the models and higher ICCs typically indicate that multilevel model procedures are appropriate to use (Raudenbush & Bryk, 2002).

The assumption of normality of residual variances also was examined. For each multilevel model, a scatterplot and a stem and leaf plot of the predicted residuals was examined. The scatterplots and stem and leaf plots of the predicted residuals for each of the multilevel models are presented in Appendix J.

In order to determine the extent to which intercepts and slopes were allowed to vary, a decision tree was constructed prior to running the multilevel models. Since it was hypothesized that intercepts and slopes across the predictors would likely vary, all models were first constructed using an unstructured covariance matrix and intercepts and slopes were allowed to vary. For the multilevel models that did not converge using this initial matrix, the following steps were used:

1. First, a Variance Components matrix was used so that covariances were forced to be zero, but intercepts and slopes were allowed to vary.

2. If the model would not converge using the Variance Components matrix, an unstructured covariance matrix was used, but slopes were fixed.

Using this decision tree, all of the multilevel models in this study converged. Continuous and categorical predictors were grand mean and zero centered, respectively, to facilitate with interpretation of the models. Given the small Level 2 sample size (j = 55), all multilevel models were estimated using restricted maximum likelihood (REML) procedures. Indicators of multilevel model fit (i.e., AIC, BIC, deviance) also were examined for the Level 1 model and the final two-level model. The alpha level was set at .05 for all models. A summary of results for each research question addressed in this study is provided below.

Research Question 1

Is there a difference between pilot and comparison schools in changes in level of PS/RtI implementation relative to reading over time?

A two-level, multilevel model was used to address this research question. The dependent variable for the multilevel model was the PS/RtI implementation score for each school as measured by the *Tiers I and II Critical Components Checklist* relative to reading. PS/RtI implementation was measured at the school level.

School Type Predicting Changes in PS/RtI Implementation

Assumptions. First, the normality assumption was examined for the PS/RtI implementation data, as well as the Level 1 and Level 2 predictors to be entered into the model. Skewness and kurtosis values for the mean PS/RtI implementation score were .83 and -0.45, respectively, indicating a relatively normal distribution. Skewness values for the Level 1 and Level 2 continuous predictors ranged from -1.41 to -0.33. Kurtosis values for the Level 1 and Level 2 continuous predictors ranged from -1.25 to 1.21. These two statistics indicated relative normality in the distribution of the Level 1 and Level 2 continuous predictors.

Finally, the assumption that data were nested was examined by calculating the ICC from the unconditional model. The ICC estimate derived was .37, indicating that the data were nested and multilevel model procedures were appropriate for this model.

Descriptive data. The school-level PS/RtI implementation score was derived by computing the mean of the ratings on items on the *Tiers I and II Critical Components Checklist* for each school. Specifically, the mean of the ratings for all PS/RtI implementation relative to reading within a given school was used as a mean PS/RtI implementation score for each participating school. As discussed in Chapter 3, the *Tiers I and II Critical Components Checklist* is a permanent products measure of PS/RtI implementation for a given school. PS/RtI implementation relative to reading was chosen as an outcome variable because six of the seven demonstration districts chose to target PS/RtI implementation with a focus on reading for the purposes of the PS/RtI Project. One district (District A), which included six participating schools, chose to target PS/RtI implementation with a focus on mathematics. Therefore, only data from schools (n = 55) in the six demonstration districts that chose to target PS/RtI implementation relative to reading were included in the multilevel models that addressed this research question.

PS/RtI implementation scores were calculated at each of the four time points (Baseline = 2006-2007, End of Year 1 = 2007-2008, End of Year 2 = 2008-2009, and End of Year 3 = 2009-2010) for pilot and comparison schools to determine changes in school-level PS/RtI implementation relative to reading over time. Scores for pilot and comparison schools were examined to investigate potential changes in PS/RtI implementation for schools that were exposed to different levels of training and technical assistance relative to Problem-Solving/Response to Intervention implementation.

Table 1 reports descriptive statistics for PS/RtI implementation score obtained from the *Tiers I and II Critical Components Checklist* relative to reading by school type (pilot versus comparison) at each of the four time points. From a review of these data, it appears that PS/RtI implementation scores increased over time for both pilot schools (*n* = 31) and comparison schools (*n* = 24). However, differences appear to exist between the pilot and comparison schools on the PS/RtI implementation scores at the baseline (2006-2007), as well as on the amount of change in PS/RtI implementation scores across time.

Pilot schools had a higher mean PS/RtI implementation score (Mean = 0.23) at the baseline compared to comparison schools (Mean = 0.15). Additionally, while the mean implementation scores for both school types appeared to increase over time, the mean implementation score for pilot schools at Year 3 (Mean = 1.20) seem to be higher than that for the comparison schools at Year 3 (Mean = 0.68).

Table 1

Descriptive Statistics for PS/RtI Implementation Scores by School Type and Time

School Type/Time	n^a	Mean (SD)	Skewness	Kurtosis
Pilot Schools	31	0.75 (.57)	0.38	-1.03
Baseline	29	0.23 (.24)	1.71	3.30
Year 1	31	0.62 (.44)	0.15	-1.41
Year 2	31	0.93 (.52)	0.07	-1.12
Year 3	31	1.20 (.51)	-0.40	-0.54
Comparison Schools	24	0.36 (.41)	1.67	2.41
Baseline	24	0.15 (.16)	1.44	2.16
Year 1	24	0.25 (.23)	.85	-0.03
Year 2	24	0.35 (.37)	0.92	-0.55
Year 3	23	0.68 (.58)	0.64	-0.94

Note. [a]*n* represents the number of schools.

Descriptive data also were examined for the two Level 1 time-varying covariates (i.e., proportion of students in a school receiving free/reduced lunch and school grade), as well as the Level 2 variables (i.e., school type, district membership) that were entered into the model as predictors of PS/RtI implementation scores. The values for the proportion of students in a school receiving free/reduced lunch (a proxy for school SES) and school grade varied across the four time points, and thus were included in the model as Level 1 time-varying covariates. School type (i.e., pilot versus comparison school) and district membership remained constant over time, and thus were included in the model as

Level 2, school-level predictors. The descriptive statistics were calculated differently for the Level 1 and Level 2 variables. For the Level 1 time-varying covariates, the means and standard deviations were computed (see Table 2). For the Level 2 variables, frequency data were computed and are reported in Table 3.

Level 1 time-varying covariate data were available from 53, 55, 55, and 54 of the 55 participating schools at baseline, Year 1, Year 2, and Year 3, respectively. Level 1 time-varying covariate data were not available at the baseline time point for two pilot schools from one demonstration district (District C) which were not yet open during the baseline data collection year (2006-2007) and for one comparison school in District D at Year 3, as the school closed prior to the final year of data collection (2009-2010).

Table 2

Descriptive Statistics for Level 1 Time-Varying Covariates by Time

Time-Varying Covariates/Time	n^a	Mean (SD)	Skewness	Kurtosis
Proportion Receiving Free-Reduced Lunch	55	0.50 (.83)	-0.33	-1.25
Baseline	53	0.46 (.24)	-0.35	-1.43
Year 1	55	0.48 (.24)	-0.36	-1.33
Year 2	55	0.52 (.25)	-0.34	-1.30
Year 3	54	0.55 (.25)	-0.41	-1.14
School Grade	55	3.47 (.83)	-1.41	1.20
Baseline	53	3.51 (.75)	-1.17	-0.16
Year 1	55	3.55 (.79)	-1.56	1.32
Year 2	55	3.62 (.65)	-1.50	1.02
Year 3	54	3.20 (1.03)	-1.06	0.32

Note. [a]*n* represents the number of schools.

Table 3

Descriptive Statistics for Level 2 Predictors

Level 2 Predictors	*n*[a]	Percent (%)
School Type	-	-
Pilot School	31	56.6
Comparison School	24	43.6
District Membership	-	-
District B	8	14.5
District C	12	21.8
District D	12	21.8
District E	6	10.9
District F	12	21.8
District G	5	9.1

Note. [a]*n* represents the number of schools.

Multilevel model results. A two-level multilevel model was employed to determine differences between pilot and comparison schools regarding PS/RtI implementation. The mean PS/RtI implementation score on the *Tiers I and II Critical Components Checklist* relative to reading implementation for each participating school was entered as the dependent variable in the multilevel model. Time was entered as a Level 1 predictor of PS/RtI implementation and was zero centered to facilitate the interpretation of results (Model 1). Next, the proportion of students in a school receiving free/reduced lunch was entered as a continuous variable for each school. School grade was entered as an interval variable and was coded so that a school grade of A = 4, B = 3, C = 2, D = 1, and F = 0. Both of these Level 1 time-varying covariates were grand mean centered to facilitate the interpretation of results. The interactions between each of the Level 1 time-varying covariates and time also were entered into the multilevel model (Model 2).

Level 2 predictors included the school-level variables school type and district membership. For school type, pilot school was coded 1 and comparison school was coded 0. District membership also was dummy coded using five dummy coded variables (D1-D5) so that values of 1 represented membership in a given district (i.e., District B, District C, District D, District E, District F), while values of 0 represented non-membership. District G served as the reference district and was coded 0 on variables D1-D5. The interactions between each of the Level 2 variables and time also were entered into the multilevel model (Model 3). The final two-level multilevel model did not converge when intercepts and slopes were allowed to vary; but did converge after the slopes were fixed. The final two-level model for PS/RtI implementation is given below:

> Mean PS/RtI Reading Implementation Score = γ_{000} + γ_{001} (Pilot School Membership) + γ_{002} (Proportion of Students Receiving Free/Reduced Lunch) + γ_{003} (School Grade) + γ_{004} (District B) + γ_{005} (District C) + γ_{006} (District D) + γ_{007} (District E) + γ_{008} (District F) + γ_{100} (Time) + γ_{101} (Pilot School Membership*Time) + γ_{102} (Proportion of Students Receiving Free/Reduced Lunch*Time) + γ_{103} (School Grade*Time) + γ_{104} (District B*Time) + γ_{105} (District C*Time) + γ_{106} (District D*Time) + γ_{107} (District E*Time) + γ_{108} (District F*Time) + ε_{000} + μ_{000} + r_{100}

Time was entered as a Level 1 predictor to determine if the increases in school-level PS/RtI implementation relative to reading were statistically significant. Time, when entered alone without any Level 1 or Level 2 predictors significantly predicted mean

PS/RtI implementation scores relative to reading (Estimate = 0.25, $t = 14.40$, $p < .01$). These findings indicate that school-level implementation scores on the *Tiers I and II Critical Components Checklist* relative to reading increased significantly from baseline to Year 3. Next, the Level 1 time-varying covariates were entered into the model. When the Level 1 predictors were entered into the model, time remained a significant predictor (Estimate = 0.18, $t = 4.79$, $p < .01$) after controlling for the other predictors in the model. Finally, the Level 2 predictors were added to yield the final two-level model. Results of the final two-level model showing the degree to which each predictor entered into the model contributed to the mean PS/RtI implementation scores are reported in Table 4 below. When the Level 1 and Level 2 predictors were entered into the final two-level model, time remained a significant predictor (Estimate = 0.21, $t = 4.26$, $p < .01$) after controlling for the other predictors in the model.

Table 4

Multilevel Modeling Results for School Type Predicting Changes in PS/RtI Implementation Relative to Reading

Predictors	Estimate	SE	*t*	*p*
PS/RtI Reading Implementation Intercept	-0.01	0.10	-0.13	.90
Time (Slope)	0.22	0.05	4.26*	< .01
Level 1				
Intercepts				
Proportion Students Receiving Free/Reduced Lunch	-0.27	0.16	-1.64	.10
School Grade	-0.06	0.05	-1.25	.21
Slope				
Proportion Students Receiving Free/Reduced Lunch*Time	0.08	0.08	0.97	.34
School Grade*Time	0.02	0.02	0.94	.35
Level 2				
Intercepts				
Pilot School Membership	0.19	0.06	3.12*	< .01
District B Membership	-0.01	0.13	-0.05	.96
District C Membership	0.06	0.12	0.53	.59
District D Membership	-0.09	0.12	-0.75	.45
District E Membership	0.30	0.13	2.26*	.02
District F Membership	0.32	0.12	2.68*	< .01

Table 4 continued

Multilevel Modeling Results for School Type Predicting Changes in PS/RtI Implementation Relative to Reading

Predictors	Estimate	SE	*t*	*P*
District G Membership	0	-	-	-
Slope				
Pilot School Membership*Time	0.18	0.03	5.99*	< .01
District B Membership*Time	-0.25	0.06	-4.10*	< .01
District C Membership*Time	-0.08	0.06	-1.44	.15
District D Membership*Time	-0.09	0.06	-1.63	.11
District E Membership*Time	-0.09	0.06	-1.40	.16
District F Membership*Time	0.11	0.06	1.94	.05
District G Membership*Time	0	-	-	-
Model Fit Statistics				
AIC	81.6			
BIC	85.6			
Deviance	77.6			

Note. * $p < .05$.
[a]District A was not included in analyses because it did not target PS/RtI implementation relative to reading.

As is shown, several Level 1 and Level 2 variables also predicted initial mean PS/RtI implementation scores relative to reading as measured by the *Tiers I and II Critical Components Checklist*. Pilot school membership significantly predicted initial mean implementation scores (Estimate = 0.19, $t = 3.12$, $p < .01$) after controlling for the other predictors in the model. Membership in District E (Estimate = 0.30, $t = 2.26$, $p = .02$) and District F (Estimate = 0.32, $t = 2.68$, $p < .01$) also predicted initial mean implementation scores (see Table 4). These results indicate that pilot school membership, as well membership in Districts E and F, predicted higher initial mean implementation scores relative to reading after controlling for the other predictors in the model.

When the interactions between the Level 1 and Level 2 variables and time were examined, several variables significantly predicted changes in mean PS/RtI implementation scores relative to reading over time. Pilot school membership significantly predicted increases in the mean implementation scores relative to reading (Estimate = 0.18, $t = 5.99$, $p < .01$). Conversely, membership in District B significantly predicted decreases in mean implementation scores relative to reading over time (Estimate = -0.25, $t = -4.10$, $p < .01$) after controlling for the other predictors in the model.

Random effects for intercepts at the school level were examined to determine if there was significant variation in mean PS/RtI implementation scores relative to reading. At the school level intercepts varied significantly (Estimate = 0.01, SE = 0.001, $z = 1.67$, $p = .05$), indicating that the mean PS/RtI implementation scores relative to reading differed across the schools. The random effects for slopes were not examined because slopes were fixed in the final multilevel model.

The model fit statistics also were examined to determine if adding the Level 1 and Level 2 variables increased the fit of the full two-level model. A review of the fit statistics shows that both the AIC and BIC decreased from the unconditional model (AIC = 323.2, BIC = 327.2) to the full two-level model (AIC = 81.6, BIC = 85.6), indicating that adding the Level 1 and Level 2 predictors increased the fit of the model.

Next, the residual variance was examined to determine the level of unexplained variance in mean PS/RtI implementation scores after the predictors were entered into the full two-level model. Residual variance was significant in the full two-level model (Estimate = 0.06, SE = 0.006, $z = 8.74$, $p < .01$), indicating that the predictors entered into the multilevel model did not explain all of the variance in mean PS/RtI implementation scores as measured by the *Tiers I and II Critical Components Checklist*. However, the estimate of residual variance decreased from the unconditional model (Estimate = 0.19) to the full two-level model (Estimate = 0.06), indicating that adding the selected variables increased the predictive power of the multilevel model.

Finally, the normality of the residual variances was examined through two visual analyses. Visual analyses of both the scatterplot and stem and leaf plot of the predicted residual variances suggest a relatively normal distribution of the residuals. The scatterplots and stem and leaf plots of the predicted residuals for each of the multilevel models are presented in Appendix J.

Research Question 2

> What is the relationship between school-level educator beliefs, perceptions of educational practices, perceptions of PS/RtI skills, and levels of PS/RtI implementation in pilot schools?

A two-level, multilevel model was used to address this research question. The dependent variable for the multilevel model was the PS/RtI implementation score for each school as measured by the *Tiers I and II Critical Components Checklist* relative to reading. PS/RtI implementation was measured at the school level.

Educator Variables Predicting Changes in PS/RtI Implementation

Assumptions. First, the normality assumption was examined for the PS/RtI implementation data, as well as the Level 1 and Level 2 predictors to be entered into the model. Skewness and kurtosis values for the mean PS/RtI implementation score were .38 and -1.05, respectively, indicating a relatively normal distribution. Skewness values for the Level 1 and Level 2 continuous predictors ranged from -1.53 to 1.22. Kurtosis values for the Level 1 and Level 2 continuous predictors ranged from -0.97 to 2.20. These two statistics indicated relative normality in the distribution of the Level 1 and Level 2 continuous predictors.

Finally, the assumption that data were nested was examined by calculating the ICC from the unconditional model. The ICC estimate derived was .23, indicating that the data were nested and multilevel model procedures were appropriate for this model.

Descriptive data. The school-level PS/RtI implementation score was derived by computing the mean of the ratings on items on the *Tiers I and II Critical Components Checklist* for each pilot school. Specifically, the mean of the ratings for all PS/RtI implementation relative to reading within a given school was used as a mean PS/RtI implementation score for each participating school. PS/RtI implementation relative to reading was chosen as an outcome variable because six of the seven demonstration districts chose to target PS/RtI implementation with a focus on reading for the purposes of the PS/RtI Project. One district (District A), which included six participating schools, chose to target PS/RtI implementation with a focus on mathematics. Therefore, only data from pilot schools (n = 31) in the six demonstration districts that chose to target PS/RtI implementation relative to reading were included in the multilevel models that addressed this research question.

PS/RtI implementation scores were calculated at each of the four time points (Baseline = 2006-2007, End of Year 1 = 2007-2008, End of Year 2 = 2008-2009, and End of Year 3 = 2009-2010) for pilot schools to determine changes in school-level PS/RtI implementation relative to reading over time. Only PS/RtI implementation scores for pilot schools were examined in order to investigate potential changes in implementation for schools that were exposed to training and technical assistance relative to PS/RtI implementation.

Table 5 reports descriptive statistics for PS/RtI implementation score obtained from the *Tiers I and II Critical Components Checklist* relative to reading at each of the four time points. From a review of these data, it appears that PS/RtI implementation scores increased over time for pilot schools (n = 31).

Table 5

Descriptive Statistics for Pilot Schools' PS/RtI Implementation Scores by Time

School Type/Time	n^a	Mean (SD)	Skewness	Kurtosis
Pilot Schools	31	0.75 (0.57)	0.38	-1.05
Baseline	29	0.23 (0.24)	1.70	3.27
Year 1	31	0.62 (0.44)	0.15	-1.41
Year 2	31	0.94 (0.53)	0.06	01.20
Year 3	31	1.20 (0.51)	-0.40	-0.54

Note. [a]*n* represents the number of schools.

The Level 1 variables entered into the multilevel model predicting PS/RtI implementation relative to reading in pilot schools were the same as the variables entered into the multilevel model predicting PS/RtI implementation described earlier. However, descriptive data for these variables were different due to the slightly different sample size (i.e., inclusion of only pilot schools in this model). The Level 2 variables entered into the model included district membership, as well as the school-level educator variables (i.e., beliefs, perceptions of educational practices, and perceptions of skills). The mean factor score for each of the educator variables (as measured by the *Beliefs Survey, Perceptions of Practices Survey,* and *Perceptions of RtI Skills Survey*) was computed during the baseline data collection period (i.e., beginning of Year 1) at the school-level and entered into the final two-level model. The descriptive statistics for the continuous Level 1 and Level 2 variables entered into the model are reported in Tables 6 and 7, respectively. The descriptive statistics for the categorical variable entered into the model are reported in Table 8.

Table 6

Descriptive Statistics for Level 1 Time-Varying Covariates by Time

Time-Varying Covariates/Time	*n*[a]	Mean (SD)	Skewness	Kurtosis
Proportion Receiving Free-Reduced Lunch	31	0.52 (0.24)	-0.53	-0.97
Baseline	29	0.48 (0.23)	-0.59	-1.08
Year 1	31	0.50 (0.23)	-0.59	-1.03
Year 2	31	0.54 (0.24)	-0.56	-0.98
Year 3	31	0.57 (0.25)	-0.63	-0.80
School Grade	31	3.46 (0.85)	-1.53	1.84
Baseline	29	3.55 (0.74)	-1.34	0.34
Year 1	31	3.48 (0.85)	-1.51	1.27
Year 2	31	3.65 (0.61)	-1.55	1.50
Year 3	31	3.16 (1.10)	-1.15	0.67

Note. [a]*n* represents the number of schools.

Table 7

Descriptive Statistics for Continuous Level 2 Predictors

Level 2 Predictors	*n*[a]	Mean (SD)	Skewness	Kurtosis
Beliefs Factor 1	31	2.96 (0.32)	1.22	1.09
Beliefs Factor 2	31	3.83 (0.13)	0.16	-0.54
Beliefs Factor 3	31	4.01 (0.17)	0.50	-0.19
Practices Factor 1	31	4.03 (0.27)	-0.33	0.42
Practices Factor 2	31	3.46 (0.29)	0.002	2.20
Skills Factor 1	31	3.40 (0.28)	-0.004	-0.43
Skills Factor 2	31	3.17 (0.30)	0.37	-0.06
Skills Factor 3	31	2.86 (0.34)	0.57	0.15

Note. [a]*n* represents the number of schools.

Table 8

Descriptive Statistics for Categorical Level 2 Predictors

Level 2 Predictors	n^a	Percent (%)
District Membership	-	-
District B	6	19.4
District C	7	22.6
District D	6	19.4
District E	3	9.7
District F	6	19.4
District G	3	9.7

Note. [a]*n* represents the number of schools.

Multilevel model results. A two-level multilevel model was employed to determine the relationship between school-level educator variables and PS/RtI implementation in pilot schools. The mean PS/RtI implementation score on the *Tiers I and II Critical Components Checklist* relative to reading implementation for each participating school was entered as the dependent variable in the multilevel model. Time was entered as a Level 1 predictor of school-level PS/RtI implementation and was zero centered to facilitate the interpretation of results (Model 1). Next, the same Level 1 time-varying covariates that were entered into the multilevel model predicting changes in PS/RtI implementation described earlier were entered into this model. The interactions between each of the Level 1 time-varying covariates and time also were entered into the model (Model 2).

Level 2 predictors included the school-level variable district membership, as well as the mean factor scores for each of the school-level educator variables (i.e., beliefs, perceptions of practices, perceptions of skills). The mean factor score for each of the educator variables was computed at the school level and entered into the final two-level model. The interactions between each of the Level 2 variables and time also were entered into the multilevel model (Model 3). The final two-level multilevel model did not converge when intercepts and slopes were allowed to vary; but did converge after the slopes were fixed. The final two-level model for PS/RtI implementation in pilot schools is given below:

> Mean PS/RtI Reading Implementation Score = γ_{000} + γ_{001} (Proportion of Students Receiving Free/Reduced Lunch) + γ_{002} (School Grade) + γ_{003} (Beliefs Factor 1) + γ_{004} (Beliefs Factor 2) + γ_{005} (Beliefs Factor 3) + γ_{006} (Practices Factor 1) + γ_{007} (Practices Factor 2) + γ_{008} (Skills Factor 1) + γ_{009} (Skills Factor 2) + γ_{010} (Skills Factor 3) + γ_{011} (District B) + γ_{012} (District C) + γ_{013} (District D) + γ_{014} (District E) + γ_{015} (District F) + γ_{100} (Time) + γ_{101} (Proportion of Students Receiving Free/Reduced Lunch*Time) + γ_{102} (School Grade*Time) + γ_{103} (Beliefs Factor 1*Time) + γ_{104} (Beliefs Factor 2*Time) + γ_{105} (Beliefs Factor 3*Time) + γ_{106} (Practices Factor 1*Time) + γ_{107} (Practices Factor 2*Time) + γ_{108} (Skills Factor 1*Time) + γ_{109} (Skills Factor 2*Time) + γ_{110} (Skills Factor 3*Time) + γ_{111} (District B*Time) + γ_{112} (District C*Time) + γ_{113} (District D*Time) + γ_{114} (District E*Time) + γ_{115} (District F*Time) + ε_{000} + μ_{000} + r_{100}

Time was entered as a Level 1 predictor to determine if the change in school-level PS/RtI implementation relative to reading in pilot schools was statistically significant. Time, when entered alone without any Level 1 or Level 2 predictors significantly predicted mean PS/RtI implementation scores relative to reading (Estimate = 0.32, t = 10.42, $p < .01$). These findings indicate that school-level PS/RtI implementation scores on the *Tiers I and II Critical Components Checklist* relative to reading increased significantly from baseline to Year 3 in pilot schools over time. Next, the Level 1 time-varying covariates were entered into the model. When the Level 1 predictors were entered into the model, time remained a significant predictor (Estimate = 0.33, $t = 10.46$, $p < .01$) of PS/RtI implementation after controlling for the other predictors in the model. Finally, the Level 2 predictors were added to yield the final two-level model. Results of the final two-level model showing the degree to which each predictor entered into the model contributed to the mean PS/RtI implementation scores in pilot schools are reported in Table 9 below. When the Level 1 and Level 2 predictors were entered into the final two-level model, time remained a significant predictor (Estimate = 0.47, $t = 6.48$, $p < .01$) of PS/RtI implementation after controlling for the other predictors in the model.

Table 9

Multilevel Modeling Results for Educator Variables Predicting PS/RtI Implementation in Pilot Schools

Predictors	Estimate	SE	*t*	*P*
Pilot Schools' PS/RtI Reading Implementation Intercept	0.14	0.16	0.86	.39
Time (Slope)	0.46	0.08	5.76*	< .01
Level 1				
Intercepts				
Proportion Students Receiving Free/Reduced Lunch	-0.09	0.33	-0.29	.77
School Grade	-0.03	0.09	-0.32	.75
Slope				
Proportion Students Receiving Free/Reduced Lunch*Time	0.03	0.16	0.21	.83
School Grade*Time	0.01	0.04	0.14	.89
Level 2				
Intercepts				
Beliefs Factor 1	0.44	0.29	1.53	.13
Beliefs Factor 2	-0.18	0.62	-0.29	.77
Beliefs Factor 3	0.07	0.63	0.11	.91
Practices Factor 1	-0.70	0.52	-1.35	.18

Table 9 continued

Multilevel Modeling Results for Educator Variables Predicting PS/RtI Implementation in Pilot Schools

Predictors	Estimate	SE	*t*	*P*
Practices Factor 2	0.18	0.37	0.48	.63
Skills Factor 1	0.42	0.66	0.63	.53
Skills Factor 2	-0.31	0.49	-0.64	.52
Skills Factor 3	0.03	0.34	0.09	.93
District B Membership	0.15	0.24	0.64	.52
District C Membership	< -0.01	0.23	-0.01	.99
District D Membership	-0.15	0.21	-0.69	.49
District E Membership	0.34	0.28	1.23	.22
District F Membership	0.53	0.23	2.30*	.02
District G Membership	0	-	-	-
Slope				
Beliefs Factor 1*Time	-0.15	0.14	-1.09	.28
Beliefs Factor 2*Time	0.19	0.31	0.61	.54
Beliefs Factor 3*Time	-0.39	0.31	-1.26	.21
Practices Factor 1*Time	0.25	0.25	1.03	.31
Practices Factor 2*Time	0.04	0.18	0.24	.81
Skills Factor 1*Time	0.01	0.33	0.04	.97
Skills Factor 2*Time	-0.07	0.24	-0.29	.77

Table 9 continued

Multilevel Modeling Results for Educator Variables Predicting PS/RtI Implementation in Pilot Schools

Predictors	Estimate	SE	*t*	*P*
Skills Factor 3*Time	0.11	0.17	0.63	.53
District B Membership*Time	-0.46	0.12	3.97*	< .01
District C Membership*Time	-0.04	0.11	-0.32	.75
District D Membership*Time	-0.15	0.10	-1.44	.15
District E Membership*Time	-0.10	0.14	-0.76	.45
District F Membership*Time	-0.07	0.11	-0.58	.56
District G Membership*Time	0	-	-	-
Model Fit Statistics				
AIC	86.9			
BIC	89.8			
Deviance	82.9			

Note. * $p < .05$.
[a]District A was not included in analyses because it did not target PS/RtI implementation relative to reading.

As is shown, one Level 2 variable predicted pilot schools' initial mean PS/RtI implementation scores relative to reading as measured by the *Tiers I and II Critical Components Checklist*. Specifically, membership in District F significantly predicted initial mean implementation scores (Estimate = 0.53, $t = 2.30$, $p = .02$) after controlling for the other predictors in the model (See Table 9). These results indicate that membership in District F predicted higher initial mean implementation scores relative to reading in pilot schools after controlling for the other predictors in the model. Initial school-level educator beliefs, perceptions of skills, and perceptions of educational practices were not found to significantly predict mean PS/RtI implementation scores at the school-level.

When the interactions between the Level 1 and Level 2 variables and time were examined, only membership in District B significantly predicted changes in PS/RtI implementation scores relative to reading in pilot schools over time (Estimate = -0.46, $t = -3.97$, $p < .01$). These results indicate that membership in District B significantly predicted decreases in PS/RtI implementation over time after controlling for the other predictors in the model. Initial school-level educator beliefs, perceptions of skills, and perceptions of educational practices were not found to significantly predict changes in PS/RtI implementation at the school-level.

Random effects for intercepts at the school level were examined to determine if there was significant variation in mean PS/RtI implementation scores relative to reading. At the school level, intercepts did not vary significantly (Estimate = 0.01, SE = 0.01, $z = 0.86$, $p = .20$), indicating that the mean PS/RtI implementation scores relative to reading did not differ significantly across the pilot schools. The random effects for slopes were not examined because slopes were fixed in the final multilevel model.

The model fit statistics also were examined to determine if adding the Level 1 and Level 2 variables increased the fit of the full two-level model. A review of the fit statistics shows that both the AIC and BIC decreased from the unconditional model (AIC = 207.7, BIC = 210.6) to the full two-level model (AIC = 86.9, BIC = 89.8), indicating that adding the Level 1 and Level 2 predictors increased the fit of the model.

Next, the residual variance was examined to determine the level of unexplained variance in pilot schools' mean PS/RtI implementation scores after the predictors were entered into the full two-level model. Residual variance was significant in the full two-level model (Estimate = 0.07, SE = 0.01, $z = 6.10$, $p < .01$), indicating that the predictors entered into the multilevel model did not explain all of the variance in mean PS/RtI implementation scores in pilot schools as measured by the *Tiers I and II Critical Components Checklist*. However, the estimate of residual variance decreased from the unconditional model (Estimate = 0.25) to the full two-level model (Estimate = 0.07), indicating that adding the selected variables increased the predictive power of the multilevel model.

Finally, the normality of the residual variances was examined through two visual analyses. Visual analyses of both the scatterplot and stem and leaf plot of the predicted residual variances suggest a relatively normal distribution of the residuals. The scatterplots and stem and leaf plots of the predicted residuals for each of the multilevel models are presented in Appendix J.

Research Question 3

What is the relationship between changes in the level of PS/RtI implementation in pilot schools and the following student and systemic outcomes?

a. Student Outcome

    i. Initial student reading performance

b. Systemic Outcomes

    i. Rate of office discipline referrals (ODRs)

    ii. Rate of placements in special education

Four separate two-level, multilevel models were used to address this research question. The dependent variables for the multilevel models predicting student outcomes were the mean DIBELS Kindergarten Phoneme Segmentation Fluency (PSF) and Kindergarten Nonsense Word Fluency (NWF) scores for each school. The dependent variables for the multilevel level models predicting systemic outcomes were the rate of office discipline referrals (ODRs) and the rate of placements in special education for each school. All dependent variables were measured at the school level.

PS/RtI Implementation Predicting DIBELS Kindergarten PSF Scores

Assumptions. First, the normality assumption was examined for the DIBELS kindergarten PSF data, as well as the Level 1 and Level 2 predictors to be entered into the model. Skewness and kurtosis values for the mean DIBELS kindergarten PSF score were .34 and -0.18, respectively, indicating a relatively normal distribution. Skewness values for the Level 1 and Level 2 continuous predictors ranged from -1.22 to 0.97. Kurtosis values for the Level 1 and Level 2 continuous predictors ranged from -1.02 to 0.23. These two statistics indicated relative normality in the distribution of the Level 1 and Level 2 continuous predictors.

Finally, the assumption that data were nested was examined by calculating the ICC from the unconditional model. The ICC estimate derived was .37, indicating that the data were nested and multilevel model procedures were appropriate for this model.

Descriptive data. The school-level DIBELS kindergarten PSF score was derived by computing the mean of the DIBELS kindergarten PSF scores for each school. As discussed in Chapter 3, the DIBELS PSF subtest is a standardized, individually administered test of phonological awareness and has been found to be a good predictor of later reading achievement (Kaminski & Good, 1996). The DIBELS kindergarten PSF subtest was chosen as an outcome variable because six of the seven demonstration districts chose to target PS/RtI implementation with a focus on kindergarten reading for the purposes of the PS/RtI Project. One demonstration district (District A), which included three pilot schools, chose to target PS/RtI implementation with a focus on mathematics. Therefore, only data from pilot schools (n = 31) in the six demonstration districts that chose to target PS/RtI implementation with a focus on kindergarten reading were included in the multilevel models that addressed this research question.

DIBELS kindergarten PSF scores were calculated at each of the four time points (Baseline Year 1= 2005-2006, Baseline Year 2 = 2006-2007, PS/RtI Project Implementation Year 1 = 2007-2008, and PS/RtI Project Implementation Year 2 = 2008-2009) for pilot schools to determine changes in school-level DIBELS kindergarten PSF scores over time. Scores for pilot schools were examined to investigate potential changes in school-level DIBELS kindergarten PSF scores for schools that were exposed to training and technical assistance relative to PS/RtI implementation.

Table 10 reports descriptive statistics for school-level DIBEL kindergarten PSF score obtained from the DIBELS kindergarten PSF subtest at each of the four time points. From a review of these data, it appears that DIBELS kindergarten PSF scores increased over time for pilot schools (n = 31).

Table 10

Descriptive Statistics for Pilot Schools' DIBELS Kindergarten PSF Scores by Time

Time	n^a	Mean (SD)	Skewness	Kurtosis
Pilot Schools	31	39.24 (7.51)	0.34	-0.18
Baseline Year 1	25	35.41 (7.36)	1.67	4.37
Baseline Year 2	27	37.37 (6.86)	0.39	-0.45
PS/RtI Project Year 1	30	40.61 (6.92)	0.29	0.15
PS/RtI Project Year 2	31	42.65 (6.62)	-0.33	-0.50

Note. [a]*n* represents the number of schools.

Descriptive data also were examined for the three Level 1 time-varying covariates (i.e., PS/RtI implementation, proportion of students in a school receiving free/reduced lunch, and school grade), as well as the Level 2 variable (i.e., district membership), that were entered into the model as predictors of DIBELS kindergarten PSF scores. The values for PS/RtI implementation, the proportion of students in a school receiving free/reduced lunch (a proxy for school SES), and school grade varied across the four time points, and thus were included in the model as Level 1 time-varying covariates. District membership remained constant over time, and thus was included in the model as a Level 2, school-level predictor. The descriptive statistics were calculated differently for the Level 1 and Level 2 variables. For the Level 1 time-varying covariates, the means and standard deviations were computed (see Table 11). For the Level 2 variable, frequency data were computed and are reported in Table 12.

Level 1 time-varying covariate data were available from 29, 29, 31, and 31 of the 31 participating schools at Baseline Year 1, Baseline Year 2, PS/RtI Project Implementation Year 1, and PS/RtI Project Implementation Year 2, respectively. Level 1 time-varying covariate data were not available at the two baseline time points for two pilot schools from one demonstration district (District C) which were not yet open during the baseline data collection years (2005-2006 and 2006-2007).

Table 11

Descriptive Statistics for Level 1 Time-Varying Covariates by Time

Time-Varying Covariates/Time	*n*[a]	Mean (SD)	Skewness	Kurtosis
PS/RtI Implementation	31	0.47 (0.49)	0.97	-0.14
Baseline Year 1	29	0.14 (0.18)	1.22	0.76
Baseline Year 2	29	0.21 (0.24)	1.52	2.38
PS/RtI Project Year 1	31	0.59 (0.45)	0.20	-1.47
PS/RtI Project Year 2	31	0.89 (0.53)	0.04	-1.16
Proportion Receiving Free-Reduced Lunch	31	0.50 (0.23)	-0.55	-1.03
Baseline Year 1	29	0.49 (0.23)	-0.62	-0.99
Baseline Year 2	29	0.48 (0.23)	1.52	2.38
PS/RtI Project Year 1	31	0.50 (0.23)	-0.59	-1.03
PS/RtI Project Year 2	31	0.54 (0.24)	-0.56	-0.98
School Grade	31	3.49 (0.77)	-1.22	0.23
Baseline Year 1	29	3.28 (0.84)	-0.58	-1.34
Baseline Year 2	29	3.55 (0.74)	-1.34	0.34
PS/RtI Project Year 1	31	3.48 (0.85)	-1.51	1.23
PS/RtI Project Year 2	31	3.65 (0.61)	-1.55	1.50

Note. [a]*n* represents the number of schools.

Table 12

Descriptive Statistics for Level 2 Predictors

Level 2 Predictors	*n*[a]	Percent (%)
District Membership	-	-
District B	6	19.4
District C	7	22.6
District D	6	19.4
District E	3	9.7
District F	6	19.4
District G	3	9.7

Note. [a]*n* represents the number of schools.

Multilevel model results. A two-level, multilevel model was employed to examine the relationship between PS/RtI implementation and DIBELS kindergarten PSF score in pilot schools. The mean DIBELS kindergarten PSF score for each participating school was entered as the dependent variable in the multilevel model. Time was entered as a Level 1 predictor of DIBELS kindergarten PSF score and was zero centered to facilitate the interpretation of results (Model 1). The mean PS/RtI implementation score relative to kindergarten reading (as measured by the *Tiers I and II Critical Components Checklist*) and the proportion of students in a school receiving free/reduced lunch were entered as continuous variables for each pilot school. School grade was entered as an interval variable into the multilevel model. The Level 1 time-varying covariates were grand mean centered to facilitate the interpretation of results. The interactions between each of the Level 1 time-varying covariates and time also were entered into the multilevel model (Model 2).

The only Level 2 predictor included was district membership. District membership was dummy coded using five dummy coded variables (D1-D5) so that values of 1 represented membership in a given district (i.e., District B, District C, District D, District E, District F), while values of 0 represented non-membership. District G served as the reference district and was coded 0 on variables D1-D5. The interaction between district membership and time also was entered into the multilevel model (Model 3). The final two-level multilevel model converged when intercepts and slopes were allowed to vary. The final two-level model for DIBELS kindergarten PSF score is given below:

> Mean School-Level DIBELS Kindergarten PSF Score = γ_{000} + γ_{001} (PS/RtI Implementation) + γ_{002} (Proportion of Students Receiving Free/Reduced Lunch) + γ_{003} (School Grade) + γ_{004} (District B) + γ_{005} (District C) + γ_{006} (District D) + γ_{007} (District E) + γ_{008} (District F) + γ_{100} (Time) + γ_{101} (PS/RtI Implementation*Time) + γ_{102} (Proportion of Students Receiving Free/Reduced Lunch*Time) + γ_{103} (School Grade*Time) + γ_{104} (District B*Time) + γ_{105} (District C*Time) + γ_{106} (District D*Time) + γ_{107} (District E*Time) + γ_{108} (District F*Time) + ε_{000} + μ_{000} + r_{100}

Time was entered as a Level 1 predictor to determine if the increases in school-level DIBELS kindergarten PSF scores in pilot schools were statistically significant. Time, when entered alone without any Level 1 or Level 2 predictors significantly predicted mean DIBELS kindergarten PSF scores (Estimate = 2.42, t = 4.36, p < .01). These findings indicate that school-level DIBELS kindergarten PSF scores increased significantly from Baseline Year 1 to PS/RtI Project Implementation Year 2 in pilot schools. Next, the Level 1 time-varying covariates were entered into the model. When the

Level 1 predictors were entered into the model, time was no longer a significant predictor (Estimate = 1.62, t = 1.53, p = .13) after controlling for the other predictors in the model. Finally, the Level 2 predictors were added to yield the final two-level model. Results of the final two-level model showing the degree to which each predictor entered into the model contributed to the mean DIBELS kindergarten PSF scores are reported in Table 13 below. When the Level 1 and Level 2 predictors were entered into the final two-level model, time was not a significant predictor (Estimate = -1.08, t = -0.60, p = .55) after controlling for the other predictors in the model.

Table 13

Multilevel Modeling Results for Predicting DIBELS Kindergarten PSF Scores in Pilot Schools

Predictors	Estimate	SE	*t*	*P*
DIBELS Kindergarten PSF Intercept	48.37	3.40	14.21*	< .01
Time (Slope)	-1.08	1.81	-0.60	.55
Level 1				
Intercepts				
PS/RtI Implementation	8.78	4.26	2.06*	.04
Proportion Students Receiving Free/Reduced Lunch	-10.50	5.88	-1.78	.08
School Grade	0.48	1.53	0.32	.75
Slope				
PS/RtI Implementation*Time	-2.36	1.58	-1.49	.14
Proportion Students Receiving Free/Reduced Lunch*Time	1.85	2.77	0.67	.51
School Grade*Time	-0.17	0.81	-0.22	.83
Level 2				
Intercepts				
District B Membership	-15.39	3.77	-4.08*	< .01
District C Membership	-13.04	3.91	-3.33*	< .01
District D Membership	-7.62	4.08	-1.87	.06
District E Membership	-8.85	4.39	-2.01*	.05

Table 13 continued

Multilevel Modeling Results for Predicting DIBELS Kindergarten PSF Scores in Pilot Schools

Predictors	Estimate	SE	*t*	*P*
District F Membership	-10.21	4.35	-2.35*	.02
District G Membership	0	-	-	-
Slope				
District B Membership*Time	3.34	2.11	1.58	.12
District C Membership*Time	2.79	2.06	1.35	.18
District D Membership*Time	1.27	2.15	0.59	.55
District E Membership*Time	0.92	2.37	0.39	.70
District F Membership*Time	3.42	2.20	1.56	.12
District G Membership*Time	0	-	-	-
Model Fit Statistics				
AIC	650.1			
BIC	655.9			
Deviance	642.1			

Note. * $p < .05$.
[a]District A was not included in analyses because it did not target PS/RtI implementation relative to reading.

As is shown, several Level 1 and Level 2 variables predicted initial mean DIBELS kindergarten PSF scores. PS/RtI implementation relative to kindergarten reading significantly predicted initial mean DIBELS kindergarten PSF scores (Estimate = 8.78, t = 2.06, p = .04) after controlling for the other predictors in the model. Membership in District B (Estimate = -15.39, t = -4.08, p < .01), District C (Estimate = -13.04, t = -3.33, p < .01), District E (Estimate = -8.85, t = -2.01, p = .05), and District F (Estimate = -10.21, t = -2.35, p = .02) also predicted initial mean DIBELS kindergarten PSF scores (see Table 13). These results indicate that higher levels of PS/RtI implementation relative to kindergarten reading predicted higher initial mean DIBELS kindergarten PSF scores after controlling for the other predictors in the model. Conversely, membership in Districts B, C, E, and F predicted lower initial mean DIBELS kindergarten PSF scores after controlling for the other predictors in the model.

When the interactions between the Level 1 and Level 2 variables and time were examined, none of the variables significantly predicted changes in mean DIBELS kindergarten PSF scores over time after controlling for the other predictors in the model.

Random effects for intercepts and slopes at the school level were examined to determine if there was significant variation in mean DIBELS kindergarten PSF scores. At the school level intercepts did not vary significantly (Estimate = 14.58, SE = 9.84, z = 1.48, p = .07), indicating that the mean DIBELS kindergarten PSF scores did not differ significantly across the pilot schools. An examination of the random effects for slopes indicates that slopes at the school level also did not vary significantly (Estimate = 4.41, SE = 2.69, z = 1.64, p = .05). Additionally, the correlation between school level intercepts and slopes was not significant (Estimate = -4.07, SE = 4.37, z = -0.93, p = .35).

The model fit statistics also were examined to determine if adding the Level 1 and Level 2 variables increased the fit of the full two-level model. A review of the fit statistics shows that both the AIC and BIC decreased from the unconditional model (AIC = 761.7, BIC = 764.5) to the full two-level model (AIC = 650.1, BIC = 655.9), indicating that adding the Level 1 and Level 2 predictors increased the fit of the model.

Next, the residual variance was examined to determine the level of unexplained variance in mean DIBELS kindergarten PSF scores after the predictors were entered into the full two-level model. Residual variance was significant in the full two-level model (Estimate = 18.74, SE = 3.71, $z = 5.06$, $p < .01$), indicating that the predictors entered into the multilevel model did not explain all of the variance in the mean DIBELS kindergarten PSF scores. However, the estimate of residual variance decreased from the unconditional model (Estimate = 35.95) to the full two-level model (Estimate = 18.74), indicating that adding the selected variables increased the predictive power of the multilevel model.

Finally, the normality of the residual variances was examined through two visual analyses. Visual analyses of both the scatterplot and stem and leaf plot of the predicted residual variances suggest a relatively normal distribution of the residuals. The scatterplots and stem and leaf plots of the predicted residuals for each of the multilevel models are presented in Appendix J.

PS/RtI Implementation Predicting DIBELS Kindergarten NWF Scores

Assumptions. First, the normality assumption was examined for the DIBELS kindergarten NWF data, as well as the Level 1 and Level 2 predictors to be entered into the model. Skewness and kurtosis values for the mean DIBELS kindergarten NWF score were 0.45 and 0.47, respectively, indicating a relatively normal distribution. Skewness values for the Level 1 and Level 2 continuous predictors ranged from -1.22 to 0.97. Kurtosis values for the Level 1 and Level 2 continuous predictors ranged from -1.02 to 0.23. These two statistics indicated relative normality in the distribution of the Level 1 and Level 2 continuous predictors.

Finally, the assumption that data were nested was examined by calculating the ICC from the unconditional model. The ICC estimate derived was .47, indicating that the data were nested and multilevel model procedures were appropriate for this model.

Descriptive data. The school-level DIBELS kindergarten NWF score was derived by computing the mean of the DIBELS kindergarten NWF scores for each pilot school. As discussed in Chapter 3, the DIBELS NWF subtest is a standardized, individually administered test of letter-sound correspondence and the ability to blend letter sounds into words (Kaminski & Good, 1996). The DIBELS kindergarten NWF subtest was chosen as an outcome variable because six of the seven demonstration districts chose to target PS/RtI implementation with a focus on kindergarten reading for the purposes of the PS/RtI Project. One demonstration district (District A), which included three pilot schools, chose to target PS/RtI implementation with a focus on mathematics. Therefore, only data from pilot schools (n = 31) in the six demonstration districts that chose to target PS/RtI implementation with a focus on kindergarten reading were included in the multilevel models that addressed this research question.

DIBELS kindergarten NWF scores were calculated at each of the four time points (Baseline Year 1= 2005-2006, Baseline Year 2 = 2006-2007, PS/RtI Project Implementation Year 1 = 2007-2008, and PS/RtI Project Implementation Year 2 = 2008-2009) for pilot schools to determine changes in school-level DIBELS kindergarten NWF scores over time. Scores for pilot schools were examined to investigate potential changes in school-level DIBELS kindergarten NWF scores for schools that were exposed to training and technical assistance relative to PS/RtI implementation.

Table 14 reports descriptive statistics for school-level DIBEL kindergarten NWF score obtained from the DIBELS kindergarten NWF subtest at each of the four time points. From a review of these data, it appears that DIBELS kindergarten NWF scores increased over time for pilot schools (n = 31).

Table 14

Descriptive Statistics for Pilot Schools' DIBELS Kindergarten NWF Scores by Time

Time	n^a	Mean (SD)	Skewness	Kurtosis
Pilot Schools	31	39.58 (7.63)	0.45	0.47
Baseline Year 1	25	35.98 (7.36)	0.61	1.02
Baseline Year 2	27	38.10 (7.14)	1.02	1.98
PS/RtI Project Year 1	30	41.32 (6.22)	-0.33	0.34
PS/RtI Project Year 2	31	42.10 (8.37)	0.53	0.41

Note. $^a n$ represents the number of schools.

The Level 1 and Level 2 variables entered into the multilevel model predicting DIBELS kindergarten NWF scores were the same as the variables entered into the multilevel model predicting DIBELS kindergarten PSF scores. Descriptive data for these variables were the same because the data were derived from the same sample of pilot schools (n = 31). Refer to Tables 11 and 12 for the descriptive statistics for the Level 1 and Level 2 variables, respectively.

Multilevel model results. A two-level, multilevel model was employed to determine the relationship between PS/RtI implementation and DIBELS kindergarten NWF score in pilot schools. The mean DIBELS kindergarten NWF score for each participating school was entered as the dependent variable in the multilevel model. Time was entered as a Level 1 predictor of DIBELS kindergarten NWF score and was zero centered to facilitate the interpretation of results (Model 1). The same Level 1 and Level 2 variables that were entered into the multilevel model predicting DIBELS kindergarten PSF scores were entered into this model. The interactions between each of the Level 1 (Model 2) and Level 2 (Model 3) variables and time also were entered into the model. The final two-level multilevel model converged when intercepts and slopes were allowed to vary. The final two-level model for DIBELS kindergarten NWF score is given below:

Mean School-Level DIBELS Kindergarten NWF Score = γ_{000} + γ_{001} (PS/RtI Implementation) + γ_{002} (Proportion of Students Receiving Free/Reduced Lunch) + γ_{003} (School Grade) + γ_{004} (District B) + γ_{005} (District C) + γ_{006} (District D) + γ_{007} (District E) + γ_{008} (District F) + γ_{100} (Time) + γ_{101} (PS/RtI Implementation*Time) + γ_{102} (Proportion of Students Receiving Free/Reduced Lunch*Time) + γ_{103} (School Grade*Time) + γ_{104} (District B*Time) + γ_{105} (District C*Time) + γ_{106} (District D*Time) + γ_{107} (District E*Time) + γ_{108} (District F*Time) + ε_{000} + μ_{000} + r_{100}

Time was entered as a Level 1 predictor to determine if the increases in school-level DIBELS kindergarten NWF scores were statistically significant. Time, when entered alone without any Level 1 or Level 2 predictors significantly predicted mean DIBELS kindergarten NWF scores (Estimate = 2.13, t = 4.00, p < .01). These findings indicate that school-level DIBELS kindergarten NWF scores increased significantly from

Baseline Year 1 to PS/RtI Project Implementation Year 2 in pilot schools. Next, the Level 1 time-varying covariates were entered into the model. When the Level 1 predictors were entered into the model, time remained a significant predictor (Estimate = 1.70, t = 2.14, p = .03) after controlling for the other predictors in the model. Finally, the Level 2 predictors were added to yield the final two-level model. Results of the final two-level model showing the degree to which each predictor entered into the model contributed to the mean DIBELS kindergarten NWF scores are reported in Table 15 below. When the Level 1 and Level 2 predictors were entered into the final two-level model, time was no longer a significant predictor (Estimate = 1.70, t = 0.44, p = .66) after controlling for the other predictors in the model.

Table 15

Multilevel Modeling Results for Predicting DIBELS Kindergarten NWF Scores in Pilot Schools

Predictors	Estimate	SE	*t*	*P*
DIBELS Kindergarten NWF Intercept	40.73	7.62	5.35*	< .01
Time (Slope)	1.70	3.86	0.44	.66
Level 1				
Intercepts				
PS/RtI Implementation	10.75	3.95	2.72*	< .01
Proportion Students Receiving Free/Reduced Lunch	-5.28	5.71	-0.92	.36
School Grade	1.33	1.42	0.94	.35
Slope				
PS/RtI Implementation*Time	-3.06	1.46	-2.10*	.04
Proportion Students Receiving Free/Reduced Lunch*Time	-2.62	2.49	-1.05	.30
School Grade*Time	-0.10	0.75	-0.13	.90
Level 2				
Intercepts				
District B Membership	-10.41	3.76	-2.77*	< .01
District C Membership	-11.16	3.88	-2.88*	< .01
District D Membership	-9.19	4.04	-2.28*	.03

Table 15 continued

Multilevel Modeling Results for Predicting DIBELS Kindergarten NWF Scores in Pilot Schools

Predictors	Estimate	SE	*t*	*P*
District E Membership	-2.40	4.37	-0.55	.59
District F Membership	-10.61	4.27	-2.49*	.01
District G Membership	0	-	-	-
Slope				
District B Membership*Time	2.60	1.87	1.39	.17
District C Membership*Time	2.49	1.84	1.36	.18
District D Membership*Time	2.34	1.92	1.22	.22
District E Membership*Time	0.87	2.10	0.42	.68
District F Membership*Time	3.16	1.96	1.62	.11
District G Membership*Time	0	-	-	-
Model Fit Statistics				
AIC	641.6			
BIC	647.4			
Deviance	633.6			

Note. * $p < .05$.
[a]District A was not included in analyses because it did not target PS/RtI implementation relative to reading.

As is shown, several Level 1 and Level 2 variables also predicted initial mean DIBELS kindergarten NWF scores in pilot schools. PS/RtI implementation relative to kindergarten reading significantly predicted initial mean DIBELS kindergarten NWF scores (Estimate = 10.75, $t = 2.72$, $p < .01$) after controlling for the other predictors in the model. Membership in District B (Estimate = -10.41, $t = -2.77$, $p < .01$), District C (Estimate = -11.16, $t = -2.88$, $p < .01$), District D (Estimate = -9.19, $t = -2.28$, $p = .03$), and District F (Estimate = -10.61, $t = -2.49$, $p = .01$) also predicted initial mean DIBELS kindergarten NWF scores (see Table 15). These results indicate that higher levels of PS/RtI implementation relative to kindergarten reading predicted higher initial mean DIBELS kindergarten NWF scores after controlling for the other predictors in the model. Conversely, membership in Districts B, C, D, and F predicted lower initial mean DIBELS kindergarten NWF scores after controlling for the other predictors in the model.

When the interactions between the Level 1 and Level 2 variables and time were examined, only PS/RtI implementation significantly predicted changes in DIBELS kindergarten NWF scores over time (Estimate = -3.06, $t = -2.10$, $p = .04$). These results indicate that increases in PS/RtI implementation relative to kindergarten reading significantly predicted decreases in mean DIBELS kindergarten PSF scores over time after controlling for the other predictors in the model.

Random effects for intercepts and slopes at the school level were examined to determine if there was significant variation in mean DIBELS kindergarten NWF scores. At the school level intercepts varied significantly (Estimate = 16.50, SE = 9.30, $z = 1.77$, $p = .04$), indicating that the mean DIBELS kindergarten NWF scores differed significantly across the pilot schools. An examination of the random effects for slopes indicates that slopes at the school level did not vary significantly (Estimate = 3.21, SE = 2.25, z = 1.43, p = .08). Additionally, the correlation between school level intercepts and slopes was not significant (Estimate = -1.98, SE = 3.73, z = -0.53, p = .60).

The model fit statistics also were examined to determine if adding the Level 1 and Level 2 variables increased the fit of the full two-level model. A review of the fit statistics shows that both the AIC and BIC decreased from the unconditional model (AIC = 754.4, BIC = 757.3) to the full two-level model (AIC = 641.6, BIC = 647.4), indicating that adding the Level 1 and Level 2 predictors increased the fit of the model.

Next, the residual variance was examined to determine the level of unexplained variance in mean DIBELS kindergarten PSF scores after the predictors were entered into the full two-level model. Residual variance was significant in the full two-level model (Estimate = 15.85, SE = 3.14, z = 5.04, p < .01), indicating that the predictors entered into the multilevel model did not explain all of the variance in the mean DIBELS kindergarten NWF scores. However, the estimate of residual variance decreased from the unconditional model (Estimate = 31.18) to the full two-level model (Estimate = 15.85), indicating that adding the selected variables increased the predictive power of the multilevel model.

Finally, the normality of the residual variances was examined through two visual analyses. Visual analyses of both the scatterplot and stem and leaf plot of the predicted residual variances suggest a relatively normal distribution of the residuals. The scatterplots and stem and leaf plots of the predicted residuals for each of the multilevel models are presented in Appendix J.

PS/RtI Implementation Predicting Rate of Office Discipline Referrals

Assumptions. First, the normality assumption was examined for the rate of office discipline referral (ODR) data, as well as the Level 1 and Level 2 predictors to be entered into the model. Skewness and kurtosis values for the mean rate of ODRs were 3.07 and 13.42, respectively, indicating variability in the distribution. Although the variability in the distribution of data should be noted, multilevel models should be robust to this violation (Raudenbush & Bryk, 2002). Skewness values for the Level 1 and Level 2 continuous predictors ranged from -1.34 to 1.03. Kurtosis values for the Level 1 and Level 2 continuous predictors ranged from -1.21 to 0.56. These two statistics indicated relative normality in the distribution of the Level 1 and Level 2 continuous predictors.

Finally, the assumption that data were nested was examined by calculating the ICC from the unconditional model. The ICC estimate derived was .31, indicating that the data were nested and multilevel model procedures were appropriate for this model.

Descriptive data. The school-level rate of ODRs was derived by computing the mean rate of ODRs per 100 students for each pilot school. Office discipline referrals were chosen as an outcome variable because they are often used as indicators of the effectiveness of a school's core (Tier I) behavior program. While only one of the seven demonstration districts chose to target PS/RtI implementation with a focus on behavior for the purposes of the PS/RtI Project, professional development provided to pilot schools sometimes included content related to PS/RtI implementation for behavior. Additionally, 65% of the pilot schools indicated that they were in the process of identifying core (Tier I) behavioral instruction during the first year (2007-2008) of the Project (Castillo, Hines, Batsche, & Curtis, 2008). Therefore, data from all pilot schools (n = 34) in the seven demonstration districts were included in the multilevel models that addressed this research question.

Rates of office discipline referrals (ODRs) were calculated at each of the four time points (Baseline Year 1= 2005-2006, Baseline Year 2 = 2006-2007, PS/RtI Project Implementation Year 1 = 2007-2008, and PS/RtI Project Implementation Year 2 = 2008-2009) for pilot schools to determine changes in school-level rates of ODRs over time. Table 16 reports descriptive statistics for school-level rates of ODRs for the pilot schools.

Table 16

Descriptive Statistics for Pilot Schools' Rates of Office Discipline Referrals by Time

Time	n^a	Mean (SD)	Skewness	Kurtosis
Pilot Schools	33	12.71 (14.10)	3.07	13.42
Baseline Year 1	31	11.30 (9.95)	1.13	0.36
Baseline Year 2	30	12.40 (9.20)	0.92	0.01
PS/RtI Project Year 1	33	9.51 (7.68)	1.02	1.06
PS/RtI Project Year 2	33	17.50 (22.76)	2.24	5.01

Note. [a]*n* represents the number of schools.

The Level 1 and Level 2 variables entered into the multilevel model predicting rate of ODRs were the same as the variables entered into the multilevel models predicting DIBELS kindergarten PSF and NWF scores described earlier. However, descriptive data for these variables were different due to the slightly different sample size (i.e., inclusion of all 34 pilot schools). The descriptive statistics for the Level 1 and Level 2 variables entered into the model predicting rate of ODRs are reported in Tables 17 and 18, respectively.

Level 1 time-varying covariate data were available from 32, 32, 34, and 34 of the 34 participating schools at Baseline Year 1, Baseline Year 2, PS/RtI Project Implementation Year 1, and PS/RtI Project Implementation Year 2, respectively. Level 1 time-varying covariate data were not available at the two baseline time points for two pilot schools from one demonstration district (District C) which were not yet open during the baseline data collection years (2005-2006 and 2006-2007).

Table 17

Descriptive Statistics for Level 1 Time-Varying Covariates by Time

Time-Varying Covariates/Time	n^a	Mean (SD)	Skewness	Kurtosis
PS/RtI Implementation	34	0.45 (0.47)	1.03	0.03
Baseline Year 1	32	0.12 (0.17)	1.36	0.99
Baseline Year 2	32	0.21 (0.23)	1.86	3.95
PS/RtI Project Year 1	34	0.64 (0.46)	0.01	-1.51
PS/RtI Project Year 2	34	0.80 (0.52)	0.43	-1.02
Proportion Receiving Free-Reduced Lunch	34	0.48 (0.23)	-0.35	-1.21
Baseline Year 1	32	0.47 (0.23)	-0.39	-1.26
Baseline Year 2	32	0.46 (0.23)	-0.37	-1.30
PS/RtI Project Year 1	34	0.48 (0.23)	-0.37	-1.27
PS/RtI Project Year 2	34	0.52 (0.24)	-0.37	-1.13
School Grade	34	3.53 (0.75)	-1.34	0.56
Baseline Year 1	32	3.34 (0.83)	-0.74	-1.12
Baseline Year 2	32	3.56 (0.72)	-1.36	0.46
PS/RtI Project Year 1	34	3.53 (0.83)	-1.65	1.75
PS/RtI Project Year 2	34	3.68 (0.59)	-1.69	2.01

Note. $^a n$ represents the number of schools.

Table 18

Descriptive Statistics for Level 2 Predictors

Level 2 Predictors	n^a	Percent (%)
District Membership	-	-
District A	3	8.8
District B	6	17.6
District C	7	20.6
District D	6	17.6
District E	3	8.8
District F	6	17.6
District G	3	8.8

Note. [a]*n* represents the number of schools.

Multilevel model results. A two-level, multilevel model was employed to determine the relationship between PS/RtI implementation and rate of ODRs in pilot schools. The rate of ODRs for each participating school was entered as the dependent variable in the multilevel model. Time was entered as a Level 1 predictor and was zero centered to facilitate the interpretation of results (Model 1). The same Level 1 and Level 2 variables that were entered into the multilevel models predicting DIBELS kindergarten PSF and NWF scores were entered into this model. The interactions between each of the Level 1 (Model 2) and Level 2 (Model 3) variables and time also were entered into the model. The final two-level multilevel model converged when intercepts and slopes were allowed to vary. The final two-level model for rate of ODRs is given below:

Rate of Office Discipline Referrals (ODRs) = γ_{000} + γ_{001} (PS/RtI Implementation) + γ_{002} (Proportion of Students Receiving Free/Reduced Lunch) + γ_{003} (School Grade) + γ_{004} (District A) + γ_{005} (District B) + γ_{006} (District C) + γ_{007} (District D) + γ_{008} (District E) + γ_{009} (District F) + γ_{100} (Time) + γ_{101} (PS/RtI Implementation*Time) + γ_{102} (Proportion of Students Receiving Free/Reduced Lunch*Time) + γ_{103} (School Grade*Time) + γ_{104} (District B*Time) + γ_{105} (District B*Time) + γ_{106} (District C*Time) + γ_{107} (District D*Time) + γ_{108} (District E*Time) + γ_{109} (District F*Time) + ε_{000} + μ_{000} + r_{100}

Time was entered as a Level 1 predictor to determine if the changes in the rate of ODRs were statistically significant. Time, when entered alone without any Level 1 or Level 2 predictors did not significantly predict rate of ODRs (Estimate = 1.62, t = 1.30, p = .20). These findings indicate that the rate of ODRs did not change significantly from Baseline Year 1 to PS/RtI Project Implementation Year 2 in pilot schools. Next, the Level 1 time-varying covariates were entered into the model. When the Level 1 predictors were entered into the model, time was still not a significant predictor (Estimate = 2.26, t = 1.59, p = .12) after controlling for the other predictors in the model. Next, the Level 2 predictors were added to yield the final two-level model. Results of the final two-level model showing the degree to which each predictor entered into the model contributed to the rate of ODRs are reported in Table 19 below. When the Level 1 and Level 2 predictors were entered into the final two-level model, time was still not a significant predictor (Estimate = -0.48, t = -0.14, p = .89) after controlling for the other predictors in the model.

Table 19

Multilevel Modeling Results for Predicting Rate of Office Discipline Referrals in Pilot Schools

Predictors	Estimate	SE	*t*	*P*
Rate of ODRs Intercept	15.82	5.27	3.00*	< .01
Time (Slope)	-0.48	3.35	-0.14	.89
Level 1				
Intercepts				
PS/RtI Implementation	-4.13	7.36	-0.56	.58
Proportion Students Receiving Free/Reduced Lunch	20.71	8.98	2.31*	.02
School Grade	-2.40	2.57	-0.94	.35
Slope				
PS/RtI Implementation*Time	1.99	3.12	0.64	.53
Proportion Students Receiving Free/Reduced Lunch*Time	3.62	5.15	0.70	.48
School Grade*Time	0.92	1.48	0.62	.54
Level 2				
Intercepts				
District A Membership	0.54	6.87	0.08	.94
District B Membership	-11.42	5.79	-1.97	.05
District C Membership	-12.67	5.92	-2.14*	.03
District D Membership	-6.15	5.97	-1.03	.31

Table 19 continued

Multilevel Modeling Results for Predicting Rate of Office Discipline Referrals in Pilot Schools

Predictors	Estimate	SE	*t*	*P*
District E Membership	-9.89	6.81	-1.45	.15
District F Membership	-2.87	6.85	-0.42	.68
District G Membership	0	-	-	-
Slope				
District A Membership*Time	0.12	4.68	0.02	.98
District B Membership*Time	12.17	4.01	3.04*	< .01
District C Membership*Time	0.43	3.93	0.11	.92
District D Membership*Time	0.29	4.04	0.07	.94
District E Membership*Time	1.29	4.75	0.27	.79
District F Membership*Time	-2.12	4.48	-0.47	.64
District G Membership*Time	0	-	-	-
Model Fit Statistics				
AIC	861.4			
BIC	867.5			
Deviance	853.4			

Note. * $p < .05$.

As is shown, several Level 1 and Level 2 variables predicted the initial rate of ODRs. The proportion of students in a school receiving free/reduced lunch significantly predicted the initial rate of ODRs (Estimate = 20.71, $t = 2.31$, $p = .02$) after controlling for the other predictors in the model. Membership in District C (Estimate = -12.67, $t = -2.14$, $p = .03$) also predicted the initial rate of ODRs (see Table 19). These results indicate that higher proportion of students in a school receiving free/reduced lunch predicted a higher initial rate of ODRs after controlling for the other predictors in the model. Conversely, membership in District C predicted a lower initial rate of ODRs after controlling for the other predictors in the model.

When the interactions between the Level 1 and Level 2 variables and time were examined, only membership in District B (Estimate = 12.17, $t = 3.04$, $p < .01$) significantly predicted changes in the rate of ODRs over time after controlling for the other predictors in the model. These results indicate that membership in District B predicted increases in the rate of ODRs over time after controlling for the other predictors in the model.

Random effects for intercepts and slopes at the school level were examined to determine if there was significant variation in rates of ODRs. At the school level intercepts did not vary significantly (Estimate = 16.22, SE = 22.02, $z = 0.74$, $p = .23$), indicating that the rates of ODRs did not differ significantly across the pilot schools. An examination of the random effects for slopes indicates that slopes at the school level did vary significantly (Estimate = 16.79, SE = 9.38, $z = 1.79$, $p = .04$). Additionally, the correlation between school level intercepts and slopes was not significant (Estimate = -7.44, SE = 11.79, $z = -0.63$, $p = .53$).

The model fit statistics also were examined to determine if adding the Level 1 and Level 2 variables increased the fit of the full two-level model. A review of the fit statistics shows that both the AIC and BIC decreased from the unconditional model (AIC = 1019.0, BIC = 1022.0) to the full two-level model (AIC = 861.4, BIC = 867.5), indicating that adding the Level 1 and Level 2 predictors increased the fit of the model.

Next, the residual variance was examined to determine the level of unexplained variance in rate of ODRs after the predictors were entered into the full two-level model. Residual variance was significant in the full two-level model (Estimate = 70.51, SE = 13.06, $z = 5.40$, $p < .01$), indicating that the predictors entered into the multilevel model did not explain all of the variance in the rate of ODRs. However, the estimate of residual variance decreased from the unconditional model (Estimate = 137.59) to the full two-level model (Estimate = 70.51), indicating that adding the selected variables increased the predictive power of the multilevel model.

Finally, the normality of the residual variances was examined through two visual analyses. Visual analyses of both the scatterplot and stem and leaf plot of the predicted residual variances suggest a relatively normal distribution of the residuals. The scatterplots and stem and leaf plots of the predicted residuals for each of the multilevel models are presented in Appendix J.

PS/RtI Implementation Predicting Rate of Placements in Special Education

Assumptions. First, the normality assumption was examined for the rate of placements in special education data, as well as the Level 1 and Level 2 predictors to be entered into the model. Skewness and kurtosis values for the mean rate of special education placements were 0.57 and -0.03, respectively, indicating a relatively normal distribution. Skewness values for the Level 1 and Level 2 continuous predictors ranged from -1.34 to 1.03. Kurtosis values for the Level 1 and Level 2 continuous predictors ranged from -1.21 to 0.56. These two statistics indicated relative normality in the distribution of the Level 1 and Level 2 continuous predictors.

Finally, the assumption that data were nested was examined by calculating the ICC from the unconditional model. The ICC estimate derived was .92, indicating that the data were nested and multilevel model procedures were appropriate for this model.

Descriptive data. The rate of placements in special education was derived by computing the mean rate of placements in special education per 100 students for each pilot school. Placements in special education were chosen as an outcome variable because they are often used as indicators of the effectiveness of a school's academic and behavioral programs. Research has also suggested that implementing evidence-based assessment and instructional practices can reduce the number placements for special education (VanDerHeyden, Witt, & Gilbertson, 2007). Since implementing a PS/RtI model of service delivery incorporates these aspects, including the rate of placements in special education as an outcome measure seemed appropriate. Therefore, data from all pilot schools (n = 34) in the seven demonstration districts were included in the multilevel models that addressed this research question.

Rates of placements in special education were calculated at each of the four time points (Baseline Year 1= 2005-2006, Baseline Year 2 = 2006-2007, PS/RtI Project Implementation Year 1 = 2007-2008, and PS/RtI Project Implementation Year 2 = 2008-2009) for pilot schools to determine changes in school-level rates of placements in special education over time. Table 20 reports descriptive statistics for school-level rates of placements in special education for the pilot schools. From a review of these data, it appears that placements in special education decreased over time for pilot schools.

Table 20

Descriptive Statistics for Pilot Schools' Rates of Placements in Special Education by Time

Time	n^a	Mean (SD)	Skewness	Kurtosis
Pilot Schools	34	12.12 (5.18)	0.57	-0.03
Baseline Year 1	32	12.55 (5.24)	0.30	-0.05
Baseline Year 2	32	12.51 (5.22)	0.33	-0.20
PS/RtI Project Year 1	34	12.07 (5.34)	0.72	0.31
PS/RtI Project Year 2	34	11.41 (5.10)	1.01	0.81

Note. [a]*n* represents the number of schools.

The Level 1 and Level 2 variables that were entered into the multilevel model predicting rate of placements in special education were the same as the variables entered into the multilevel model predicting rate of ODRs described earlier. Descriptive data for these variables were the same because the data were derived from the same sample of pilot schools (n = 34). Refer to Tables 17 and 18 for the descriptive statistics for the Level 1 and Level 2 variables, respectively.

Multilevel model results. A two-level, multilevel model was employed to determine the relationship between PS/RtI implementation and rate of placements in special education in pilot schools. The rate of placements in special education for each participating school was entered as the dependent variable in the multilevel model. Time was entered as a Level 1 predictor and was zero centered to facilitate the interpretation of results (Model 1). The same Level 1 and Level 2 variables that were entered into the multilevel model predicting rate of ODRs were entered into this model. The interactions between each of the Level 1 (Model 2) and Level 2 (Model 3) variables and time also were entered into the model. The final two-level multilevel model converged when intercepts and slopes were allowed to vary. The final two-level model for rate of placements in special education is given below:

> Rate of Placements in Special Education = γ_{000} + γ_{001} (PS/RtI Implementation) + γ_{002} (Proportion of Students Receiving Free/Reduced Lunch) + γ_{003} (School Grade) + γ_{004} (District A) + γ_{005} (District B) + γ_{006} (District C) + γ_{007} (District D) + γ_{008} (District E) + γ_{009} (District F) + γ_{100} (Time) + γ_{101} (PS/RtI Implementation*Time) + γ_{102} (Proportion of Students Receiving Free/Reduced Lunch*Time) + γ_{103} (School Grade*Time) + γ_{104} (District B*Time) + γ_{105} (District B*Time) + γ_{106} (District C*Time) + γ_{107} (District D*Time) + γ_{108} (District E*Time) + γ_{109} (District F*Time) + ε_{000} + μ_{000} + r_{100}

Time was entered as a Level 1 predictor to determine if the decrease in the rate of placements in special education was statistically significant. Time, when entered alone without any Level 1 or Level 2 predictors did not significantly predict rate of placements in special education (Estimate = -0.28, t = -1.80, p = .07). These findings indicate that the rate of placements in special education did not change significantly from Baseline Year 1 to PS/RtI Project Implementation Year 2 in pilot schools. Next, the Level 1 time-varying covariates were entered into the model. When the Level 1 predictors were entered into the model, time was still not a significant predictor (Estimate = -0.39, t = -1.98, p = .05) after controlling for the other predictors in the model. Finally, the Level 2 predictors were added to yield the final two-level model. Results of the final two-level model showing the degree to which each predictor entered into the model contributed to the rate of placements in special education are reported in Table 21 below. When the Level 2 predictors were entered into the final two-level model, time was still not a significant predictor (Estimate = -0.78, t = -01.54, p = .13) after controlling for the other predictors in the model.

Table 21

Multilevel Modeling Results for Predicting Rate of Placements in Special Education in Pilot Schools

Predictors	Estimate	SE	*t*	*P*
Rate of Placements in Special Education	8.61	2.04	4.21*	< .01
Intercept				
Time (Slope)	-0.78	0.50	-1.54	.13
Level 1				
Intercepts				
PS/RtI Implementation	1.23	0.84	1.47	.15
Proportion Students Receiving	16.52	2.73	6.05*	< .01
Free/Reduced Lunch				
School Grade	0.51	0.38	1.37	.17
Slope				
PS/RtI Implementation*Time	-0.70	0.35	-2.02*	.05
Proportion Students Receiving	-2.27	0.75	-3.02*	< .01
Free/Reduced Lunch*Time				
School Grade*Time	-0.40	0.20	-2.03*	.04
Level 2				
Intercepts				
District A Membership	9.93	2.92	3.40*	< .01
District B Membership	7.66	2.48	3.09*	< .01
District C Membership	3.04	2.46	1.24	.22

Table 21 continued

Multilevel Modeling Results for Predicting Rate of Placements in Special Education in Pilot Schools

Predictors	Estimate	SE	*t*	*P*
District D Membership	2.83	2.49	1.14	.26
District E Membership	-0.66	2.87	-0.23	.82
District F Membership	6.85	2.52	2.72*	.01
District G Membership	0	-	-	-
Slope				
District A Membership*Time	0.86	0.71	1.21	.23
District B Membership*Time	0.05	0.61	0.09	.93
District C Membership*Time	0.17	0.61	0.27	.79
District D Membership*Time	-0.18	0.62	-0.30	.77
District E Membership*Time	0.54	0.71	0.75	.45
District F Membership*Time	0.70	0.64	1.09	.28
District G Membership*Time	0	-	-	-
Model Fit Statistics				
AIC	499.9			
BIC	506.0			
Deviance	491.9			

Note. * $p < .05$.

As is shown, several Level 1 and Level 2 variables predicted the initial rate of placements in special education in pilot schools. The proportion of students in a school receiving free/reduced lunch significantly predicted the initial rate of placements in special education (Estimate = 16.52, $t = 6.05$, $p < .01$) after controlling for the other predictors in the model. Membership in District A (Estimate = 9.93, $t = 3.40$, $p < .01$), District B (Estimate = 7.66, $t = 3.09$, $p < .01$), and District F (Estimate = 6.85, $t = 2.72$, $p = .01$) also predicted the initial rate of placements in special education (see Table 21). These results indicate that having a higher proportion of students in a school receiving free/reduced lunch and membership in Districts A, B, and F predicted a higher initial rate of placements in special education after controlling for the other predictors in the model.

When the interactions between the Level 1 and Level 2 variables and time were examined, PS/RtI implementation (Estimate = -0.70, $t = -2.02$, $p = .05$) significantly predicted changes in the rate of placements in special education over time after controlling for the other predictors in the model. The proportion of students in a school receiving free/reduced lunch (Estimate = -2.27, $t = -3.02$, $p < .01$) and school grade (Estimate = -0.40, $t = -2.03$, $p = .04$) also significantly predicted changes in the rate of placements in special education over time. These results indicate that increases in the level of PS/RtI implementation, the proportion of students in a school receiving free/reduced lunch, and school grades predicted decreases in the rate of placements in special education over time after controlling for the other predictors in the model.

Random effects for intercepts and slopes at the school level were examined to determine if there was significant variation in rates of placements in special education. At the school level intercepts varied significantly (Estimate = 11.68, SE = 3.47, $z = 3.37$, $p <$

.01), indicating that the rates of placements in special education differed significantly across the pilot schools. An examination of the random effects for slopes indicates that slopes at the school level also varied significantly (Estimate = 0.55, SE = 0.23, $z = 2.37$, $p = .01$). Additionally, the correlation between school level intercepts and slopes was not significant (Estimate = -0.92, SE = 0.67, $z = -1.36$, $p = .17$).

The model fit statistics also were examined to determine if adding the Level 1 and Level 2 variables increased the fit of the full two-level model. A review of the fit statistics shows that both the AIC and BIC decreased from the unconditional model (AIC = 602.4, BIC = 605.5) to the full two-level model (AIC = 499.9, BIC = 506.0), indicating that adding the Level 1 and Level 2 predictors increased the fit of the model.

Next, the residual variance was examined to determine the level of unexplained variance in rate of placements in special education after the predictors were entered into the full two-level model. Residual variance was significant in the full two-level model (Estimate = 0.87, SE = 0.16, $z = 5.32$, $p < .01$), indicating that the predictors entered into the multilevel model did not explain all of the variance in the rate of placements in special education. However, the estimate of residual variance decreased from the unconditional model (Estimate = 2.05) to the full two-level model (Estimate = 0.87), indicating that adding the selected variables increased the predictive power of the multilevel model.

Finally, the normality of the residual variances was examined through two visual analyses. Visual analyses of both the scatterplot and stem and leaf plot of the predicted residual variances suggest a relatively normal distribution of the residuals. The scatterplots and stem and leaf plots of the predicted residuals for each of the multilevel models are presented in Appendix J.

Summary of Results

Research Question 1 asked, “Is there a difference between pilot and comparison schools in changes in levels of PS/RtI implementation relative to reading over time?” Results from the multilevel models indicate that significant differences existed between pilot and comparison schools regarding the initial mean PS/RtI reading implementation scores, as well as changes in PS/RtI implementation relative to reading over time.

Specifically, pilot school membership significantly predicted higher initial mean scores on the *Tiers I and II Critical Components Checklist* relative to reading after controlling for the other predictors in the model. Regarding changes over time, pilot school membership significantly predicted increases in mean PS/RtI implementation scores as measured by the *Tiers I and II Critical Components Checklist* relative to reading over time after controlling for the other predictors in the model.

Research Question 2 asked, “What is the relationship between changes in school-level beliefs, perceptions of educational practices, perceptions of PS/RtI skills, and levels of PS/RtI implementation in pilot schools??” Results from the multilevel models indicate that the educator variables did not significantly predict initial mean PS/RtI reading implementation scores or changes in PS/RtI implementation relative to reading over time.

Research Question 3 asked, “What is the relationship between changes in the level of PS/RtI implementation in pilot schools and student (i.e., initial student reading performance) and systemic outcomes (i.e., rate of ODRs and rate of placements in special education)?" Results from the multilevel models indicate that PS/RtI implementation significantly predicted the initial levels of several outcome variables, as well as changes in several of the outcomes variables over time.

Specifically, PS/RtI implementation significantly predicted higher initial mean scores for DIBELS kindergarten PSF and kindergarten NWF after controlling for the other predictors in the model. Regarding changes over time, increases in levels of PS/RtI implementation significantly predicted decreases in mean DIBELS kindergarten NWF scores and placements in special education over time after controlling for the other predictors in the model.

Chapter Five

Discussion

The three research questions addressed in this study examined the relationship between several educational factors and the implementation of PS/RtI, as well as the relationship between the implementation of PS/RtI and student and systemic outcomes targeted by the Florida Problem-Solving/Response to Intervention Project. Specifically, the three research questions addressed (1) potential differences between pilot and comparison schools regarding the implementation of PS/RtI, (2) the relationship between educator variables and the implementation of PS/RtI in pilot schools, and (3) the relationship between the implementation of PS/RtI and student (i.e., initial student reading performance) and systemic (i.e., rate of office discipline referrals, rate of placements in special education) outcomes in pilot schools.

The purpose of the demonstration district component of the Florida PS/RtI Project was to evaluate the impact of the implementation of PS/RtI in the pilot schools and demonstration districts across the state of Florida. Therefore, pilot schools received support from PS/RtI Project staff and comparison schools received no support related to the implementation of PS/RtI. For example, the School-Based Leadership Teams from the pilot schools received three years of training (4-5 days per year) related to implementation of a PS/RtI model, as well as technical assistance designed to assist pilot schools in implementing a PS/RtI model. In contrast, comparison schools received no training or technical assistance from the Florida PS/RtI Project.

The discussion below is organized into five sections. First, potential explanations for the extent to which the implementation of PS/RtI differed between pilot and comparison schools are discussed. Second, the relationships between educator variables and the implementation of PS/RtI are explored. Third, the relationships between the implementation of PS/RtI and student and systemic outcomes are discussed. Fourth, limitations of the current study are discussed. Finally, potential implications for future research are explored.

PS/RtI Implementation in Pilot and Comparison Schools

One multilevel model examined differences between pilot and comparison schools in changes in the implementation of PS/RtI relative to reading over time. The proportion of students receiving free/reduced lunch and school grade for each participating school were entered at Level 1 of the multilevel model as time-varying covariates. School type and district membership were entered as Level 2 predictors in the final two-level model. The extent to which each of these variables contributed to predictions of the (1) levels of implementation of PS/RtI relative to reading and (2) changes in the implementation of PS/RtI relative to reading over time were examined.

Results from the multilevel model examined suggested a relationship between school type and the implementation of PS/RtI relative to reading. Pilot school membership was associated with higher initial levels of implementation of PS/RtI, as well as increases in the implementation of PS/RtI over time. Membership in several districts also was associated with initial levels of implementation of PS/RtI and changes in implementation over time. However, it is difficult to hypothesize differences between districts due to the numerous extraneous variables within each district that could potentially impact implementation of an educational initiative, such as district policies and procedures, competing initiatives within a district, and the technology and data systems available within each district, among others. The proportion of students in a school receiving free/reduced lunch and school grade were not related to initial levels of implementation of PS/RtI or changes in implementation over time.

The finding that pilot school membership was related to increases in the implementation of PS/RtI relative to reading over time provides strong evidence for the relationship between training and technical assistance and the implementation of PS/RtI. School-Based Leadership Team (SBLT) members at each of the pilot schools received four to five full-day trainings during each of the three years of the PS/RtI Project. Additionally, pilot schools received technical assistance from PS/RtI coaches between trainings. These technical assistance sessions were intended to increase the implementation of PS/RtI related practices in each of the schools. The finding that pilot school membership was related to increases in the implementation of PS/RtI over time suggests that the training and technical assistance may have contributed to increases in implementation beyond those noted for comparison schools.

One hypothesis for the larger increases in the implementation of PS/RtI observed in pilot schools compared to comparison schools is the support provided to pilot schools through training and technical assistance. During the three years of the PS/RtI Project, 13 days of training were provided to SBLT members in pilot schools by Project staff. This amounts to roughly 91 hours of professional development targeting the implementation of PS/RtI. Trainings during the first year of the PS/RtI Project focused on the rationale for implementing a PS/RtI model, as well as the four steps of the problem-solving process. Trainings during the second and third year of the PS/RtI Project continuing consensus development, evaluating and building supplemental (Tier II) and intensive (Tier III) intervention systems, using data to make educational decisions, and goal-setting. When teaching new skills, Project staff utilized the model of professional development described by Showers et al. (1987) in which new skills were discussed, modeled, and participants were given opportunities to practice the new skills and receive feedback.

Comparing the results of this question to previous research on implementation of a PS/RtI model of service delivery was difficult due to the lack of comparison schools in previous research. In a review of the research, most researchers evaluating the implementation of a PS/RtI model noted the lack of a comparison group. Many cited that this was due to the many external variables associated with educational research (e.g., competing initiatives or programs, lack of resources, student needs taking priority over best empirical practices) (Marston et al., 2003; VanDerHeyden & Burns, 2005; VanDerHeyden et al., 2007). However, these same studies suggested that training and technical assistance were critical to ensuring that the PS/RtI model was implemented in schools. Marston et al. (2003) noted that research staff provided ongoing training and consultation to all school staff engaged in PS/RtI implementation efforts in their schools. District school psychologists and lead special education resource specialists also were trained to implement the PS/RtI model and then provided additional training and technical assistance to school staff implementing the PS/RtI model. Additionally, VanDerHeyden et al. (2007) described that school psychologists, who already played a pivotal role in the district's prereferral process, were trained prior to leading PS/RtI implementation efforts in their schools. Trained coaches also were present in each of the schools to monitor fidelity of implementation of PS/RtI and provide feedback on implementation. Clearly, ongoing training and technical assistance has been highlighted as a critical component to implementation of a PS/RtI model in schools.

Although previous research on the implementation of PS/RtI has been limited in the inclusion of comparison groups, researchers have suggested general timelines for the full implementation of a PS/RtI model to compare to. Specifically, Batsche et al. (2005) suggested that the implementation of PS/RtI takes 4-6 years in most cases. An examination of the Year 3 PS/RtI implementation scores for pilot schools indicates the mean implementation level was 1.20 out of a possible score of 2.0, compared to a mean implementation level of 0.23 prior to the first year of the Project. These seems to indicate that while pilot school membership was related to greater increases in the implementation of PS/RtI compared to comparison schools, they had not yet reached full implementation by the end of the third year of the Project. Continuing data collection in these pilot schools through the 4-6 years suggested by Batsche et al. (2005) could provide more evidence to the suggested timeline for the implementation of a PS/RtI model. Additionally, future research on the implementation of PS/RtI that includes comparison schools could enhance the results found in the current study.

Relationships Between Educator Variables and PS/RtI Implementation

One multilevel model examined potential relationships between educator variables (i.e., beliefs, perceptions of practices, and perceptions of PS/RtI skills) and changes in the implementation of PS/RtI relative to reading in pilot schools over time. The proportion of students receiving free/reduced lunch and school grade for each participating pilot school were entered at Level 1 of the multilevel model as time-varying covariates. The beginning of Year 1, mean school-level beliefs, perceptions of practices, and perceptions of RtI skills scores for each factor were entered as Level 2 predictors. Additionally, district membership was entered as a Level 2 predictor in the final two-level model. The extent to which each of these variables contributed to predictions of the (1) levels of implementation of PS/RtI relative to reading and (2) changes in the implementation of PS/RtI relative to reading over time were examined.

Results from the multilevel model examined suggested that the educator variables were not associated with initial levels or changes in the implementation of PS/RtI relative to reading over time. Membership in two districts also was associated with initial levels of the implementation of PS/RtI and changes in implementation over time. However, it is difficult to hypothesize differences between districts due to the numerous extraneous variables within each district that could potentially impact implementation of an educational initiative, such as district policies and procedures, competing initiatives within a district, and the technology and data systems available within each district, among others. The proportion of students in a school receiving free/reduced lunch and school grade were not related to initial levels of implementation of PS/RtI or changes in implementation over time.

The finding that none of the educator variables were associated with either initial levels of implementation or changes in the implementation of PS/RtI over time was difficult to explain. The relationship between educator variables and the implementation of PS/RtI was investigated in the current study primarily because of the lack of research in this area specific to the implementation of a PS/RtI model. However, previous research relative to other systems change initiatives has highlighted the importance of educator variables in implementation efforts. The importance of involving stakeholders throughout the change process and achieving consensus has been widely regarded as an important component of any schoolwide systems change effort by several researchers (Curtis, Castillo, & Cohen, 2008; Hall & Hord, 2006; McGlinchey & Goodman, 2008). Related to educator beliefs, Smith et al. (1998) suggested that the compatibility of systems change initiative with the existing philosophies of the school and school staff was related to implementation. Additionally, consensus and buy-in amongst teachers also was highlighted as a critical component to implementation efforts.

A comparison between previous research and the current study reveals differences regarding the relationship between perceptions of skills and implementation efforts. Specifically, Bol et al. (1998) found that teacher perceptions of resource availability and professional development opportunities were significantly related to changes in practices. Nunn et al. (2009) also found that educators' perceptions of RtI skills were significantly related to implementation outcomes, including educators' perceptions of improved outcomes of intervention, satisfaction with results, collaborative team process, and data-based decision-making.

One possible explanation for the lack of statistically significant results regarding the relationship between educator variables and the implementation of PS/RtI in this study is lower than optimal levels of statistical power. Specifically, the full two-level model predicting the implementation of PS/RtI contained four Level-1 units (i.e., time points) and 31 Level-2 units (i.e., schools). As with many statistical analyses, more time points and/or schools could have increased the power of the full two-level model, potentially increasing the probability of detecting significant relationships. Although it is impossible to determine the extent to which adding more Level-1 and Level-2 units would have increased the power of the full two-level model, it is possible that the increased power could have resulted in the detection of more significant predictors (Raudenbush & Bryk, 2002).

Another possible explanation for the lack of statistically significant results is the manner in which the educator variables were entered into the full two-level model. Specifically, the initial (i.e., beginning of Year 1 baseline data collection time point) mean scores for each of the educator variables were entered as constant, school-level predictors at Level 2 of the full two-level model due to concerns about the additional unexplained variance associated with adding too many predictors at Level 1 as time-varying covariates (J. Ferron, personal communication, April 28, 2011). Adding the educator variables in this manner ignored potential relationships between changes in the educator variables and changes in the implementation of PS/RtI over time. Future examinations of the data used in the current study should account for these changes in educator variables over time when they are entered into the multilevel model. One possible suggestion is entering the regression coefficient for each educator variable for each school into the full two-level model.

Relationships Between PS/RtI Implementation and Student Outcomes

Two multilevel models examined the relationship between changes in the implementation of PS/RtI and initial reading performance, as measured by the Dynamic

Indicators of Basic Early Literacy Skills (DIBELS) Phonemic Segmentation Fluency (PSF) and Nonsense Word Fluency (NWF) kindergarten subtests. The school-level, mean kindergarten PSF and NWF scores for each pilot school were entered as the outcome variables in the two multilevel models. The proportion of students receiving free/reduced lunch and school grade for each participating school were entered at Level 1 of the multilevel model as time-varying covariates. The mean PS/RtI implementation score, as measured by the *Tiers I and II Critical Components Checklist*, also was included at Level 1 as a time-varying covariate. District membership was entered as a Level 2 predictor in the final two-level model. The extent to which each of these variables contributed to predictions of the (1) levels of PSF and NWF scores and (2) changes in PSF and NWF scores over time were examined.

Results from the multilevel model examined suggested some relationship between the implementation of PS/RtI and DIBELS kindergarten PSF and NWF scores. PS/RtI implementation was associated with higher initial scores on both the DIBELS PSF and NWF subtests. The relationship between increases in the implementation of PS/RtI and PSF scores was not significant. Interestingly, increases in the implementation of PS/RtI were associated with decreases in mean NWF scores over time. Potential explanations for this finding are discussed below. Membership in several districts also was associated with initial levels of DIBELS kindergarten PSF and NWF scores. However, it is difficult to hypothesize differences between districts due to the numerous extraneous variables within each district that could potentially impact implementation of an educational initiative, such as district policies and procedures, competing initiatives within a district, and the technology and data systems available within each district, among others. The proportion of students in a school receiving free/reduced lunch and school grade were not related to initial kindergarten PSF and NWF scores or changes in PSF and NWF scores over time.

The finding that an increase in implementation of PS/RtI was associated with decreases in DIBELS kindergarten NWF scores over time was difficult to explain. Previous research evaluating the impact of implementing a PS/RtI model in schools has demonstrated increases in student academic achievement (Torgeson, 2009; VanDerHeyden & Burns, 2005). Torgeson (2009) examined outcomes of implementing a PS/RtI model in 318 Florida Reading First schools. Results indicated 40% decreases in the percent of kindergarten students finishing the year with significant reading difficulties (defined as scoring below 20th percentile on a measure of reading comprehension) and 30% decreases in the percent of 1st, 2nd, and 3rd grade students finishing the year with significant reading difficulties (Torgeson, 2009). VanDerHeyden and Burns (2005) found that implementation of a PS/RtI model in one school was significantly related to student growth in intermediate grades (i.e., 3rd, 4th, and 5th), as measured by curriculum based measurement (CBM) math probes. Meta-analyses of the implementation of PS/RtI have also suggested a positive relationship between the implementation of a PS/RtI model and student academic outcomes (Burns et al., 2005; Burns & Symington, 2002; Telzrow et al., 2000).

One potential hypothesis for the differences noted between the results of the current study and previous research is differences in the scope of previous studies examining the implementation of PS/RtI. For example, VanDerHeyden and Burns (2005) evaluated the relationship between implementing a PS/RtI model and math achievement on a much smaller scale than the PS/RtI Project. Specifically, the researchers evaluated the implementation of PS/RtI in only intermediate classes (i.e., 3rd, 4th, and 5th) in one elementary school. In comparison, the PS/RtI Project evaluated the implementation of PS/RtI in 34 pilot schools and 27 comparison schools in 7 school districts across the state of Florida. One PS/RtI consultant facilitated data collection, data analysis, and intervention development and implementation in the three grades (VanDerHeyden & Burns, 2005). Additionally, the consultant trained each of the teachers to deliver the math intervention, observed each teacher delivering the intervention, provided immediate feedback on intervention implementation, and collected and graphed student math data for teachers every week. In comparison, one PS/RtI coach was responsible for facilitating the implementation of PS/RtI in approximately three schools. The higher number of schools likely precluded PS/RtI coaches from engaging in some of the activities described in VanDerHeyden and Burns (2005), such as training individual teachers, collecting and graphing weekly data, and observing and providing feedback to each teacher in the school. Instead, PS/RtI coaches most likely worked more closely with each pilot school's School-Based Leadership Team (SBLT) focusing on schoolwide implementation of the PS/RtI model.

Another possible hypothesis for the conflicting results found in the current study is the suggested timeline for the implementation of PS/RtI of 4-6 years (Batsche et al., 2005). Since Florida discontinued the statewide collection of DIBELS data prior to the 2009-2010 school year, DIBELS data were only available for the first two years of PS/RtI Project implementation. By the end of the second year of PS/RtI Project implementation, the mean PS/RtI implementation score in pilot schools (as measured by the *Tiers I and II Critical Components Checklist*) was 0.93 out of 2.0. This indicates that, on average, pilot schools were "partially" implementing the PS/RtI model. It is possible that "partial" implementation of the PS/RtI model by the end of the second year of the Project was not effective in improving student outcomes in pilot schools. Since DIBELS data were no longer available, further examinations of the data should include evaluations of the relationship between the implementation of PS/RtI and student performance on high-stakes testing (e.g., Florida's Comprehensive Assessment Test [FCAT]).

Relationship Between PS/RtI Implementation and Systemic Outcomes

Two multilevel models examined the relationship between changes in the implementation of PS/RtI and rate of office discipline referrals (ODRs) and rate of placements in special education in pilot schools. The rate of ODRs and rate of placements in special education were entered as the outcome variables in the two multilevel models. The proportion of students receiving free/reduced lunch and school grade for each participating school were entered at Level 1 of the multilevel model as time-varying covariates. The mean PS/RtI implementation score, as measured by the *Tiers I and II Critical Components Checklist*, also was included at Level 1 as a time-varying covariate. District membership was entered as a Level 2 predictor in the final two-level model. The extent to which each of these variables contributed to predictions of the (1) rate of ODRs and placements in special education and (2) changes in rate of ODRs and placements in special education over time were examined.

Results from the multilevel model examined suggested some relationship between the implementation of PS/RtI and rates of ODRs and placements in special education. While the implementation of PS/RtI was not associated with initial rates of ODRs or placements in special education, increases in the implementation of PS/RtI was associated with decreases in special education placements over time. Membership in several districts was associated with initial rates of ODRs and placements in special education, as well as changes in rates of ODRs and placements in special education over time. However, it is difficult to hypothesize differences between districts due to the numerous extraneous variables within each district that could potentially impact implementation of an educational initiative, such as district policies and procedures, competing initiatives within a district, and the technology and data systems available within each district, among others. The proportion of students in a school receiving free/reduced lunch was related to higher initial rates of ODRs, higher initial rates of special education placements, and decreases in placements in special education over time. Increases in school grade were related to decreases in special education placements over time.

The finding that increases in the implementation of PS/RtI was associated with decreases in special education placements provided further evidence to previous research on the implementation of PS/RtI. Specifically, several studies have reported that implementation of a PS/RtI model was related to decreases in special education placements (Burns et al., 2005; Burns & Symington, 2002; VanDerHeyden et al., 2007). One meta-analysis of 21 studies examining the implementation of PS/RtI found high unbiased estimates of effect (UEEs) for both existing field-based PS/RtI models and research-implemented models related to systemic outcomes (Burns et al., 2005). Burns et al. (2005) reported that the average rate of placements in special education in the 21 studies was 1.68% of the student population, significantly lower than previous estimates that about 5% of students exhibit learning disabilities (Lerner, 2002). Another meta-analysis of studies examining the implementation of PS/RtI (Burns & Symington, 2005) reported a high mean effect size (0.90) for both field-based and university-based implementation models related to systemic outcomes. Finally, VanDerHeyden et al. (2007) reported decreases in special education placements from 6% to 3.5% of the student population following the first year of the implementation of PS/RtI in the four schools implementing PS/RtI. While it is impossible to conclude that the implementation of PS/RtI directly impacted decreases in special education placements in PS/RtI Project pilot schools, due to the many extraneous variables associated with educational systems, this finding supports previous research demonstrating a positive relationship between the implementation of PS/RtI and placements in special education. However, since special education placement data were only available for the first two years of PS/RtI Project implementation, it will be important to continue to evaluate the relationship between the implementation of PS/RtI and special education placements in those pilot schools that agreed to continue data collection.

The finding that the implementation of PS/RtI was not associated with decreases in office discipline referrals (ODRs) was not consistent with previous research (Knoff & Batsche, 2005). Knoff and Batsche (2005) found that implementation of a PS/RtI model was associated with decreases in school-based referrals (37% of the school population during baseline to 28% during year 3) and bus-based referrals (35% of the school population during baseline to 24% during year 3). One possible hypothesis for the results found in the current study is the lack of demonstration districts that targeted the implementation of PS/RtI related to behavior. Specifically, due to the many reading initiatives in the state of Florida (e.g., Reading First; Just Read, Florida!) six out of seven demonstration districts targeted the implementation of PS/RtI relative to reading, while only two demonstration districts (District D and District G) targeted the implementation of PS/RtI relative to behavior in a limited number of pilot schools. The lack of pilot schools targeting the implementation of PS/RtI relative to behavior is one hypothesis for the finding that implementation was not associated with decreases in ODRs in pilot schools during the first two years of the PS/RtI Project.

Potential Implications for Practice

Given the quasi-experimental design used by the Florida PS/RtI Project and the preliminary nature of the analyses conducted as part of the current study, the discussion of results above should not be considered cause and effect relationships. Rather, potential explanations of the relationships between the variables were presented and compared to previous research. However, the results of the current study still may have implications for practice. Specifically, the results may suggest some potential implications related to implementation of a PS/RtI model of service delivery.

Findings that pilot school membership was related to significant increases in implementation of PS/RtI, when compared to comparison schools, suggests that the ongoing training and support provided to pilot schools may have assisted in increasing implementation of PS/RtI. During the three-year Project, School-Based Leadership Team (SBLT) members at each of the pilot schools received over 90 hours of direct training from Project staff related to implementation of PS/RtI. Additionally, pilot schools received ongoing, school-based technical assistance and support from PS/RtI coaches throughout the three-year Project. Comparison schools did not receive training or ongoing technical assistance from Project staff. While the Project could not control for various factors (e.g., district-based PS/RtI professional development, district policies and procedures, Florida state statutes), the results of the current study seem to suggest that professional development is an important component of implementing PS/RtI in the schools.

Given the relationship between pilot school membership and implementation of PS/RtI found in the current study, schools and districts that are attempting to implement PS/RtI practices should strongly consider providing training and ongoing, technical assistance to staff. When designing the professional development sequence for the three-year Project, Project staff considered the research of Showers, Joyce, and colleagues (Joyce & Showers, 2002; Showers et al., 1987), which suggests that professional development should include the rationale, modeling, practice opportunities, and immediate feedback related to implementing new practices. These four components of effective professional development were purposefully included in the training sessions delivered to pilot school SBLTs. Additionally, coaches provided additional opportunities for pilot school staff to practice and receive feedback on professional skills related to implementation of PS/RtI.

Another potential implication for practice suggested by the results of the current study is the time necessary to reach full implementation of PS/RtI practices. As mentioned earlier, it has been suggested that full implementation of a PS/RtI model typically takes 4-6 years (Batsche et al., 2005). Several factors, such as school-based leadership, district policies and procedures, consensus development among school staff, and ongoing professional development, could possibly impact the rate at which a school fully implemented a PS/RtI model. Results from the current study indicate that pilot school were only "partially implementing" (as indicated by a mean score of 1.2 out of 2.0 on the Year 3 *Tiers I and II Critical Components Checklist*) a PS/RtI model by the end of the third year of Project implementation. Although pilot schools reported increases in implementation of PS/RtI that were significantly greater than increases in comparison schools, the results seem to suggest that the average pilot school had not yet achieved full implementation of PS/RtI.

The finding that pilot schools had only "partially implemented" PS/RtI by the third year of Project implementation provides some implications for practice. As previously suggested, full implementation of a PS/RtI model could take 4-6 years (Batsche et al., 2005). The results of the study provide support to this suggestion. Schools and districts attempting to implement a PS/RtI model should consider the time and resources necessary to fully implement any large-scale systems-change initiative. Schools and districts should strongly consider the development of a professional development plan, including training and technical assistance related to implementation of PS/RtI. School-based leadership must also consider their current resources, such as available funding, personnel, technology and data support, and educational resources. Based on the resources currently available, school staff can assist in developing a PS/RtI implementation plan. Given the suggestion that full PS/RtI implementation can take 4-6 years, school staff must consider that timeline when creating both short- and long-term goals for implementation of a PS/RtI model.

Potential Implications for Future Research

The findings discussed above provide a starting point for examinations of data collected from pilot and comparison schools during the three years of the Florida PS/RtI Project. However, given the suggestions that the implementation of PS/RtI may take 4-6 years (Batsche et al., 2005), findings following Year 3 of the Project should continue to be examined to extend the results found in the current study. This is especially relevant for examination of the relationship between the implementation of PS/RtI and student and systemic outcomes, as student and systemic data were only available for the first two years of Project implementation (i.e., 2007-2008 and 2008-2009) at the time of the current study. Fortunately, in 2010 six demonstration districts agreed to continue data collection after the culmination of the three-year PS/RtI Project. In addition to continuing to monitor the findings of the current study, the results of this study suggest some other questions to consider.

One component of the implementation of PS/RtI that was examined in this study was the relationship between educator variables (i.e., beliefs, perceptions of educational practices, and perceptions of PS/RtI skills) and the implementation of PS/RtI. Results suggested that initial levels of educator variables were not related to changes in the implementation of PS/RtI. Several potential explanations for this finding were discussed above. Examining the relationship between changes in the educator variables over time and changes in the implementation of PS/RtI would expand on the findings from the current study.

The relationship between the implementation of PS/RtI and initial student reading outcomes (i.e., DIBELS kindergarten PSF and NWF subtests) also was examined.

Findings indicate that higher initial levels of the implementation of PS/RtI were associated with higher initial mean DIBELS kindergarten PSF and NWF scores, while increases in the implementation of PS/RtI over time were associated with decreases in mean DIBELS kindergarten NWF scores. Potential explanations for the findings were discussed above. Since DIBELS data were no longer available after the second of PS/RtI Project, examining the relationship between the implementation of PS/RtI and additional student outcomes (e.g., Stanford Achievement Test Series, Tenth Edition [SAT-10], Florida's Comprehensive Assessment Test [FCAT]) would expand on the findings from the current study.

Finally, the current study investigated the relationship between the implementation of PS/RtI and systemic outcomes (i.e., rate of ODRs and placements in special education). Results indicated that, while the initial level of implementation of PS/RtI was not associated with rates of ODRs or placements in special education, increases in the implementation of PS/RtI were associated with decreases in the rate of placements in special education. Potential explanations for the findings are discussed above. Since systemic outcome data were only available for the first two years of PS/RtI Project implementation and previous implementation efforts suggest that full implementation of a PS/RtI model can take 4-6 years (Batsche et al., 2005), continuing to investigate the relationship between the implementation of PS/RtI and the systemic outcomes examined in the current study (i.e., office discipline referrals, placements in special education) would further clarify the results found in the current study. Additionally, examining the relationship between the implementation of PS/RtI and additional systemic variables (e.g., referrals for special education, student retention) would expand the results of this study.

Limitations

Several potential limitations to the current study must be considered when interpreting findings. One factor that influenced the interpretations and implications of results from the current study is the quasi-experimental design used to address the research questions. Although the Florida PS/RtI Project included comparison schools as a way to measure differences between schools receiving training and technical assistance related to the implementation of PS/RtI (i.e., pilot schools) and schools receiving no support from the Project (i.e., comparison schools), Project staff could not control all of the many extraneous variables associated with educational initiatives. Some of those extraneous variables included changes in Florida state statutes related to the identification of specific learning disabilities (Florida Administrative Codebook, 2009), state initiatives related to statewide implementation of PS/RtI (Florida Bureau of Exceptional Education and Student Services, 2006; Florida Department of Education, 2008), as well as district-supported PS/RtI training, technical assistance, and policies and procedures. Due to these extraneous variables, significant relationships between variables in the current study could not be discussed in terms of cause and effect. However, potential explanations for the findings were provided and discussed in the context of previous research on the implementation of PS/RtI.

Another factor that influenced interpretations and implications was the suggestion that implementation of a PS/RtI model can take 4-6 years for full implementation (Batsche et al., 2005). Given that this study examined outcomes after three years of

PS/RtI Project implementation (only two years for the research questions examining student and systemic outcomes), results were still viewed as preliminary. Future examinations of the Florida PS/RtI Project will provide more conclusive evaluations of the research questions that were identified in the current study.

One potential threat to internal validity was the control that Project staff had in the implementation of PS/RtI in pilot and comparison schools. Although pilot schools received ongoing training, technical assistance, and coaching throughout the three-year implementation Project, the possibility of implementation drift existed due to the complexity of implementing new practices and the many extraneous variables associated with implementing new systems in education. Additionally, the Project staff was not able to control the extent to which components of a PS/RtI model were implemented in comparison schools. It is possible that comparison schools were exposed to components of a PS/RtI model due to the statewide efforts to implement PS/RtI in Florida (Florida Bureau of Exceptional Education and Student Services, 2006; Florida Department of Education, 2008). However, Project staff did use the *Tiers I and II Critical Components Checklist* to measure the implementation of PS/RtI in both pilot and comparison schools. Results from the *Tiers I and II Critical Components Checklist* also were shared with SBLTs in pilot schools to assist in planning for future PS/RtI implementation efforts. The results were not shared with leadership staff in comparison schools. Finally, Project staff was not responsible for the hiring of PS/RtI coaches used to facilitate the implementation of PS/RtI throughout this Project. Although coaches were funded through Project mini-grants, the demonstration districts controlled hiring procedures. Project staff did discuss the skills needed to be an effective coach with district staff. Additionally, Project staff provided ongoing training and technical assistance to coaches in an attempt to ensure consistency in both the skill level of coaches, as well as the services that coaches delivered to facilitate the implementation of PS/RtI in their schools. However, the lack of control in the selection of PS/RtI coaches was a potential limitation to Project implementation and this study.

Another potential limitation to the current study is the manner in which educator data were collected. In order to gather information about educator beliefs, perceptions of educational practices, and perceptions of PS/RtI skills, Project staff designed self-report, survey measures that were completed by educators at select time points. While this method allowed Project staff to quickly and efficiently collect data from over 2,000 educators during each data collection time points, self-report data are not without limitations. For example, the potential for exaggerations of participants' responses and individual biases affecting participants' responses at the time of data collection are common concerns related to self-report data collection.

Several potential threats to external validity also exist. First, the extent to which results from this study can be generalized to other schools, districts, and states depends on the degree to which education agencies share similar demographic characteristics of the schools and districts used in this study. Another threat to external validity is the extensive support offered to Project districts and pilot schools. For the purpose of this program evaluation Project, a bevy of resources (i.e., training, technical assistance, coaching, data collection) were provided to pilot schools in an effort to facilitate the implementation of PS/RtI. It is possible that typical school districts and schools might not be able to allocate the amount of resources provided in the current evaluation, potentially limiting the extent to which some results of this study could be generalized to other schools and districts.

Conclusion

Findings from the current study suggest a positive relationship between the training and technical assistance delivered to pilot schools and the implementation of PS/RtI. Specifically, pilot school membership was associated with increases in the implementation of PS/RtI compared to comparison schools. The relationship between educator variables (i.e., beliefs, perceptions of educational practices, and perceptions of PS/RtI skills) and the implementation of PS/RtI was not significant. However, the implementation of PS/RtI was associated with decreases in DIBELS kindergarten NWF scores, as well as decreases in special education placements over time. These findings represent results following Year 3 of the PS/RtI Project. Further examinations of the research questions addressed in this study, as well as additional questions, should be conducted to expand and clarify on the results of the current study.

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Appendix A

Florida PS/RtI Project District Application and Evaluation Rubric

TO: School Districts, State of Florida

FROM: Florida Problem Solving/Response to Intervention Statewide Project

SUBJECT: Problem-Solving/Response to Intervention (PS/RtI) Demonstration Site

Mini-Grant Application Procedures

Background

The No Child Left Behind Act (NCLB) and the Individuals with Disabilities Education Improvement Act (IDEIA) of 2004 embrace the use of Problem-Solving and Response to Intervention (Instruction) (PS/RtI) to ensure that ALL students achieve state-approved grade-level benchmarks. In addition, the PS/RtI method has become part of the eligibility requirements for students with disabilities (effective October 13, 2006). The Florida Department of Education (FLDOE) has funded the Florida Problem-Solving/Response to Intervention Project to ensure that all districts in Florida have access to high quality training in the skills necessary to implement this model. The Florida Problem Solving/Response to Intervention Project is funded by a grant from the Florida Department of Education and is administered through the University of South Florida.

The purposes of the FLDOE PS/RtI Project are twofold: 1) organize and deliver statewide training in PS/RtI and 2) evaluate the impact of the PS/RtI model on district, building and student outcomes. The evaluation of the impact of PS/RtI will take place in pilot school sites in demonstration districts throughout Florida.

Demonstration districts will be selected from among those districts completing a Mini-Grant Application. The purpose of this memo is to disseminate information regarding the Mini-Grant Application process.

General Information

Eligible Applicants: Any Florida public school district is eligible to apply to become a PS/RtI Demonstration District.

Pilot Schools: Each district may request funding to support a maximum of six (6) pilot schools within the district. Proposed pilot schools within the district must house at least grades K-3. Demonstration districts may include Reading First schools, Positive Behavior Supports schools, or schools participating in other state or local initiatives. The district must identify one (1) comparison school for each pilot school proposed in the application. The comparison school must contain the same grade levels and share similar student demographics as the pilot school(s). The comparison school data will be used to compare the impact of the PS/RtI Project in schools with and without project implementation.

Start Date: It is estimated that initial implementation activities with the demonstration sites will begin in the spring of 2007, with full implementation starting with the 2007-2008 school year.

Application Deadline: Complete applications must be <u>received</u> by April 1, 2007. Mail the original and 5 copies to: Judith Hyde

University of South Florida

4202 E. Fowler Avenue, EDU 162

Tampa, FL 33620

No FAX or email copies of proposals will be accepted.

Informational Meetings: All districts interested in completing a mini-grant application to become a demonstration district are invited to attend one of three orientation/informational meetings to be held in the north, central, and south regions of the state (see Appendix A). Each district may send up to three people, including the individual who will be primarily responsible for facilitating the grant writing team, one administrative representative from general education and one administrative representative from special education.

Each meeting is scheduled from 9:00 a.m. to 1:00 p.m. The meeting agenda will include presentations on the Florida Problem Solving/Response to Intervention Project, the responsibilities of participating districts and procedures for completing the mini-grant application. Mini-grant application requirements are described below. District representatives are encouraged to review the application requirements prior to the meeting. A question and answer (Q and A) session will be included in each meeting.

NOTE: Pre-registration is required in order to attend one of the Informational Meetings. To pre-register, go to http://floridarti.usf.edu/bidderconference/, click on "Registration," complete the form and click on "Submit Registration." If you encounter any difficulties with pre-registration, contact Judi Hyde at JHyde@tempest.coedu.usf.edu or 813-974-7448. The schedule for these meetings is as follows:

Monday, February 26
Ft. Lauderdale
Embassy Suites
1100 Southeast 17th Street
Directions:
http://www.embassysuites.com/en/es/hotels/maps_directions.jhtml?ctyhocn=FLLSOES
954-527-2700

Thursday, March 1
Tallahassee
Doubletree Hotel
101 S. Adams St.
Directions:
http://doubletree.hilton.com/en/dt/hotels/index.jhtml?ctyhocn=THLAPDT
850-224-5000

Monday, March 5

Orlando

Orlando Airport Marriott

7499 Augusta National Drive

Directions: http://marriott.com/property/propertypage/mcoap

407-851-9000

Attendance at one of the regional meetings is strongly encouraged but not required of districts planning to submit a mini-grant application.

Contact Person: For more information about application procedures, contact Clark Dorman, Project Leader at Dorman@coedu.usf.edu or 813-391-3059**.**

Overview of the Demonstration Site Project

The demonstration site component of the Statewide PS/RtI Project is designed to provide training, technical assistance and implementation support to individual schools within school districts. Statewide Project staff will conduct the training, provide technical assistance and provide other training and implementation supports to the pilot schools. Pilot schools, in turn, will serve as evaluation sites to determine the impact of this project on student and other district and building outcomes.

The demonstration site component of the Project will rely on a "coaching" and "trainers" method for implementation. State Project staff will serve as the "external coaches" to the schools. Funding will be provided for districts to hire one "internal" coach for up to three (3) pilot schools. Each school will create a "school-based" implementation team consisting of six to eight members that includes representatives of general education, special education, instructional support and student services. The building administrator must be included as a member of the team. Building teams will learn how to develop a building implementation plan. The school-based team and the building coach will become "trainers" and "coaches" for the building staff and will be responsible for building-wide implementation.

I. Services Provided to Demonstration Schools by the Statewide Project Staff

1. Training and technical assistance for school-based teams to implement the Problem Solving/Response to Intervention model in pilot schools
2. Funding for each selected demonstration district for up to two coaches (one for each three schools) to complement training and provide technical assistance to pilot school sites in implementing PS/RtI, data collection and analysis, and dissemination of student outcome data
3. Training of and technical assistance and support for the coaches and building administrators
4. Training, technical assistance and support for the use of school-based data to develop, implement and evaluate core, supplemental and intensive instruction/intervention
5. Training and technical assistance in the use of technology to organize and display building, classroom and student-based data
6. Training and technical assistance in the use of technology to monitor intervention implementation, support data-based decision making and track student progress

7. Support integration of existing and potential state-level, district and school initiatives to facilitate implementation of DOE Strategic *Imperative #3-Improve students' rates of learning*, and Strategic Imperative #5-*Increase the quantity and improve the quality of education options*
8. Provide web-based programs to collect and organize data from the demonstration sites. Internal coaches will be responsible for submitting demonstration site data to the web-based programs

II. Expectations of Demonstration Districts and Pilot Sites

Each demonstration district may identify up to six (6) pilot schools and an equal number of comparison schools within the district. In order to receive the services delineated above, districts and their pilot schools submitting an application under this project initiative must agree to the requirements set forth in "Commitments Needed for Success" in Appendix B. These include certain district- and school-level administrative, curricular, financial, and personnel commitments, as well as parent involvement, data collection and reporting requirements.

Each proposed pilot school must have a comparison school that is similar to it on key demographic variables. Comparison schools will be asked only to participate in certain data collection activities, and must agree to participate in these activities. Coaches will support the collection of data in both pilot and comparison schools.

III. Funding

Each district may submit a mini-grant application for up to $100,000.00 per year in funding for a maximum of three years. The mini-grant is intended to support the employment of district-based coaches and training activities. Districts must commit to a minimum of three years of project implementation. Each application is for one year of funding. Continuing applications will be required each year for years 2 and 3 of the funding cycle. Continuation of funding for years 2 and 3 will be contingent on fulfillment of expectations by the district and pilot and comparison schools.

Mini-Grant Application Requirements

Each proposal must address each of the five components specified below in a narrative format, in the order in which they are presented for a) the demonstration district, and b) **each** of up to six (6) proposed pilot schools within the district. The total narrative (excluding demographic data required in item 2 below) must be double-spaced, using a 12-point font and should not exceed 25 pages in length. Documentation required in 1 and 2 below should be included in appendices to the application and do not count against the 25 page limit.\

1. <u>District and Pilot Schools Commitment</u>:
Proposals must outline specific commitments to implementing PS/RtI as a way of work and the activities (i) the district, and (ii) pilot schools will carry out in order to meet the requirements specified in Appendix B. Letters of agreement/commitment from the following individuals must be included in the grant application. (See Appendix B for the minimum required content of these letters).

a) District Superintendent
b) Assistant Superintendent for Curriculum and Instruction
c) Director of Elementary Education
d) Director of Exceptional Student Education
e) Director(s) of district/school-wide Reading First and Positive Behavior Support Programs (if applicable)
f) Principal of each of the proposed pilot schools
g) Principal of each comparison school to provide data requested by Project Staff

2. <u>District, Pilot and Comparison Schools Demographic Data</u>:
Proposals must include an outline of the

a) District demographic data (see Appendix C- "Demonstration District Demographic Profile")
b) Each proposed pilot school's demographic data (see Appendix D – "Demonstration Pilot School's Demographic Profile"), and
c) Each comparison school's demographic data (see Appendix E- "Comparison School Demographic Profile")

(Appendices C, D, and E outline the minimum required content for this section.)

3. **Statement of Need and Expected Outcomes:**
Proposals must, for **each** pilot school

a) Describe the school's needs (particularly student academic and/or behavioral needs) that will be addressed through participation in the PS/RtI project, including specific gaps, barriers, or weaknesses
b) Indicate how implementation of the PS/RtI model would impact the academic and/or behavioral outcomes of students in each pilot school
c) Identify measurable student and school outcomes, tied to the identified needs, that will result from participation as a pilot school site
d) Identify outcomes for specific target populations or school goals, including over-representation of minority students in special programs, low-SES and LEP students and/or D/F school status

4. **District and Pilot Schools' Experience with Initiatives and Programs:**
Proposals must describe the district's and each pilot school's current and/or previous level of involvement in and extent of implementation (e.g., beginning, intermediate, fully implementing) of academic and/or behavioral initiatives and programs (e.g., Just Read Florida, Positive Behavioral Support). Include information for any reading initiatives implemented within the last five years in the district and in each proposed pilot school. Specify any existing curriculum-based measures (e.g., DIBELS, CBM-Math) or data collection tools (e.g., PMRN, SWIS, AIMSweb®) currently in use. In addition, discuss any involvement the district and each proposed pilot school has had with the following FLDOE projects/initiatives:

- Continuous Improvement Model (CIM)
- Reading First
- Just Read Florida
- Voluntary Pre-K (VPK) programs
- Positive Behavior Support
- PS/RtI

Describe any other educational reform initiatives or elements of the above initiatives in which the district or school has been involved within the past five years.

5. **<u>District Personnel Resources and Technology:</u>**
<u>Proposals must, for the district and each proposed pilot school:</u>

a) Identify personnel (e.g., teachers, student support staff, and administrative staff) who will be assigned to this specific initiative at the district level and in each specific pilot school site; identify one coach for each three pilot schools
b) Identify percent FTE each will be assigned
c) Identify experience/qualifications to support implementation of the PS/RtI initiative
d) Include a brief vita for each of the individuals identified as a potential coaches in (a) above in an appendix to the application
e) Briefly describe the technology resources at the building or district levels that will be used in support of this initiative. In particular, describe any data management systems that will be used

(See Appendix B)

The Application Process

<u>Only one</u> (1) mini-grant application will be accepted from each district.

The Application Packet should include:

1) A Cover Letter from the District Superintendent indicating a desire for the district to participate in the PS/RtI Project

2) The School District's response to relevant components of the proposal as specified under Proposal Requirements:
   - Component 1 - District Commitment
   - Component 2 - District Demographic Data
   - Component 4 - District and School Experience with Initiatives and Programs
   - Component 5 - Personnel Resources and Technology
   - Letters of Agreement/ Commitment as described above in sections 1.a) through 1.g)

3) Pilot Schools' Responses – A response for ***<u>each</u>*** proposed pilot school (up to six schools) to relevant components of the proposal as specified under Proposal Requirements:

   - Component 1 - Pilot School Commitment
   - Component 2 - Pilot School Demographic Data and Comparison School Demographic Data
   - Component 3 - Statement of Need and Expected Outcomes for the Pilot School
   - Component 4 - Pilot School's Experience with Initiatives and Programs
   - Component 5 - Personnel Resources and Technology

Proposal Evaluation Scoring Guide

Total points awarded will be an important consideration in the selection of demonstration districts. However, it also is important that a diversity of students, schools, and districts be represented in the demonstration districts and their pilot schools. Therefore, after all applications have been evaluated against the criteria below and have received a final score of from 0 to 175, additional factors will be considered prior to the selection of sites. Districts and pilot schools will be selected to include sites that are diverse with respect to:

1. Size of districts (i.e., small, medium, and large)
2. Geographic location
3. Student population demographics
4. Inclusion of D/F schools

The application from each district will be evaluated using the **Proposal Evaluation Form** according to the following criteria:

1. **District and Pilot Schools Commitment (*50 points*):** The proposal demonstrates clear administrative, programmatic and fiscal commitment (including the required letters of commitment) to fully implementing PS/RtI and a capacity to fulfill the demonstration site's requirements as outlined in Appendix B. ***(Note: District=20, mean rating across pilot schools = 30)***

2. **District and Pilot and Comparison Schools' Demographic Data (*30 points*):** The proposal provides detailed and current demographic data for the district and each proposed pilot school as required in Appendices C, D and E respectively. It provides a clear picture of the district's and pilot and comparison schools' status on the indicators given. ***(Note: District=10, mean rating across pilot schools =15, mean rating across comparison schools =5)***

3. **Statement of Need and Expected Outcomes (*35 points*):** The proposal clearly defines each pilot school's needs that will be addressed through participation as demonstration sites and provides convincing evidence that without assistance from the project, these needs would not be met. The proposal also delineates projected student and school outcomes, including outcomes for specific target populations that: a) are

measurable, b) are clearly linked to the identified needs, and c) that demonstrate an increased capacity to support students' academic and behavioral performance in the general education environment. ***(Note: Mean rating across pilot schools=35)***

4. **District and School Experience with Initiatives and Programs (*20 points*):** The proposal describes in detail the level of district and school involvement in academic and/or behavioral initiatives and programs, resulting in a comprehensive picture of the district's and each pilot school's current systemic capacity. ***(Note: District=10, mean rating across pilot schools =10)***

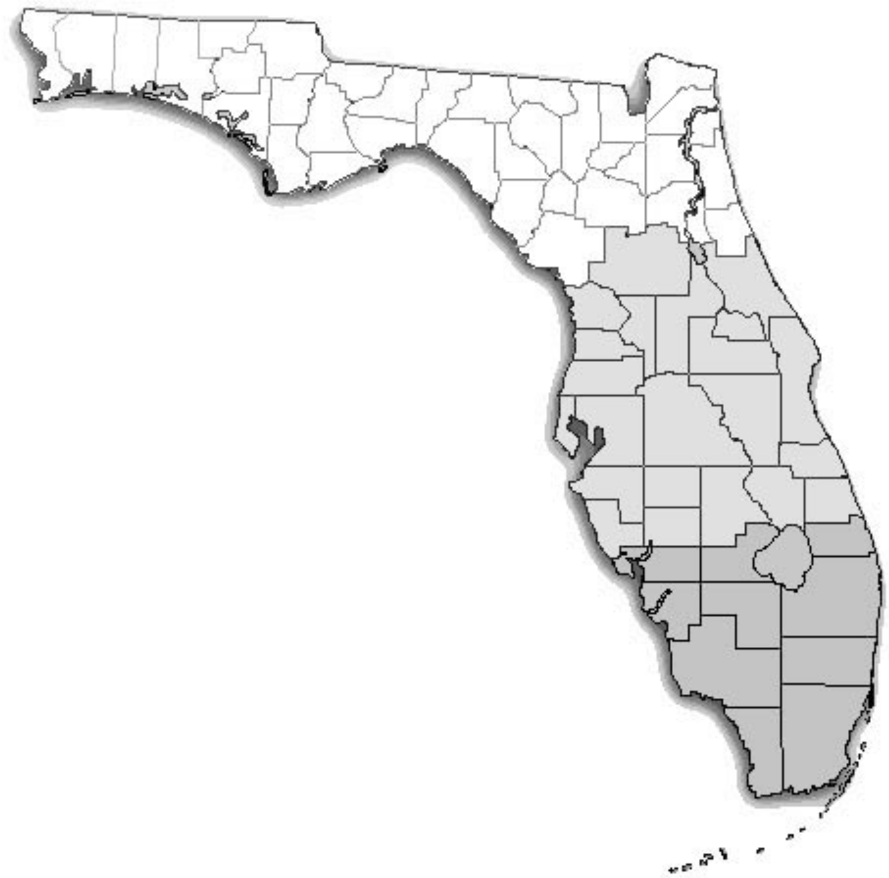
5. **District Personnel Resources and Technology (*15 points*).** The proposal clearly identifies personnel assigned to the PS/RtI initiative at a) the district level, and b) each proposed pilot school site and the percent FTE each is assigned to the initiative. It provides a clear picture of personnel qualifications and experience to support implementation of PS/RtI. Technology resources and a data management system to support the initiative at the district and school site level are clearly delineated. (***Note: District = 6, mean rating across pilot schools =9***)

6. **Inclusion of D/F Schools (*25 points*).** D or F schools are represented among the proposed pilot school sites.

Total Possible Score = 175 points

APPENDIX A

PS/ RtI Regional Areas



APPENDIX B

Commitments Required for Success

Demonstration District Administration will commit to:

1. Developing and implementing a plan to ensure that general education, special education and other program personnel work together at the district level to effectuate the successful implementation of PS/RtI in the district pilot schools
2. Assigning district personnel with the requisite qualifications and experience to the PS/RtI initiative to support district coordination and implementation of the initiative across the pilot school sites
3. Putting in place a district-level leadership team to help pilot schools with the implementation of the PS/RtI initiative
4. Implementing evidenced-based practices to support learning of all students, including those at risk and ESE students, to achieve AYP and Florida's A^+ Education Plan
5. Designating funds/resources to implement research-based supplemental instruction and interventions to support students who do not attain expected grade-level outcomes in reading and math
6. Designating resources to adequately support PS/RtI implementation at both the district and pilot school level, including faculty and staff, time, materials for screening, assessment and interventions, and financial support for scientifically-based progress monitoring software (e.g., AIMSweb® or DIBELS)
7. Providing funds/resources (including time) for professional development of district-level personnel and pilot school teachers and staff in PS/RtI, data collection and management, data analysis and interpretation
8. Having in place the technological resources and infrastructure, including personnel, and a data management system to ensure ease of access to student performance data by school level and project personnel and to support the PS/RtI initiative
9. Providing access to district and state-level student performance data for school-level and project reporting purposes
10. Developing and implementing a plan to ensure parent involvement with PS/RtI efforts at the district and pilot school levels
11. Reviewing the district's policies and procedures for general and exceptional student education to ensure that they are consistent with PS/RtI

Pilot School Principal and Administrative Team will commit to:

1. Implementing PS/RtI as a way of work at the pilot school site
2. Assigning personnel with the requisite qualifications and experience to the PS/RtI initiative to support its implementation at the school site
3. Putting in place a school leadership team that is representative of the school's grade level faculty, support staff and parents (consisting of individuals with collective knowledge and experience in leadership, curriculum, data-based decision-making and systems change)
4. Being active participants in the school leadership team (attend PS/RtI trainings and team meetings)
5. Providing for a regularly scheduled time and place for team meetings
6. Securing agreement from the school faculty to commit to PS/RtI Project Initiative training and practices (including identification and selection of appropriate scientifically-based interventions, continuous monitoring of student progress and the systematic review of academic and discipline data for decision-making)
7. Developing and implementing a plan to ensure that general education, special education and other program personnel work together to effectuate the successful implementation of PS/RtI at the pilot school site
8. Allocating required resources (funds, designated time, staff) to facilitate professional development of teachers and other professional personnel at the school site
9. Working collaboratively with the Project Coach and Regional Coordinator in implementing PS/RtI at the school site
10. Providing dedicated time and resources for the Project Coach to work with classroom teachers and other school-based support personnel (as needed) to effectively support PS/RtI implementation at the school site
11. Allocating required personnel and other resources (e.g., teachers, administrative staff, time, materials) for full implementation of PS/RtI at the school site
12. Having in place adequate technology infrastructure and a data management system to support the PS/RtI initiative at the pilot school site
13. Reallocating resources based on data outcomes
14. Budgeting funds for PS/RtI supplies, materials, travel and substitutes for team trainings/meetings, etc.

School Leadership Team will commit to:

1. Implementing a team-based, problem-solving process to provide interventions for all students at the universal, targeted and intensive levels
2. Participating in PS/RtI trainings and networking meetings

3. Working collaboratively with the Project Coach and Regional Coordinator (as needed) to effectively implement PS/RtI at the school site
4. Meeting on a regular basis at specified times for school leadership team meetings
5. Collecting and using student outcome data for decision-making purposes
6. Working collaboratively with parents to ensure their involvement in PS/RtI planning, training and implementation activities
7. Using and submitting required student performance and other data (e.g., satisfaction surveys)
8. Developing an annual action plan for PS/RtI activities based on analysis of collected data

Appendix C

District Demographic Data Outline

1. Total student enrollment

2. Student enrollment
   - By grade level
   - By race/ethnicity
   - By SES (use eligibility for free and reduced lunch)

3. Number and percent (of student population) of LEP students
   - Overall
   - By grade level

4. Number and percent of students with disabilities (elementary level)
   - By grade
   - By race/ethnicity
   - By disability type
   - Analysis of disproportionality in the identification of students eligible for special education, if available

5. Student performance on FCAT in reading and mathematics
   - For all elementary level students
     - By grade level
     - By race/ethnicity
   - For elementary level students with disabilities
     - By grade level
     - By race/ethnicity
     - By disability
   - For LEP students
     - By grade level

6. Percent of students (at elementary level) who attained AYP in AY 2004-05 and AY 2005-06
   - overall
   - by grade level

- by race/ethnicity
- SES
- LEP status

7. Number and percent of students retained in grade 3 based on performance on FCAT reading in
   - AY 2004-05
   - AY 2005-06

Appendix D

Pilot School Demographic Data Outline

(To be completed for <u>each</u> Proposed Pilot School)

1. Grade levels served (school site must at least house grades K – 3)

2. Total student enrollment (report number and percent)
   - By grade level
   - By race/ethnicity
   - By SES (based on eligibility for free and reduced lunch)

3. Number and percent (of student population) of LEP students
   - Overall
   - By grade level

4. Number and percentage of students with disabilities
   - By grade level
   - By disability type
   - By race/ethnicity
   - Analysis of disproportionality in the identification of students as eligible for special education, if available

5. Number and percent of students placed in ESE in AY 2004-05 and AY 2005-06
   - By grade level
   - By disability type
   - By race/ethnicity

6. Educational environment/least restrictive environment data for students with disabilities
   - By grade level
   - By disability type
   - By race/ethnicity
   - Analysis of disproportionality in placement of students, if available

7. Title I status (non-Title I, Title I targeted assistance, or Title I school-wide)

8. Student performance on FCAT in reading and mathematics
   - For all students
     - By grade level
     - By race/ethnicity
   - For students with disabilities
     - By grade level
     - By race/ethnicity
     - By disability
   - Analysis of performance gap between students with and without disabilities

9. Percent of students who attained AYP in AY 2004-05 and AY 2005-06 for reading and mathematics
   - overall
   - by grade level
   - by race/ethnicity
   - SES
   - LEP status

10. Number and percent of students retained in Grade 3 based on performance on FCAT reading in
    - AY 2004-05
    - AY 2005-06

11. School Grade (i.e., A through F) assigned by FLDOE based on 2005-06 school year: _____

12. Does your school currently have or ever had a Reading First Grant?
    _____Yes _____No

13. Does your school have a positive behavior support (PBS) program in place?
    ____ Yes ____No

Appendix E

Comparison School Demographic Data Outline

(To be completed for each Comparison School)

1. Identify pilot school for which school will serve as comparison

2. Grade levels served (school site must at least house grades K – 3)

3. Total student enrollment (report number and percent)
    - By grade level
    - By race/ethnicity
    - By SES (based on eligibility for free and reduced lunch)

4. Number and percent (of student population) of LEP students
    - Overall
    - By grade level

5. Number and percentage of students with disabilities
    - By grade level
    - By disability type
    - By race/ethnicity
    - Analysis of disproportionality in the identification of students as eligible for special education, if available

6. Number and percent of students placed in ESE in AY 2004-05 and AY 2005-06
    - By grade level
    - By disability type
    - By race/ethnicity

7. Educational environment/least restrictive environment data for students with disabilities
    - By grade level
    - By disability type
    - By race/ethnicity
    - Analysis of disproportionality in placement of students, if available

8. Title I status (non-Title I, Title I targeted assistance, or Title I school-wide)

9. Student performance on FCAT in reading and mathematics
    - For all students
        - By grade level
        - By race/ethnicity
    - For students with disabilities
        - By grade level
        - By race/ethnicity
        - By disability
    - Analysis of performance gap between students with and without disabilities

10. Percent of students who attained AYP in AY 2004-05 and AY 2005-06 for reading and mathematics
    - overall
    - by grade level
    - by race/ethnicity
    - SES
    - LEP status

10. Number and percent of students retained in Grade 3 based on performance on FCAT reading in
    - AY 2004-05
    - AY 2005-06

11. School Grade (i.e., A through F) assigned by FLDOE based on 2005-06 school year: _____

12. Does your school currently have or ever had a Reading First Grant?
    _____Yes _____No

13. Does your school have a positive behavior support (PBS) program in place?
    _____Yes _____No

Proposal Evaluation Scoring Guide

Total points awarded will be an important consideration in the selection of demonstration districts. However, it also is important that a diversity of students, schools, and districts be represented in the demonstration districts and their pilot schools. Therefore, after all applications have been evaluated against the criteria below and have received a final score of from 0 to 175, additional factors will be considered prior to the selection of sites. Districts and pilot schools will be selected to include sites that are diverse with respect to:

1. Size of districts (i.e., small, medium, and large),
2. Geographic location,
3. Student population demographics
4. Inclusion of D/F schools

Evaluate the application from each district on the **Proposal Evaluation Form** according to the following criteria:

1. **District and Pilot Schools Commitment (50 *points*):** The proposal demonstrates clear administrative, programmatic and fiscal commitment (including the required letters of commitment) to fully implementing PS/RtI and a capacity to fulfill the demonstration site's requirements as outlined in Appendix B. *(**Note: District=20, mean rating across pilot schools = 30**)*

2. **District and Pilot and Comparison Schools' Demographic Data (*30 points*):** The proposal provides detailed and current demographic data for the district and each proposed pilot school as required in Appendices C, D and E respectively. It provides a clear picture of the district's and pilot and comparison schools' status on the indicators given. ***(Note: District=10, mean rating across pilot schools =15, mean rating across, comparison schools =5)***

3. **Statement of Need and Expected Outcomes (*35 points*):** The proposal clearly defines each pilot school's needs that will be addressed through participation as

   demonstration sites and provides convincing evidence that without assistance from the project, these needs would not be met. The proposal also delineates projected student and school outcomes, including outcomes for specific target populations that: a) are measurable, b) are clearly linked to the identified needs, and c) that demonstrate an increased capacity to support students' academic and behavioral performance in the general education environment.***(Note: Mean rating across pilot schools=35)***

4. **District and School Experience with Initiatives and Programs (20 *points*):** The proposal describes in detail the level of district and school involvement in academic and/or behavioral initiatives and programs, resulting in a comprehensive picture of the district's and each pilot school's current systemic capacity. ***(Note: District=10, mean rating across pilot schools =10)***

5. **District Personnel Resources and Technology (*15 points*).** The proposal clearly

identifies personnel assigned to the PS/RtI initiative at a) the district level, and

b) each proposed pilot school site and the percent FTE each is assigned to the

initiative. It provides a clear picture of personnel qualifications and experience

to support implementation of PS/RtI. Technology resources and a data management system to support the initiative at the district and school site level are clearly delineated (***Note: District = 6, mean rating across pilot schools =9***)

6. **Inclusion of D/F Schools (*25 points*).** D or F schools are represented among the proposed pilot schools sites.

Total Possible Score = 175 points

Proposal Evaluation Form

School District: ___________________ Reviewer: ___________________

Date of Review: ___________________

Refer to the **Proposal Evaluation Scoring Guide** for an explanation of factors to be considered in evaluating each of the following areas:

1. **District and Pilot Schools Commitment (Total Possible Points = 50)**

District Rating (0 to 20 Points) _____

Pilot Schools (0 to 30 Points Each)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Mean Pilot School Rating (0 to 30 Points) _____

Subtotal Points Awarded (District plus Mean Pilot Schools) =

Comments:

2. **District and Pilot and Comparison Schools' Demographic Data (Total Possible Points = 30)**

District Rating (0 to 10 Points) _____

Pilot Schools (0 to 15 Each)	Comparison Schools (0 to 5 Each)
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____

Mean Pilot School Rating (0 to 15) _____

Mean Comparison School Rating (0 to 5) _____

Subtotal Points Awarded (District, plus Mean Pilot, plus mean Comp) =

Comments:

3. **Statement of Need and Expected Outcomes (Total Possible Points = 35)**

Pilot School Ratings (0 to 35 Each):

1. _____

2. _____
3. _____
4. _____
5. _____
6. _____

Subtotal Points Awarded (Mean Rating for Pilot Schools) =

Comments:

4. **District and School Experience with Initiatives and Programs (Total Possible Points = 20)**

District Rating (0 to 10 Points) _____

Pilot School Ratings (0 to 10 Points Each):

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Mean Pilot School Rating (0 to 10) _____

Subtotal Points Awarded (District plus Mean for Pilot Schools) =

Comments:

5. **District Personnel Resources and Technology (Total Possible Points = 15)**

District Rating (0 to 6 Points) _____

Pilot School Ratings (0 to 9 Points Each):

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Mean Pilot School Rating (0 to 9) _____

Subtotal Points Awarded (District plus Mean for Pilot Schools) =

Comments:

6. **Inclusion of D/F Schools**

   (Total Possible Points = 25)

Subtotal Points Awarded =

Total Application Points Awarded:

<u>Criterion Area</u>

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

TOTAL POINTS AWARDED (0 to 175) =

SIZE OF DISTRICT (Small, Medium, Large) ________

GEOGRAPHIC REGION ________

Appendix B

Florida PS/RtI Project Demonstration Site Implementation Plan

Project Administration					
Components	**Year 1** **(7/1/06 – 9/30/07)**	**Year 2** **(8/1/07-7/31/08)** **Pilot Year 1**	**Year 3** **(7/1/08-6/30/09)** **Pilot Year 2**	**Year 4** **(7/1/09-6/30/10)** **Pilot Year 3**	**Year 5** **7/1/10-6/30/11**
1. Infrastructure	• Hired personnel - Project Leaders 7/06 - Graduate Assistants 8/06 - Program Evaluator 8/06 - Technical Support 8/06 - 3 Regional Coordinators 1/07 - Program Assistant 3/07 • Coaches hired/identified by districts 6/07 • DOE Leadership team identified 6/07 • Personnel Evaluations 6/07	• As Needed • Personnel Evaluations 6/08	• As Needed • Personnel Evaluations 6/09	• As Needed • Personnel Evaluations 6/10	• As Needed • Personnel Evaluations 6/11

Project Administration					
Components	Year 1 (7/1/06 – 9/30/07)	Year 2 (8/1/07-7/31/08) Pilot Year 1	Year 3 (7/1/08-6/30/09) Pilot Year 2	Year 4 (7/1/09-6/30/10) Pilot Year 3	Year 5 7/1/10-6/30/11
2. District Finance & Administration	• Minigrants - Establish application process 1/07 - Conduct Bidder's Conferences 2-3/07 - Review District/school applications and select districts 4/07				
	• Establish contracts 5-7/07	• Establish contracts 5-7/08	• Establish contracts 5-7/09		
	• Establish billing schedule and criteria for district payments 6/07	•	•		
		• Reapplication process - Develop Application Protocol 3/08 - Notify districts 3/08	• Reapplication process - NA - Notify districts 3/09		

Project Administration					
Components	**Year 1** **(7/1/06 – 9/30/07)**	**Year 2** **(8/1/07-7/31/08)** **Pilot Year 1**	**Year 3** **(7/1/08-6/30/09)** **Pilot Year 2**	**Year 4** **(7/1/09-6/30/10)** **Pilot Year 3**	**Year 5** **7/1/10-6/30/11**
		- Review reapplications 4/08 - Finalize renewal of district/school grants 5/08	- Review reapplications 4/09 - Finalize renewal of district/school grants 5/09		
3. DOE Submissions & Reports	• Quarterly reports 3/31, 6/30, 9/30, 12/31 • Renewal of DOE grant 6/06	• Quarterly reports 3/31, 6/30, 9/30, 12/31 • Renewal of DOE grant 6/07	• Quarterly reports 3/31, 6/30, 9/30, 12/31 • Renewal of DOE grant 6/08	• Quarterly reports 3/31, 6/30, 9/30, 12/31 • Renewal of DOE grant 6/09	• Quarterly reports 3/31, 6/30, 9/30, 12/31 • Renewal of DOE grant 6/10

Training and Technical Assistance					
Components	**Year 1** **(7/1/06 – 6/30/07)**	**Year 2** **(7/1/07-6/30/08)** **Pilot Year 1**	**Year 3** **(7/1/08-6/30/09)** **Pilot Year 2**	**Year 4** **(7/1/09-6/30/10)** **Pilot Year 3**	**Year 5** **7/1/10-6/30/11**
1. Training	• Gather/review modules from other states 3/07 • Conduct Regional Coordinators Coaching Training 6/07 • Develop coaches' training modules – Year 1, 6/07 • Organize summer training for coaches 6/07 • Develop Needs Assessment (school sites) 6/07	• Deliver 5-day coaches training 7/9-13/07 • Conduct Needs Assessment (school sites) 8/07 • District- and school-based personnel trainings – Session 1	• Deliver 5-day coaches training 7/08 • Conduct Needs Assessment (school sites) 8/08 • District- and school-based personnel trainings – Session 1	• Deliver 5-day coaches training 07/09 • Conduct Needs Assessment (school sites) 8/09 • District- and school-based personnel trainings – Session 1	

Training and Technical Assistance					
Components	Year 1 (7/1/06 – 6/30/07)	Year 2 (7/1/07-6/30/08) Pilot Year 1	Year 3 (7/1/08-6/30/09) Pilot Year 2	Year 4 (7/1/09-6/30/10) Pilot Year 3	Year 5 7/1/10-6/30/11
		- Develop school- and district-based personnel training modules for first 3 days – Year 1 08/07 - Schedule and arrange training sessions for each district – Session 1 07/07 - Deliver Session 1 training (3 days) – 09/07 • District- and school-based trainings – Session 2 - Develop school- and district-based personnel training modules for day 4 (session 2) – Year 1 12/07	- Develop school- and district-based personnel training modules for first 3 days – Year 2 08/08 - Schedule and arrange training sessions for each district – Session 1 07/08 - Deliver session 1 training (3 days) – 09/08 • District- and school-based trainings – Session 2 - Develop school- and district-based personnel training modules for day 4 (session 2) – Year 2 12/08	- Develop school- and district-based personnel training modules for first 3 days – Year 3 08/09 - Schedule and arrange training sessions for each district – Session 1 07/09 - Deliver session 1 training (3 days) – 09/09 • District- and school-based trainings – Session 2 - Develop school- and district-based personnel training modules for day 4 (session 2) – Year 3 12/09	

Training and Technical Assistance					
Components	Year 1 (7/1/06 – 6/30/07)	Year 2 (7/1/07-6/30/08) Pilot Year 1	Year 3 (7/1/08-6/30/09) Pilot Year 2	Year 4 (7/1/09-6/30/10) Pilot Year 3	Year 5 7/1/10-6/30/11
		- Schedule and arrange training sessions for each district – Session 2 11/07 - Deliver Session 2 training (1 day) – 1/08 • District- and school-based training – Session 3 - Develop school- and district-based personnel trainings for day 5 (Session 3) – Year 1 3/08 - Schedule and arrange training sessions for each district – Session 3 1/08 - Deliver Session 3 training (1 day) 3/08 • Organizing summer training for coaches 6/08	- Schedule and arrange training sessions for each district – Session 2 11/08 - Deliver Session 2 training (1 day) – 1/09 • District- and school-based training – Session 3 - Develop school- and district-based personnel trainings for day 5 (Session 3) – Year 1 3/09 - Schedule and arrange training sessions for each district – Session 3 1/09 - Deliver Session 3 training (1 day) 3/09 • Organizing summer training for coaches 6/09	- Schedule and arrange training sessions for each district – Session 2 11/09 - Deliver Session 2 training (1 day) – 1/10 • District- and school-based training – Session 3 - Develop school- and district-based personnel trainings for day 5 (Session 3) – Year 1 3/10 - Schedule and arrange training sessions for each district – Session 3 1/10 - Deliver Session 3 training (1 day) 3/10	

Training and Technical Assistance					
Components	Year 1 (7/1/06 – 6/30/07)	Year 2 (7/1/07-6/30/08) Pilot Year 1	Year 3 (7/1/08-6/30/09) Pilot Year 2	Year 4 (7/1/09-6/30/10) Pilot Year 3	Year 5 7/1/10-6/30/11
		• Develop coaches' training modules – Year 2, 6/08 • Supplemental trainings for new personnel – As Needed	• Develop coaches' training modules – Year 3, 6/09 • Supplemental trainings for new personnel – As Needed	• Supplemental trainings for new personnel – As Needed	
2. Technical Assistance	N/A	• Monthly regional TA meetings with coaches facilitated by Regional Coordinators - Schedule and arrange TA sessions with coaches – by the 15th of preceding month - Determine TA focus/content for sessions - Deliver TA session	• Monthly regional TA meetings with coaches facilitated by Regional Coordinators - Schedule and arrange TA sessions with coaches – by the 15th of preceding month - Determine TA focus/content for sessions - Deliver TA session	• Monthly regional TA meetings with coaches facilitated by Regional Coordinators - Schedule and arrange TA sessions with coaches – by the 15th of preceding month - Determine TA focus/content for sessions - Deliver TA session	

Training and Technical Assistance					
Components	**Year 1** **(7/1/06 – 6/30/07)**	**Year 2** **(7/1/07-6/30/08)** **Pilot Year 1**	**Year 3** **(7/1/08-6/30/09)** **Pilot Year 2**	**Year 4** **(7/1/09-6/30/10)** **Pilot Year 3**	**Year 5** **7/1/10-6/30/11**
		• Quarterly district TA meetings with district leadership and coaches facilitated by Regional Coordinators - Schedule and arrange TA sessions with district team members and coaches – Schedule first meeting at AO meetings 06/07, schedule next 3 at 09/07 meeting, attempt to schedule first meeting for Year 3 at fourth quarter meeting - Determine TA focus/content for sessions - Deliver TA session	• Quarterly district TA meetings with district leadership and coaches facilitated by Regional Coordinators - Schedule and arrange TA sessions with district team members and coaches – Schedule last 3 quarterly meetings at first quarter meeting, attempt to schedule first meeting for Year 4 at fourth quarter meeting - Determine TA focus/content for sessions - Deliver TA session	• Quarterly TA meetings with district leadership and coaches facilitated by Regional Coordinators - Schedule and arrange TA sessions with district team members and coaches – Schedule last 3 quarterly meetings at first quarter meeting - Determine TA focus/content for sessions - Deliver TA session	

Training and Technical Assistance					
Components	Year 1 (7/1/06 – 6/30/07)	Year 2 (7/1/07-6/30/08) Pilot Year 1	Year 3 (7/1/08-6/30/09) Pilot Year 2	Year 4 (7/1/09-6/30/10) Pilot Year 3	Year 5 7/1/10-6/30/11
		• Weekly TA meetings with school-based leadership facilitated by coaches (Regional Coordinator attendance optional) - Schedule and arrange TA sessions with school-based teams - Determine TA focus/content for sessions - Deliver TA session • Quarterly statewide coaches meetings	• Weekly TA meetings with school-based leadership facilitated by coaches (Regional Coordinator attendance optional) - Schedule and arrange TA sessions with school-based teams - Determine TA focus/content for sessions - Deliver TA session • Quarterly statewide coaches meetings	• Weekly TA meetings with school-based leadership facilitated by coaches (Regional Coordinator attendance optional) - Schedule and arrange TA sessions with school-based teams - Determine TA focus/content for sessions - Deliver TA session • Quarterly statewide coaches meetings	

Training and Technical Assistance					
Components	Year 1 (7/1/06 – 6/30/07)	Year 2 (7/1/07-6/30/08) Pilot Year 1	Year 3 (7/1/08-6/30/09) Pilot Year 2	Year 4 (7/1/09-6/30/10) Pilot Year 3	Year 5 7/1/10-6/30/11
		- Schedule and arrange TA sessions with coaches – Immediately following scheduling of quarterly district leadership meetings schedule quarterly meetings for coaches for remainder of year - Provide technology training and determine other TA focus/content for sessions - Deliver TA session	- Schedule and arrange TA sessions with coaches – Immediately following scheduling of quarterly district leadership meetings schedule quarterly meetings for coaches for remainder of year - Provide technology training and determine other TA focus/content for sessions - Deliver TA session	- Schedule and arrange TA sessions with coaches – Immediately following scheduling of quarterly district leadership meetings schedule quarterly meetings for coaches for remainder of year - Provide technology training and determine other TA focus/content for sessions - Deliver TA session	

Training and Technical Assistance					
Components	**Year 1** **(7/1/06 – 6/30/07)**	**Year 2** **(7/1/07-6/30/08)** **Pilot Year 1**	**Year 3** **(7/1/08-6/30/09)** **Pilot Year 2**	**Year 4** **(7/1/09-6/30/10)** **Pilot Year 3**	**Year 5** **7/1/10-6/30/11**
	• Check with district leadership teams at AO meetings regarding possibility of having a statewide meeting of district leadership teams • Ask school administrators about helpfulness of district and/or regional school administrator meetings	• Statewide district leadership meetings? • Regional school administrator meetings?	• Statewide district leadership meetings? • Regional school administrator meetings?	• Statewide district leadership meetings? • Regional school administrator meetings?	

Communications					
Components	**Year 1 (7/1/06 – 6/30/07)**	**Year 2 (7/1/07-6/30/08) Pilot Year 1**	**Year 3 (7/1/08-6/30/09) Pilot Year 2**	**Year 4 (7/1/09-6/30/10) Pilot Year 3**	**Year 5 7/1/10-6/30/11**
1. Quarterly Newsletter	• Developed plan for distribution – 5/07 • Write and distribute first newsletter – 6/15/07	• Contact Project staff for newsletter content and commitments to write sections (Judi)– 08/01/07, 11/01/07, 02/01/08, 05/01/08 • Project staff writes and sends sections to Judi for preparation – 09/01/07, 12/01/07, 03/15/08, 06/01/08	• Contact Project staff for newsletter content and commitments to write sections (Judi)– 08/01/08, 11/01/08, 02/01/09, 05/01/09 • Project staff writes and sends sections to Judi for preparation – 09/01/08, 12/01/08, 03/15/09, 06/01/09	• Contact Project staff for newsletter content and commitments to write sections (Judi)– 08/01/09, 11/01/09, 02/01/10, 05/01/10 • Project staff writes and sends sections to Judi for preparation – 09/01/09, 12/01/09, 03/15/10, 06/01/10	• Contact Project staff for newsletter content and commitments to write sections (Judi)– 08/01/10, 11/01/10, 02/01/11, 05/01/11 • Project staff writes and sends sections to Judi for preparation – 09/01/10, 12/01/10, 03/15/11, 06/01/11

Communications					
Components	**Year 1 (7/1/06 – 6/30/07)**	**Year 2 (7/1/07-6/30/08) Pilot Year 1**	**Year 3 (7/1/08-6/30/09) Pilot Year 2**	**Year 4 (7/1/09-6/30/10) Pilot Year 3**	**Year 5 7/1/10-6/30/11**
		• Dissemination of newsletter to stakeholder groups (see Communication Matrix; Judi) – 09/15/07, 12/15/07, 03/15/08, 06/15/08	• Dissemination of newsletter to stakeholder groups (see Communication Matrix; Judi) – 09/15/08, 12/15/08, 03/15/09, 06/15/09	• Dissemination of newsletter to stakeholder groups (see Communication Matrix; Judi) – 09/15/09, 12/15/09, 03/15/10, 06/15/10	• Dissemination of newsletter to stakeholder groups (see Communicatio n Matrix; Judi) – 09/15/10, 12/15/10, 03/15/11, 06/15/11
2. Weekly Email Updates	• Developed plan for distribution 5/07	• Contact Project staff for email update content (Judi) – Monday of each week • Suggestions for content to Judi – Wednesday of each week	• Contact Project staff for email update content (Judi) – Monday of each week • Suggestions for content to Judi – Wednesday of each week	• Contact Project staff for email update content (Judi) – Monday of each week • Suggestions for content to Judi – Wednesday of each week	• Contact Project staff for email update content (Judi) – Monday of each week • Suggestions for content to Judi – Wednesday of each week

Communications					
Components	**Year 1** **(7/1/06 – 6/30/07)**	**Year 2** **(7/1/07-6/30/08)** **Pilot Year 1**	**Year 3** **(7/1/08-6/30/09)** **Pilot Year 2**	**Year 4** **(7/1/09-6/30/10)** **Pilot Year 3**	**Year 5** **7/1/10-6/30/11**
		• Email update written and distributed to stakeholders (see Communications Matrix; Judi) – Thursdays of each week)	• Email update written and distributed to stakeholders (see Communications Matrix; Judi) – Thursdays of each week)	• Email update written and distributed to stakeholders (see Communications Matrix; Judi) – Thursdays of each week)	• Email update written and distributed to stakeholders (see Communications Matrix; Judi) – Thursdays of each week)
3. Website	• Initial website created and operational – 03/07 • Content updated periodically • Redesign of website started • Create plan for review and update of website – 5/07	• Review and revise website content by 15th of each month (Judi)	• Review and revise website content by 15th of each month (Judi)	• Review and revise website content by 15th of each month (Judi)	• Review and revise website content by 15th of each month (Judi)

Communications					
Components	**Year 1** **(7/1/06 – 6/30/07)**	**Year 2** **(7/1/07-6/30/08)** **Pilot Year 1**	**Year 3** **(7/1/08-6/30/09)** **Pilot Year 2**	**Year 4** **(7/1/09-6/30/10)** **Pilot Year 3**	**Year 5** **7/1/10-6/30/11**
4. List Serves	• Plan developed for creation of list serves – 5/07	• Create list serves (see Communications Matrix; Judi) – 07/08	• Update list serves (see Communications Matrix; Judi) – 07/09	• Update list serves (see Communications Matrix; Judi) – 07/10	• Update list serves (see Communications Matrix; Judi) – 07/11
5. Boilerplate Articles	• Make contacts with state associations by 6/15/07 (see Communications Matrix; Judi) • Send article providing overview of Project and demonstration districts to state associations by 6/30/07 (see Communications Matrix; Mike)	• Determine focus of annual article and identify author – 5/01/08 • Write and send articles to Judi – 6/1/08 • Disseminate articles to stakeholders – 6/15/08	• Determine focus of annual article and identify author – 5/01/09 • Write and send articles to Judi – 6/1/09 • Disseminate articles to stakeholders – 6/15/09	• Determine focus of annual article and identify author – 5/01/10 • Write and send articles to Judi – 6/1/10 • Disseminate articles to stakeholders – 6/15/10	• Determine focus of annual article and identify author – 5/01D/11 • Write and send articles to Judi – 6/1/11 • Disseminate articles to stakeholders – 6/15/11

Communications					
Components	Year 1 (7/1/06 – 6/30/07)	Year 2 (7/1/07-6/30/08) Pilot Year 1	Year 3 (7/1/08-6/30/09) Pilot Year 2	Year 4 (7/1/09-6/30/10) Pilot Year 3	Year 5 7/1/10-6/30/11
6. Statewide PS/RtI Conference		• Create Conference Planning Team 10/07	• Develop plan for statewide conference – 11/08	• Develop plan for statewide conference – 11/09	• Develop plan for statewide conference – 11/10
7.		• Develop plan for statewide conference – 11/07 • Schedule and organize statewide conference • Hold conference – 6/08?	• • Schedule and organize statewide conference • Hold conference – 6/09?	• • Schedule and organize statewide conference • Hold conference – 6/10?	• • Schedule and organize statewide conference • Hold conference – 6/11?
8. Other Conferences		• Team participation in Innovations Conference – 09/07	• Team participation in Innovations Conference – 09/08	• Team participation in Innovations Conference – 09/09	• Team participation in Innovations Conference – 09/10
		•	• Develop comprehensive conference presentation paln with DOE staff 7/07	•	•

Communications					
Components	Year 1 (7/1/06 – 6/30/07)	Year 2 (7/1/07-6/30/08) Pilot Year 1	Year 3 (7/1/08-6/30/09) Pilot Year 2	Year 4 (7/1/09-6/30/10) Pilot Year 3	Year 5 7/1/10-6/30/11
		• Present at AMM – 09/07 • Discussion of priorities for presentation of Project information – 11/07	• Present at AMM – 09/08 • Discussion of priorities for presentation of Project information – 11/08	• Present at AMM – 09/09 • Discussion of priorities for presentation of Project information – 11/09	• Present at AMM – 09/10 • Discussion of priorities for presentation of Project information – 11/10
8. Collaboration with other State Projects	• On-going meetings held with FCRR, PBS, and VPK	• Continue on-going meetings with FCRR, PBS, and VPK • Have Project Leadership Team meeting to discuss collaboration with other State Projects – 09/07	• Continue on-going meetings with FCRR, PBS, and VPK	• Continue on-going meetings with FCRR, PBS, and VPK	• Continue on-going meetings with FCRR, PBS, and VPK

Evaluation					
Components	**Year 1** **(7/1/06 – 6/30/07)**	**Year 2** **(7/1/07-6/30/08)** **Pilot Year 1**	**Year 3** **(7/1/08-6/30/09)** **Pilot Year 2**	**Year 4** **(7/1/09-6/30/10)** **Pilot Year 3**	**Year 5** **7/1/10-6/30/11**
1. Planning	• Drafted evaluation plan – 12/06	• Review and update evaluation plan – 6/08	• Review and update evaluation plan – 6/09	• Review and update evaluation plan – 6/10	
2. Instrumentation	• Gathered instruments from other states' evaluation models – 4/07 • Developed drafts of measures (see Evaluation Tool List) – 5/07 • Complete Expert Validation Panel process for Project participant surveys (see Evaluation Tool List) – 6/07 • Complete Validation Panel Process for parent survey & RtI Needs Assessment – 06/07	• Finalize drafts of evaluation measures (see Evaluation Tool List) – 7/07	• Revise and/or develop new evaluation measures – 7/08	• Revise and/or develop new evaluation measures – 7/09	

Evaluation					
Components	Year 1 (7/1/06 – 6/30/07)	Year 2 (7/1/07-6/30/08) Pilot Year 1	Year 3 (7/1/08-6/30/09) Pilot Year 2	Year 4 (7/1/09-6/30/10) Pilot Year 3	Year 5 7/1/10-6/30/11
	• Complete web-based databases – 6/07 - School level data - Training survey data - Training/TA logs - Student level outcome data - Intervention integrity?	• Pilot test instruments developed and revised as needed – 7/07 • Update web-based data-bases (As Needed	• Update web-based data-bases (As Needed	• Update web-based data-bases (As Needed	• Update web-based data-bases (As Needed
3. Data Collection & Analysis	• Developed timeline for data collection – 5/07 • Discuss baseline data elements to be gathered from pilot districts, pilot schools & comparison schools – 6/07	• Collect baseline data from pilot & comparison schools			

Evaluation					
Components	Year 1 (7/1/06 – 6/30/07)	Year 2 (7/1/07-6/30/08) Pilot Year 1	Year 3 (7/1/08-6/30/09) Pilot Year 2	Year 4 (7/1/09-6/30/10) Pilot Year 3	Year 5 7/1/10-6/30/11
	• Develop plan for conducting data analyses – 6/07	• Collect data from coaches training • Collect data from pilot and comparison schools (see Data Collection Rubric) • Conduct and interpret analyses (See Data Analysis Plan)	• Collect data from coaches training • Collect data from pilot and comparison schools (see Data Collection Rubric) • Conduct and interpret analyses (See Data Analysis Plan)	• Collect data from coaches training • Collect data from pilot and comparison schools (see Data Collection Rubric) • Conduct and interpret analyses (See Data Analysis Plan)	• Conduct and interpret analyses (See Data Analysis Plan)
4. Reporting	• Identify stakeholders who will receive reports • Develop plan for reporting data to stakeholders – 6/07	• Provide reports to stakeholders (see Data Reporting Plan) - Project Leadership Team (by 3/31, 6/30, 9/30, 12/31)	• Provide reports to stakeholders (see Data Reporting Plan) - Project Leadership Team (by 3/31, 6/30, 9/30, 12/31)	• Provide reports to stakeholders (see Data Reporting Plan) - Project Leadership Team (by 3/31, 6/30, 9/30, 12/31)	• Provide reports to stakeholders (see Data Reporting Plan) - Project Leadership Team (by 3/31, 6/30, 9/30, 12/31)

Evaluation					
Components	**Year 1 (7/1/06 – 6/30/07)**	**Year 2 (7/1/07-6/30/08) Pilot Year 1**	**Year 3 (7/1/08-6/30/09) Pilot Year 2**	**Year 4 (7/1/09-6/30/10) Pilot Year 3**	**Year 5 7/1/10-6/30/11**
		- DOE Project Liaison (Quarterly report data; 3/15, 6/15, 9/15, 12/15) - Regional Coordinators (by end of each month) - Statewide conference participants - Annual report (6/30)	- DOE Project Liaison (Quarterly report data; 3/15, 6/15, 9/15, 12/15) - Regional Coordinators (by end of each month) - Statewide conference participants - Annual report (6/30)	- DOE Project Liaison (Quarterly report data; 3/15, 6/15, 9/15, 12/15) - Regional Coordinators (by end of each month) - Statewide conference participants - Annual report (6/30)	- DOE Project Liaison (Quarterly report data; 3/15, 6/15, 9/15, 12/15) - Statewide conference participants - Final report (7/30)

Appendix C

Florida PS/RtI Project Demonstration Site Evaluation Model

Component	Evaluation Questions	Data Source	Method	Collection Timeline	Personnel Responsible
Input – Pilot Districts and Schools	1. What were the demographic profiles of students attending the pilot (1) districts and (2) schools? Categories to be examined by grade-level include: a. Race/ethnicity (i.e., Caucasian, Black, Hispanic, Asian/Pacific Islander, Native American/Alaskan Native, & Multiracial)? b. Gender? c. Free-reduced lunch status? d. Disability status? e. English language learner status? 2. To what degree did pilot (1) districts and (2) schools reach consensus regarding participation in the PS/RtI Project? 3. What was the demographic profile of staff at the project and comparison schools and to what	1. School records 2. District and school personnel	1. Records review; district application 2. District application; Modified RtI Needs Assessment 3. Records	1. See Data Collection Rubric 2. See Data Collection Rubric 3. See Data	1. District data contact 2. Coaches collect data and provide to a GA to upload 3. District

	extent did turnover occur? 4. To what degree was the infrastructure necessary to support implementation of the PS/RtI (e.g., personnel, technology, financial resources, professional development structures, academic and behavioral programs, policies/procedures) present in pilot: a. Districts? b. Schools?	3. Coaches and GAs 4. District leadership teams, school-based teams, and coaches	review from district and school records 4. District application; Modified RtI Needs Assessment; Interviews	Collection Rubric 4. See Data Collection Rubric	data contact 4. Coaches collect data and provide to a GA to upload
Input – Coaches	5. To what degree did coaches in the pilot districts meet the requisite qualifications? 6. To what extent did coaches demonstrate coaching and PS/RtI	5. Coaches and district personnel 6. Coaches	5. Coaches' vita; district application 6. Coaching Analogue Assessment;	5. See Data Collection Rubric 6. Coaches Training	5. TBD 6. Regional coordinators

	skills?		Direct Skill Assessments		collect data; scoring and entry TBD
Process – PS/RtI Training	7. To what extent was training provided to each of the following key stakeholders: a. District leadership teams? b. School-based teams? c. Coaches? 8. To what extent were the following key stakeholders satisfied with the quality of the training: a. District leadership teams? b. School-based teams? c. Coaches? 9. To what extent were the following key stakeholders satisfied with the training content/materials: a. District leadership teams? b. School-based teams? c. Coaches?	7. Regional coordinators and coaches 8. District leadership teams, school-based teams, and coaches 9. District leadership teams, school-based teams, and coaches	7. Regional Coordinator Training Log; Coaches Training Log; Attendance Log 8. Training Evaluation Survey 9. Training Evaluation Survey	7. See Data Collection Rubric 8. See Data Collection Rubric 9. See Data Collection Rubric	7. Regional coordinators & coaches track and upload data via web-based screen 8. Regional coordinators & coaches collect data and provide to a GA to upload 9. Regional coordinators & coaches collect data and provide to a GA to upload

Process - Technical Assistance & Communication	10. To what extent was technical assistance provided to: a. District leadership teams? b. School-based teams? c. Coaches? 11. To what extent were the following key stakeholders satisfied with the technical assistance and communication provided by the project: a. District leadership teams? b. School-based teams? c. Coaches?	10. Regional coordinators and coaches 11. District leadership teams, school-based teams, and coaches	10. Regional Coordinator Technical Assistance Log; Coaches Technical Assistance Log 11. Technical Assistance Evaluation Survey; Coaches Evaluation Survey	10. See Data Collection Rubric 11. See Data Collection Rubric	10. Regional coordinators & coaches track and upload data via web-based screen 11. Regional coordinators & coaches collect data and provide to a GA to upload
Output – Consensus	12. What was the impact of the Project on the level of consensus for: a. District leadership teams? b. School-based teams? c. Other school personnel? 13. What was the impact of the project on the following key stakeholders' beliefs about PS/RtI: d. District leadership teams?	12. District leadership teams, school-based teams, and school personnel 13. District leadership teams, school-based teams, and	12. Modified RtI Needs Assessment 13. Beliefs Survey	12. See Data Collection Rubric 13. See Data Collection Rubric	12. Coaches collect data and provide to GAs to upload 13. Regional coordinators & coaches collect data

	e. School-based teams? f. Other school personnel? 14. To what extent were the following key stakeholders satisfied with service delivery in the PS/RtI model? a. District leadership teams? b. School-based teams? c. Other school personnel? d. Parents? 15. To what extent were the following key stakeholders satisfied with student and systemic outcomes in the PS/RtI model? a. District leadership teams? b. School-based teams? c. Other school personnel? d. Parents?	school personnel 14. District leadership teams, school-based teams, and school personnel 15. District leadership teams, school-based teams, and school personnel	14. School Personnel Satisfaction Survey; Parent Satisfaction Survey 15. School Personnel Satisfaction Survey; Parent Satisfaction Survey	14. See Data Collection Rubric 15. See Data Collection Rubric	and provide to a GA to upload 14. Regional coordinators & coaches collect data and provide to a GA to upload 15. Regional coordinators & coaches collect data and provide to a GA to upload
Output – Infrastructure	16. What was the impact of the project on creating the infrastructure to support implementation of PS/RtI at the: a. District-level?	16.District leadership teams, school-based teams, and coaches	16. Modified RtI Needs Assessment; Interviews	16. See Data Collection Rubric	16. Coaches collect data and provide to a GA to upload

	b. School-level?				
Output – Implementation	17. What was the impact of the project on the PS/RtI skills of the following key stakeholders: a. Coaches? b. District leadership teams? c. School-based teams? d. Other school personnel? 18. What was the impact of the project on pilot school implementation of PS/RtI practices (e.g., core curriculum fidelity, intervention practices and fidelity, problem-solving team procedures, assessment practices)?	17. Coaches, district leadership teams, school-based teams, and other school personnel 18. Coaches, school-based teams, and other school personnel	17. Perceptions of Skills Survey; Direct Skill Assessments; Neutral Interviews; Taped observation 18. Perceptions of Practices Survey; Modified RtI Needs Assessment; Critical Components Checklists; Problem-Solving Team Checklists; Intervention Integrity Log; Anecdotal records	17. See Data Collection Rubric 18. See Data Collection Rubric	17. Regional coordinators & coaches collect data and provide to a GA to upload 18. Regional coordinators & coaches collect data and provide to a GA to upload
Output- Student Outcomes	19. What was the impact of implementing PS/RtI on (1) reading and (2) math achievement:	19. School records	19. FCAT; SAT-10; CBM; DIBELS; District	19. See Data Collection Rubric	19. District data contact will provide to Project

	a. For all students? b. By race/ethnicity (i.e., Caucasian, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaskan Native, & Multiracial)? c. By gender? d. By free-reduced lunch status? e. By disability status? f. By English language learner status?		assessments		staff
	20. What was the impact of implementing PS/RtI on behavioral outcomes: a. For all students? b. By race/ethnicity (i.e., Caucasian, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaskan Native, & Multiracial)? c. By gender? d. By free-reduced lunch status?	20. School records	20. Permanent products from interventions	20. See Data Collection Rubric	20. TBD

	e. By disability status? f. By English language learner status?				
Output – Systemic Outcomes	21. What was the impact of implementing PS/RtI on office discipline referrals: a. For all students? b. By race/ethnicity (i.e., Caucasian, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaskan Native, & Multiracial)? c. By gender? d. By free-reduced lunch status? e. By disability status? f. By English language learner status? 22. What was the impact of implementing PS/RtI on the special education referrals, evaluations, and placements: a. For all students? b. By race/ethnicity (i.e., Caucasian, Black, Hispanic,	21. School records 22. School records	21. Records review of ODRs 22. Records review	21. See Data Collection Rubric 22. See Data Collection Rubric	21. District contact or coach will collect and provide to Project staff 22. District contact or coach will collect and provide to Project staff

	Asian/Pacific Islander, American Indian/Alaskan Native, & Multiracial)? c. By gender? d. By free-reduced lunch status? e. By disability status? f. By English language learner status? 23. What was the impact of implementing PS/RtI on student attendance: a. For all students? b. By race/ethnicity (i.e., Caucasian, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaskan Native, & Multiracial)? c. By gender? d. By free-reduced lunch status? e. By disability status? f. By English language learner status?	23. School records	23. Records review 24. Records	23. See Data Collection Rubric 24. See Data Collection Rubric	23. District contact or coach will collect and provide to Project staff 24. District contact or coach will collect and provide to Project staff

	24. What was the impact of implementing PS/RtI on retention rates: a. For all students? b. By race/ethnicity (i.e., Caucasian, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaskan Native, & Multiracial)? c. By gender? d. By free-reduced lunch status? e. By disability status? f. By English language learner status? 25. What the impact of implementing PS/RtI on costs for: a. Training? b. Materials? c. Personnel? d. Technology? e. Other?	24. School records 25. District, school, and project records	review 25. Records review	25. See Data Collection Rubric	25. TBD
Contextual Factors	26. How does school climate/culture impact implementation of PS/RtI?	26. School personnel, coaches, and	26. Beliefs Survey; Interviews;	26. See Data Collection	26. Coaches and Regional Coordinators

		school records	RtI Needs Assessment; Critical Components Checklists; Problem-Solving Team Checklists	Rubric	
	27. How does leadership impact implementation of PS/RtI?	27. District and school administrators, and school records	27. Beliefs Survey; Interviews; RtI Needs Assessment; Critical Components Checklists; Problem-Solving Team Checklists	27. See Data Collection Rubric	27. Coaches and Regional Coordinators
External Factors	28. How does legislation (e.g., NCLB, IDEIA) impact implementation of PS/RtI?	28. District and school personnel, school records, legislation	28. NCLB and IDEIA; RtI Needs Assessment; Critical Components Checklists; Problem-Solving Team Checklists	28. See Data Collection Rubric	28. Coaches and Regional Coordinators; Other?

	29. How do state and district policies impact implementation of PS/RtI?	29. District and school personnel, state and district policy records	29. State and district regulations; RtI Needs Assessment; Critical Components Checklists; Problem-Solving Team Checklists; Questioinairre	29. See Data Collection Rubric	29. Coaches and Regional Coordinators; Other?

Goals & Objectives	30. How do the goals and objectives of schools (i.e., content area and grade levels targeted) impact implementation of PS/RtI?	30. District and school personnel, and school records	30. Grant applications; Interviews; RtI Needs Assessment; Critical Components Checklist; Coaches Observation Checklist	30. See Data Collection Rubric	30. Coaches and Regional Coordinators; Others?
	31. How do the goals and objectives of schools (i.e., content area and grade levels targeted) impact student and systemic outcomes?	31. District and school personnel, and school records	31. FCAT; SAT-10; CBM; DIBELS; District assessments; ODRs; Grant application; Interviews; RtI Needs Assess.	31. See Data Collection Rubric	31. Coaches and Regional Coordinators; Others?

Appendix D

Florida PS/RtI Project Educator Expert Validation Panel Forms

Problem-Solving/Response-to-Intervention Beliefs Survey Content Validation – Item Content and Clarification Rating Form

Directions:

The Problem-Solving/Response-to-Intervention Beliefs Survey is intended to capture the degree to which school and district personnel possess the beliefs necessary for successful implementation of the Problem-Solving/Response-to-Intervention (PS/RtI) model. The items on the survey are designed to assess the beliefs of school and district personnel in one or more of the following domains; overall educational philosophy, assessment practices, core instruction, intervention, and special education eligibility determination. Florida PS/RtI Project staff will use the data derived from the survey to inform the services provided to schools.

A good survey is concise, contains clearly and accurately written items that relate to the purpose of the survey, and avoids duplicate items. To evaluate the degree to which the attached survey meets these criteria, please rate each item on the basis of appropriateness of content, necessity, and clarity. Read each question carefully and rate it by circling one or more of the following descriptors:

G = Good (Item is clearly and accurately written);

R = Redundant (There are items with similar content and meaning);

N = Nonessential (The content is non-related to any of the five PS/RtI belief domains);

PW = Poorly Written (Item has semantic or grammatical errors);

A = **Ambiguous** (Item has abstract or vague content, or double-barreled items that ask two questions in one statement).

If you have found an item to be problematic (i.e., you circled it with **R, N, PW,** or **A**), please provide suggestions by rewriting the item in the space below, or write: **“Delete item”** if you believe the item does not address beliefs related to PS/RtI.

This survey will be completed by school and district personnel participating in PS/RtI training across the state of Florida. Respondents will be asked to rate the degree to which they agree with each PS/RtI belief on a 5-point continuum of strongly disagree to strongly agree. For your information, school and district personnel will use the following ratings:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

Problem-Solving/Response-to-Intervention Beliefs Survey

G=Good R=Redundant N=Nonessential PW=Poorly Written A=Ambiguous

Essential PS/RtI Beliefs **Content and Clarity Ratings**

1. I believe in the philosophy of No Child Left Behind (NCLB) even if I disagree with some of the requirements.	G R N PW A

Rewrite: ____________________

2. Core instruction should be effective enough to result in 80% of the students achieving benchmarks in reading and math.	G R N PW A

Rewrite: ____________________

3. The primary function of supplemental instruction is to ensure that students meet grade-level benchmarks in reading and math.	G R N PW A

Rewrite: ____________________

4. The majority of student with learning disabilities achieve grade-level benchmarks in reading and math.	G R N PW A

Rewrite: ____________________

5. The majority of students with behavioral problems (EH/SED) achieve grade-level benchmarks in reading and math. G R N PW A

Rewrite: ____

6. Students with disabilities who are receiving special education services are capable of achieving grade-level benchmarks in reading and math. G R N PW A

Rewrite: ____

7. General education teachers should implement more differentiated and flexible curricula to address the needs of a more diverse student body. G R N PW A

Rewrite: ____

8. General education classroom teachers would be able to implement more differentiated and flexible interventions if they had additional staff support. G R N PW A

Rewrite: ____

9. The availability of additional interventions in the general education classroom would result in success for more students. G R N PW A

Rewrite: ____

10. Prevention activities and early intervention strategies in schools would result in fewer referrals to problem-solving teams and placements in special education. G R N PW A

Rewrite: ____

11. The "severity" of a student's problem is determined not by how far behind (or inappropriate) a student is but by how quickly a student responds to intervention. G R N PW A

Rewrite: ____

12. The results of IQ and achievement testing can be used to identify effective interventions for students with learning and behavior problems. G R N PW A

Rewrite: ____

13. Many students currently identified as "LD" do not have a disability, but came to school "not ready" or got too far behind for the available interventions to close the gap sufficiently. G R N PW A

Rewrite: ____

14. Using student-based data to determine intervention effectiveness is more accurate than using "teacher judgment." G R N PW A

Rewrite: ____

15. Evaluating a student's response to interventions is a more effective way of determining what a student is capable of than using scores from "tests" (e.g., IQ/Achievement). G R N PW A

Rewrite: ____

16. Time and resources should be given first to students who are not reaching benchmarks before significant time and resources are directed to students who are at or above benchmark. G R N PW A

Rewrite: ____

17. It is easier for me to make decisions about student performance and needed interventions when the student data are graphed. G R N PW A

Rewrite: ____

18. Parents should be involved in the problem-solving process as soon as a teacher has a concern about a particular student. G R N PW A

Rewrite: ____

19. Students respond better to interventions when the parent is involved in the development and implementation of those interventions. G R N PW A

Rewrite: ____

20. All students can achieve grade-level benchmarks if they have sufficient support. G R N PW A

Rewrite: ____

If you believe that there are other important questions not addressed in this survey that would help identify the degree to which school and district personnel posses the beliefs necessary to implement the PS/RtI model, please list them below and state the domain (i.e., overall educational philosophy, assessment practices, core instruction, intervention, and special education eligibility determination) that it characterizes:

____

Thank you for your assistance with this important step in validating a measure to capture the beliefs of school and district personnel as they relate to PS/RtI.

Perception of Practices Survey Content Validation – Item Content and Clarification Rating Form

Directions:

The Perceptions of Practices Survey is intended to capture the degree to which school and district personnel perceive that their schools are implementing practices consistent with a Problem-Solving/Response-to-Intervention (PS/RtI) model. The items on the survey are designed to assess school and district personnel perceptions about practices in one or more of the following domains; data-based decision-making, tiered service delivery, the problem-solving process, and special education eligibility determination. The data derived from the survey will be used by Floirda PS/RtI Project staff to inform the services provided to schools.

A good survey is concise, contains clearly and accurately written items that relate to the purpose of the survey, and avoids duplicate items. To evaluate the degree to which the attached survey meets these criteria, please rate each item on the basis of appropriateness of content, necessity, and clarity. Read each question carefully and rate it by circling one or more of the following descriptors:

G = Good (Item is clearly and accurately written);

R = Redundant (There are items with similar content and meaning);

N = Nonessential (The content is non-related to any of the five PS/RtI belief domains);

PW = Poorly Written (Item has semantic or grammatical errors);

A = **Ambiguous** (Item has abstract or vague content, or double-barreled items that ask two questions in one statement).

If you have found an item to be problematic (i.e., you circled it with **R, N, PW,** or **A**), please provide suggestions by rewriting the item in the space below, or write: **"Delete item"** if you believe the item does not address practices related to PS/RtI.

This survey will be completed by school and district personnel participating in PS/RtI training across the state of Florida. Respondents will be asked to rate the degree to which each practice is occurring on a 5-point continuum of <u>never occurs</u> to <u>always occurs</u>. For your information, school and district personnel will use the following ratings:

1 = Never Occurs

2 = Rarely Occurs

3 = Sometimes Occurs

4 = Often Occurs

5 = Always Occurs

Perceptions of Practices Survey

G=Good R=Redundant N=Nonessential PW=Poorly Written A=Ambiguous

Practices	**Content and Clarity Ratings**
1. Data (e.g., CBM, DIBELS, FCAT, Office Discipline Referrals) are used to determine the percent of students receiving core instruction (general education classroom only) who achieve benchmarks in: a. Academics b. Behavior	G R N PW A
Rewrite: ______________________________	
2. Data are used to make decisions about necessary changes to the core curriculum or discipline procedures to increase the percent of students achieving benchmarks in: a. Academics b. Behavior	G R N PW A
Rewrite: ______________________________	
3. Data are used (e.g., CBM, DIBELS, Office Discipline Referrals) to identify at-risk students in need of supplemental and/or intensive interventions for: a. Academics b. Behavior	G R N PW A
Rewrite: ______________________________	

4. The students identified as at-risk routinely receive additional (i.e., supplemental) intervention(s) for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

5. Progress monitoring occurs for all students receiving supplemental and/or intensive interventions for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

6. Progress monitoring data (e.g., CBM, DIBELS, behavioral observations) are used to determine the percent of students who receive supplemental and/or intensive interventions who achieve grade-level benchmarks for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

7. A standard protocol intervention (e.g., same type of intervention used for similar problems) is used initially for <u>all</u> students who require supplemental instruction for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

8. The target behavior is routinely defined in terms of the <u>desired</u> behavior instead of the <u>problem</u> behavior for: G R N PW A

a. Academics
b. Behavior

Rewrite: ____

9. Quantifiable data (e.g., reading fluency score, percent compliance, percent on-task) are used to identify the target student's current performance in the area of concern for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

10. Quantifiable data (e.g., reading fluency score, percent compliance, percent on-task) are used to identify the <u>desired</u> level of performance (i.e., the benchmark) in the area of concern for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

11. Quantifiable data (e.g., reading fluency score, percent compliance, percent on-task) are used to identify the current performance of same-age peers for the same data as the target student for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

12. The Problem-Solving Team routinely develops hypotheses (i.e., reasons) explaining why the target student is not demonstrating the <u>desired</u> behavior for: G R N PW A
a. Academics

b. Behavior

Rewrite: ____

13. Data are collected to confirm the reasons for why the student is not achieving the desired level of performance for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

14. Intervention plans are routinely developed based on the confirmed reasons for why the student is not achieving the desired level of performance for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

15. The teacher routinely receives staff support to implement the intervention plan developed by the Problem Solving Team for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

16. Data are collected routinely to determine the degree to which the intervention plans are implemented as intended for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

17. Data are graphed routinely to simplify interpretation of student performance for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

18. Progress monitoring data are collected to determine the degree to which the target student's rate of progress improved for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

19. Progress monitoring data are collected to determine whether the gap between decreased between the target student's performance and the desired level of performance for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

20. Progress monitoring data are collected to determine whether the gap decreased between the target student's performance and the performance of same-age peers for: G R N PW A
a. Academics
b. Behavior

Rewrite: ____

21. A student's response to intervention (e.g., rate of improvement) data are used routinely to determine whether a student is simply behind and can learn new skills or whether the student's performance is due to a disability for: G R N PW A

a. Academics
b. Behavior

Rewrite: ____

If you believe that there are other important questions not addressed in this survey that would help identify the degree to which school and district personnel perceive that practices consistent with the PS/RtI model are being implemented in their schools, please list them below and state the domain (i.e., data-based decision-making, tiered service delivery, the problem-solving process, special education eligibility determination) that it characterizes:

____
____
____
____
____

Thank you for your assistance with this important step in validating a measure to capture school and district personnel perceptions about the degree to which PS/RtI practices are being implemented in their schools.

Perception of Skills Survey Content Validation – Item Content and Clarification Rating Form

Directions:

The Perception of Skills Survey is intended to capture the degree to which school and district personnel perceive that they have the skills needed to function within a Problem-Solving/Response-to-Intervention (PS/RtI) model. The items on the survey are designed to assess school and district personnel perceptions about their skills in one or more of the following domains; data-based decision-making, tiered service delivery, the problem-solving process, data collection procedures, technology use, and special education eligibility determination. Florida PS/RtI Project staff will use the data derived from the survey to inform the services provided to schools.

A good survey is concise, contains clearly and accurately written items that relate to the purpose of the survey, and avoids duplicate items. To evaluate the degree to which the attached survey meets these criteria, please rate each item on the basis of appropriateness of content, necessity, and clarity. Read each question carefully and rate it by circling one or more of the following descriptors:

G = Good (Item is clearly and accurately written);

R = Redundant (There are items with similar content and meaning);

N = Nonessential (The content is non-related to any of the five PS/RtI belief domains);

PW = Poorly Written (Item has semantic or grammatical errors);

A = **Ambiguous** (Item has abstract or vague content, or double-barreled items that ask two questions in one statement).

If you have found an item to be problematic (i.e., you circled it with **R, N, PW,** or **A**), please provide suggestions by rewriting the item in the space below, or write: **"Delete item"** if you believe the item does not address skills needed in a PS/RtI model.

This survey will be completed by school and district personnel participating in PS/RtI training across the state of Florida. Respondents will be asked to rate the degree to which they possess each skill on a 5-point continuum of I do not have this skill at all to I could teach others this skill. For your information, school and district personnel will use the following ratings:

1 = I do not have this skill at all

2 = I need substantial support to use this skill

3 = I have this skill, but still need some support

4 = I can use this skill with little support

5 = I could teach others this skill

Perceptions of Skills Survey

G=Good R=Redundant N=Nonessential PW=Poorly Written A=Ambiguous

Skills ______ Content and Clarity Ratings

1. I know how *to access* the data necessary to determine the percent of students in core instruction who are achieving benchmarks in: G R N PW A
    a. Academics
    b. Behavior

Rewrite: ______________________________

2. I have the skill to use the data *to make decisions* about the effectiveness of the core curriculum for individuals and groups of students for: G R N PW A
    a. Academics
    b. Behavior

Rewrite: ______________________________

3. Please rate your skill level on each of the following steps in the problem identification (i.e., referral reason) stage of problem-solving:

    a. Defining the referral concern in terms of a replacement behavior (what you want the student to be able to do) instead of a referral *problem* for: G R N PW A
        1. Academics
        2. Behavior

Rewrite: ____

b. Using data to define the current level of performance for the target student for: G R N PW A
   1. Academics
   2. Behavior

Rewrite: ____

c. Determining the desired level of performance (i.e., benchmark) for: G R N PW A
   1. Academics
   2. Behavior

Rewrite: ____

d. Determining current level of peer performance on the same behavior as the target student for: G R N PW A
   1. Academics
   2. Behavior

Rewrite: ____

e. Calculating the gap between student performance and the benchmark for: G R N PW A
   1. Academics
   2. Behavior

Rewrite: ____

f. Using gap data to determine whether core instruction should be modified or whether supplemental instruction should be directed to the target student for: G R N PW A

1. Academics
2. Behavior

Rewrite: ____

4. I have the skill to identify the appropriate supplemental intervention in my building for a student identified as at-risk for: G R N PW A
    a. Academics
    b. Behavior

Rewrite: ____

5. I have the skill to develop potential reasons (i.e., hypotheses) why a student or group of students is/are not achieving desired levels of performance (i.e., benchmarks) for: G R N PW A
    a. Academics
    b. Behavior

Rewrite: ____

6. I have the skill to determine the most appropriate type(s) of data to use to determine which reasons (i.e., hypotheses) are likely to be contributing to the problem for: G R N PW A
    a. Academics
    b. Behavior

Rewrite: ____

7. I have the skills to access sources (e.g., myself, internet sources, professional journals) to develop evidence-based interventions for: G R N PW A
    a. Academic core curricula
    b. Behavioral core curricula
    c. Academic supplemental curricula

   d. Behavioral supplemental curricula
   e. Academic individualized intervention plans
   f. Behavioral individualized intervention plans

Rewrite: ____

8. I have the skill to ensure that any supplemental and/or intensive interventions are integrated with core instruction in the general education classroom: G R N PW A
   a. Academics
   b. Behavior

Rewrite: ____

9. I have the skill to ensure that the proposed intervention plan is supported by the data that were collected: G R N PW A
   a. Academics
   b. Behavior

Rewrite: ____

10. I have the skill to provide the support necessary to ensure that the intervention is implemented appropriately for: G R N PW A
    a. Academics
    b. Behavior

Rewrite: ____

11. I have the skill to determine if an intervention was implemented the way it was supposed to be for: G R N PW A
    a. Academics
    b. Behavior

Rewrite: ____

12. I have the skill to select appropriate data (e.g., CBM, DIBELS, FCAT, behavioral observations) to use to progress monitor student performance during interventions: G R N PW A
    a. Academics
    b. Behavior

Rewrite: ____

13. I have the skill(s) to demonstrate the following graphing skills for large group, small group, and individual students: G R N PW A
    a. Graph target student data
    b. Graph benchmark data
    c. Graph peer data
    d. Draw an aimline
    e. Draw a trendline

Rewrite: ____

14. I have the skill to use progress monitoring data displayed on a graph to make decisions about the degree to which a student is responding to intervention (e.g., positive, questionable or poor response). G R N PW A

Rewrite: ____

15. I have the skill to make intervention recommendations based on the type of student(s) response to intervention. G R N PW A

Rewrite: ____

16. I have the skill to differentiate between students who have not learned skills (e.g., wait to fail, not ready, got too far behind) from those who have barriers to learning due to a disability. G R N PW A

Rewrite: ____

17. I have the skills to conduct the following data collection procedures: G R N PW A
    a. CBM
    b. DIBELS
    c. Accessing data from appropriate district- or school-wide assessments
    d. Standard behavioral observations
    e. Disaggregating data by race, gender, free/reduced lunch, language proficiency, and disability status

Rewrite: ____

18. I have skills to use technology in the following ways: G R N PW A
    a. Access the internet to locate sources of academic and behavioral evidence-based interventions.
    b. Use electronic data collection tools (e.g., PDAs)
    c. Use the Progress Monitoring and Reporting Network (PMRN)
    d. Use the School-Wide Information System (SWIS) for Positive Behavior Support
    e. Graph and display student and school data

Rewrite: ____

19. I have the skills to facilitate a PS/RtI meeting G R N PW A

Rewrite: ____

If you believe that there are other important questions not addressed in this survey that would help identify the degree to which school and district personnel perceive they possess the skills needed in a PS/RtI model, please list them below and state the domain (i.e., data-based decision-making, tiered service delivery, the problem-solving process, data collection procedures, technology use, and special education eligibility determination) that it characterizes:

____
____
____
____
____

Thank you for your assistance with this important step in validating a measure to capture school and district personnel perceptions about the degree to which they possess skills needed in a PS/RtI model.

School Personnel Satisfaction Survey Content Validation – Item Content and Clarification Rating Form

Directions:

The School Personnel Satisfaction Survey is intended to capture the degree to which school and district personnel are satisfied with the services provided to students under their current service delivery model. The items on the survey are designed to assess the level of satisfaction of school and district personnel in one or more of the following domains; assessment practices, instruction/intervention practices, data-based decision-making, effectiveness of services delivered, roles and responsibilities, and parental involvement. Florida Problem-Solving/Response-to-Intervention (PS/RtI) staff will use the data derived from the survey to inform the services provided to schools.

A good survey is concise, contains clearly and accurately written items that relate to the purpose of the survey, and avoids duplicate items. To evaluate the degree to which the attached survey meets these criteria, please rate each item on the basis of appropriateness of content, necessity, and clarity. Read each question carefully and rate it by circling one or more of the following descriptors:

G = Good (Item is clearly and accurately written);

R = Redundant (There are items with similar content and meaning);

N = Nonessential (The content is non-related to any of the five PS/RtI belief domains);

PW = Poorly Written (Item has semantic or grammatical errors);

A = **Ambiguous** (Item has abstract or vague content, or double-barreled items that ask two questions in one statement).

If you have found an item to be problematic (i.e., you circled it with **R, N, PW,** or **A**), please provide suggestions by rewriting the item in the space below, or write: **"Delete item"** if you believe the item does not provide satisfaction data that would inform PS/RtI implementation.

This survey will be completed by school and district personnel participating in PS/RtI training across the state of Florida. Respondents will be asked to rate the degree to which they are satisfied with the current method of service delivery in their schools on a 5-point continuum of very unsatisfied to very satisfied. For your information, school and district personnel will use the following ratings:

1 = Very Unsatisfied

2 = Unsatisfied

3 = Neutral

4 = Satisfied

5 = Very Satisfied

Problem-Solving/Response-to-Intervention School Personnel Satisfaction Survey

G=Good R=Redundant N=Nonessential PW=Poorly Written A=Ambiguous

Service Delivery Satisfaction Elements Content and Clarity Ratings

1. The method used to evaluate the effectiveness of core academic and behavior programs.	G R N PW A

Rewrite: ____

2. The decisions that are made regarding necessary changes to core academic or behavior programs.	G R N PW A

Rewrite: ____

3. The method that is used to identify students at-risk as early as possible.	G R N PW A

Rewrite: ____

4. The data used to identify students at risk for academic or behavioral difficulties.	G R N PW A

Rewrite: ____

5. How progress monitoring is carried out in the building.	G R N PW A

Rewrite: ____

6. The decisions that we make about students who are not successful with only core instruction (academic and/or behavior). G R N PW A

Rewrite: ____

7. The range and types of interventions for students <u>before</u> they are referred to the school team. G R N PW A

Rewrite: ____

8. Intervention support provided to teachers to implement interventions before students are referred to the school team. G R N PW A

Rewrite: ____

9. The types and level of communication between classroom teachers, support staff (instructional, student services) and administration regarding progress monitoring and intervention implementation and support. G R N PW A

Rewrite: ____

10. How efficiently assessments are administered for: G R N PW A
    a. Reading
    b. Math
    c. Behavior

Rewrite: ____

11. Availability of technology (e.g., computer) to support

progress monitoring: G R N PW A

a. Reading
b. Math
c. Behavior

Rewrite: ____

12. The types of data used to inform instruction: G R N PW A
    a. Reading
    b. Math
    c. Behavior

Rewrite: ____

13. The range of instructional options available in my school for students not meeting expectations in: G R N PW A
    a. Reading
    b. Math
    c. Behavior

Rewrite: ____

14. How quickly interventions are available in my school to students not meeting expectations in: G R N PW A
    a. Reading
    b. Math
    c. Behavior

Rewrite: ____

15. How "doable" the interventions are: G R N PW A
    a. Academics
    b. Behavior

Rewrite: ____

16. The support received from other personnel in my school when implementing interventions for: G R N PW A
    a. Academics
    b. Behavior

Rewrite: ____

17. The degree to which the interventions move students toward benchmarks. G R N PW A

Rewrite: ____

18. The degree to which the problem-solving team is helpful to teachers. G R N PW A

Rewrite: ____

19. The degree to my school meet instructional goals (e.g., Adequate Yearly Progress criteria) for ALL students. G R N PW A

Rewrite: ____

20. My role and activities in the current method of problem-solving. G R N PW A

Rewrite: ____

21. How well the school meets the needs of diverse students in the building. G R N PW A

Rewrite: ____

22. The progress toward benchmarks that special education students make in the general education classroom. G R N PW A

Rewrite: ____

23. The level of parent involvement in the problem-solving process for at-risk students. G R N PW A

Rewrite: ____

24. The level of parent involvement in interventions for at-risk students. G R N PW A

If you believe that there are other important questions not addressed in this survey that would help identify the degree to which school and district personnel are satisfied with the services provided to students in their schools, please list them below and state the domain (i.e., assessment practices, instruction/intervention practices, data-based decision-making, effectiveness of services delivered, roles and responsibilities, and parental involvement) that it characterizes:

____
____
____
____
____

Thank you for your assistance with this important step in validating a measure to capture school and district personnel satisfaction with the services provided to students in their schools.

Critical Components Checklist Content Validation Form

Directions:

The Critical Components Checklist is intended to capture the degree to which permanent products (e.g., meeting notes, psychoeducational reports) derived from student problem-solving contain service-delivery components considered critical within a Problem-Solving/Response-to-Intervention (PS/RtI) model. The items on the checklist are designed to assess the degree to which critical components of problem-solving were present in the following domains; Problem Identification, Problem Analysis, Intervention Development and Implementation, and Program Evaluation/RtI.

The Critical Components Checklist will be completed by district-based PS/RtI coaches across the state of Florida. Respondents will be asked to rate the degree to which critical components of PS/RtI are present in the permanent products derived from student problem-solving on a 3-point continuum of present to absent. For your information, district-based PS/RtI coaches will use the following ratings:

1 = Present

2 = Partially Present

3 = Absent

A rubric will be provided to the PS/RtI coaches that contains a description of what constitutes present, partially present, and absent for each item on the checklist. Both the instrument and rubric are attached for you to reference.

For each item on the checklist, you will be asked to make one of three decisions: **AGREE-accept** the item as it is written, **CHANGE-accept with noted changes**, or **DISAGREE-eliminate** the item. If you circle change or have comments on a given item, please provide your suggested revisions or comments in the space labeled "Rewrite/Comments."

Critical Components Checklist

Critical Components **Item Rating**

1. One or more replacement behaviors were identified — **Agree** **Change** **Disagree**

Rewrite/Comments: ____

2. Data describing current and expected levels of performance collected — **Agree** **Change** **Disagree**

Rewrite/Comments: ____

3. A gap analysis was conducted to determine the appropriate tier of intervention — **Agree** **Change** **Disagree**

Rewrite/Comments: ____

4. Hypotheses were developed across multiple domains — **Agree** **Change** **Disagree**

Rewrite/Comments: ____

5. Hypotheses were developed to determine if the student was not performing the replacement behavior because of a performance and/or skill deficit — **Agree** **Change** **Disagree**

Rewrite/Comments: ____

6. Data were used to determine viable or active

hypotheses for why the replacement behavior was not occurring — **Agree** **Change** **Disagree**

Rewrite/Comments: ____

7. Short- and long-term goals were clearly stated in relation to the benchmarks — **Agree** **Change** **Disagree**

Rewrite/Comments: ____

8. Interventions were developed to address barriers identified by verified hypotheses — **Agree** **Change** **Disagree**

Rewrite/Comments: ____

9. An intervention plan specifying the logistics of the intervention(s) selected was provided — **Agree** **Change** **Disagree**

Rewrite/Comments: ____

10. Data were provided demonstrating that the intervention plan was implemented with integrity — **Agree** **Change** **Disagree**

Rewrite/Comments: ____

11. Intervention support plan with personnel was developed — **Agree** **Change** **Disagree**

Rewrite/Comments: ____

12. Criteria for positive response to intervention — **Agree** **Change** **Disagree**

defined

Rewrite/Comments: ____

13. Progress monitoring data were collected/scheduled **Agree** **Change** **Disagree**

Rewrite/Comments: ____

14. A decision regarding the student's RtI was documented **Agree** **Change** **Disagree**

Rewrite/Comments: ____

15. A plan for continuing, modifying, or terminating the intervention plan was provided **Agree** **Change** **Disagree**

Rewrite/Comments: ____

If you believe that there are other important questions not addressed in this checklist that would help identify the degree to which schools are implementing critical components of PS/RtI, please list them below and state the domain (i.e., Problem Identification, Problem Analysis, Intervention Development and Implementation, and Program Evaluation/RtI) that it characterizes:

____
____
____
____
____

<u>Directions</u>: For each selected student, please use the scale provided to indicate the degree to which each critical component of problem-solving is present in permanent products (e.g., meeting notes, psychoeducational reports) that resulted from student problem-solving. See the attached rubric for the criteria for determining the degree to which each critical component is present.

Component	**1 = Present** **2 = Partially Present** **3 = Absent**	**Evidence/Comments**
Problem Identification		
1. One or more replacement behaviors were identified	1 2 3	
2. Data describing current and expected levels of performance collected	1 2 3	
3. A gap analysis was conducted to determine the appropriate tier of intervention	1 2 3	
Problem Analysis		
4. Hypotheses were developed across multiple domains	1 2 3	
5. Hypotheses were developed to determine if the student was not performing the replacement behavior because of a performance and/or skill deficit	1 2 3	
6. Data were used to determine viable or active hypotheses for why the replacement behavior was not occurring	1 2 3	
Intervention Development and Implementation		
7. Short- and long-term goals were clearly stated in relation to the benchmarks	1 2 3	
8. Interventions were developed to address barriers identified by verified hypotheses	1 2 3	
9. An intervention plan specifying the logistics of the intervention(s) selected was provided	1 2 3	
10. Data were provided demonstrating that the	1 2 3	

intervention plan was implemented with integrity		
11. Intervention support plan with personnel was developed	1 2 3	
Program Evaluation/RtI		
12. Criteria for positive response to intervention defined	1 2 3	
13. Progress monitoring data were collected/scheduled	1 2 3	
14. A decision regarding the student's RtI was documented	1 2 3	
15. A plan for continuing, modifying, or terminating the intervention plan was provided	1 2 3	

Critical Components Checklist Rubric – Draft

1. Replacement behavior identified
    a. Present = Replacement behavior provided in observable and measurable terms
    b. Partially Present = Replacement behavior provided, but not in observable and measurable terms
    c. Absent = Replacement behavior not provided

2. Data on current and expected levels of performance collected
    a. Present = Data collected on current level of student performance, current level of peer performance and the benchmark.
    b. Partially Present = Data collected on current level of student performance, but data on the current level of peer performance or the benchmark not collected
    c. Absent = No data collected on the current level of student performance

3. Gap analysis conducted
    a. Present = Data were used to calculate the gap between the student and the benchmark, and the peers and the benchmark
    b. Partially Present = Data were used to calculate the gap between the student and the benchmark, but not the peers and the benchmark
    c. Absent = No analysis was conducted to determine the gap between the student and the benchmark

4. Multiple hypotheses developed

   a. Present = Reasons for the student not performing the replacement behavior were developed. The reasons provided span multiple hypotheses domains (e.g., child, curriculum, peers, family/community, classroom, teacher)
   b. Partially Present = Reasons for the student not performing the replacement behavior were developed, but the reasons do not span multiple hypotheses domains (e.g., curriculum hypotheses only).
   c. Absent = Reasons for the student not performing the replacement behavior were not developed

5. Hypotheses developed to determine performance or skill deficit
   a. Present = Hypotheses developed to determine whether the student not performing the replacement behavior was due to a performance and/or skill deficit
   b. Partially Present = A discussion of performance versus skill deficits was provided, but no formal hypotheses addressing whether the student was not performing the replacement behavior because of a performance and/or skill deficit were developed
   c. Absent = No discussion of, or hypotheses investigating, whether the student was not performing the replacement behavior because of a performance and/or skill deficit was provided

6. Data collected to determine viable hypotheses
   a. Present = Data collected using RIOT (Review, Interview, Observe, Test) procedures for all hypotheses to determine the reasons that are likely to be barriers to the student performing the replacement behavior
   b. Partially Present = Data collected using RIOT (Review, Interview, Observe, Test) procedures for some hypotheses to determine the reasons that are likely to be barriers to the student performing the replacement behavior
   c. Absent = Data not collected to determine the reasons that are likely to be barriers to the student performing the replacement behavior

7. Short- and long-term goals clearly stated
   a. Present = Short- and long-term goals for student response-to-intervention were clearly stated in relation to the benchmark
   b. Partially Present = Short- and long-term goals for student response-to-intervention were clearly stated, but did not relate to the benchmark
   c. Absent = Short-term and long-term goals were not stated

8. Interventions linked to barriers from verified hypotheses
    a. Present = The components of the intervention plan can be linked directly to barriers to learning identified by verified hypotheses
    b. Partially Present = Some of the components of the intervention plan can be linked directly to barriers to learning identified by verified hypotheses
    c. Absent = Little or none of the components of the intervention plan can be linked directly to barriers to learning identified by verified hypotheses

9. Intervention plan developed specifying logistics
    a. Present = An intervention plan specifying who will be responsible for delivering the intervention(s), what procedures the individual(s) will follow, when the intervention(s) will be delivered, where the intervention(s) will be delivered, and what materials will be needed was provided
    b. Partially Present = An intervention plan was provided, but some logistical information (i.e., who, what, when, where, materials needed) was missing
    c. Absent = No intervention plan specifying who will be responsible for delivering the intervention(s), what procedures the individual(s) will follow, when the intervention(s) will be delivered, where the intervention(s) will be delivered, or what materials will be needed was provided

10. Data provided demonstrating intervention integrity
    a. Present = Quantifiable data were provided demonstrating that the intervention plan was implemented as intended
    b. Partially Present = Information was provided to support claims that the intervention plan was implemented as intended, but no quantifiable data were present
    c. Absent = No information on the degree to which the intervention plan was implemented as intended was provided

11. Intervention support plan developed
    a. Present = An intervention support plan was developed that included the personnel responsible for providing support, the dates on which support was to be provided, and timelines for follow-up to address intervention implementation issues
    b. Partially Present = An intervention support plan was developed, but either the personnel responsible for providing support, the dates on which support was to be provided, or timelines for follow-up to address intervention implementation issues was not provided

    c. Absent = No intervention support plan was developed

12. Criteria for determining positive RtI defined
    a. Present = The rate at which improvement on the target skill is needed for the student's RtI to be considered positive was provided in measurable terms
    b. Partially Present = Quantifiable data defining improvement in the target skill needed for positive RtI was provided, but the data did not include a rate index
    c. Absent = No criteria for determining positive RtI were provided

13. Progress monitoring data collected/scheduled
    a. Present = Progress monitoring data were collected at an appropriate frequency using measures that are sensitive to small changes in the target skill
    b. Partially Present = Progress monitoring data were collected, but were not collected frequently enough or were collected using measures that were are not sensitive to small changes in the target skill
    c. Absent = Little or no progress monitoring data were collected

14. Decisions regarding student RtI documented
    a. Present = Documented decisions regarding whether a student demonstrated positive, questionable, or poor RtI were made based on progress monitoring data
    b. Partially Present = A discussion of the student's RtI was provided, but no decisions regarding positive, questionable, or poor RtI were made
    c. Absent = No discussion of the student's RtI was provided

15. Plan for continuing, modifying, or terminating the intervention plan provided
    a. Present = A plan for continuing, modifying, or terminating the intervention plan was provided based on the student's RtI
    b. Partially Present = A plan for continuing, modifying, or terminating the intervention plan was provided, but it did not link directly to the student's RtI
    c. Absent = No plan for continuing, modifying, or terminating the intervention plan was provided

Problem-Solving/Response-to-Intervention Needs Assessment Content Validation Form

<u>Directions</u>:

The Problem-Solving/Response-to-Intervention (PS/RtI) Needs Assessment is intended to provide data on the degree to which schools have key elements needed to implement PS/RtI in place. The domains on the needs assessment parallel the Florida PS/RtI Project's change model. Items that assess the degree to which school personnel have (1) reached consensus regarding implementing the model, (2) created the necessary infrastructure (e.g., data collection systems, Problem-Solving Team), and (3) implemented critical components of PS/RtI (e.g., Three-Tiered Intervention System) are included.

The PS/RtI Needs Assessment will be completed by district-based PS/RtI coaches in conjunction with members of Building Leadership Teams across the state of Florida. For each item, respondents will be asked to indicate the degree to which their school has demonstrated an indicator of reaching consensus, creating infrastructure, or implementing the model. For your information, respondents will use the following scale:

<u>**N**</u>ot started (0 to 25%)

<u>**I**</u>n progress (26 to 74%)

<u>**A**</u>chieved (75 to 100%)

<u>**M**</u>aintaining (Rated as achieved last time)

A copy of the instrument is included for you to reference while completing the validation form.

For each item on the checklist, you will be asked to make one of three decisions: **AGREE-accept** the item as it is written, **CHANGE-accept with noted changes**, or **DISAGREE-eliminate** the item. If you circle change or have comments for a given item, please provide your suggested revisions or comments in the space labeled "Rewrite/Comments."

SAPSI

SAPSI Items **Item Rating**

Domain - Comprehensive Commitment and Support

	Agree	Change	Disagree
1. District level leadership provides active commitment and support (Meets to review data and issues at least twice each year.).	**Agree**	**Change**	**Disagree**

Rewrite/Comments: ______________________________

	Agree	Change	Disagree
2. The building leadership provides training, support and active involvement. (i.e. principal actively involved in leadership team meetings).	**Agree**	**Change**	**Disagree**

Rewrite/Comments: ______________________________

	Agree	Change	Disagree
3. Faculty/staff support and are actively involved with problem solving (e.g., One of top 3 goals of the SIP, 80% of faculty document support, 3 year timeline for implementation available).	**Agree**	**Change**	**Disagree**

Rewrite/Comments: ______________________________

	Agree	Change	Disagree
4. A school leadership team is established and represents the roles of an administrator, facilitator, data mentor, content specialist, parent, and representative teachers.	**Agree**	**Change**	**Disagree**

Rewrite/Comments: ______________________________

5. Data are collected (e.g., beliefs, satisfaction surveys) to assess level of commitment and impact of PS/RtI on faculty/staff. **Agree** **Change** **Disagree**

Rewrite/Comments: ____

Domain – Infrastructure Development: Data Collection and Team Structure

6. School-wide data are collected through an efficient and effective systematic process (e.g., DIBELS, CBM, ODRs). **Agree** **Change** **Disagree**

Rewrite/Comments: ____

7. Statewide and other databases (e.g., PMRN, SWIS) are used to make data-based decisions. **Agree** **Change** **Disagree**

Rewrite/Comments: ____

8. School-wide data are presented to staff after each benchmarking session (e.g., staff meetings, team meetings, grade-level meetings). **Agree** **Change** **Disagree**

Rewrite/Comments: ____

9. School-wide data are used to evaluate the effectiveness of core academic and behavior programs **Agree** **Change** **Disagree**

Rewrite/Comments: ____

10. CBM and/or Office Disciplinary Referral data are used in conjunction with other data sources to identify students needing targeted group interventions and individualized interventions. **Agree** **Change** **Disagree**

Rewrite/Comments: ____

11. Data are used to evaluate the effectiveness (RtI) for Tier 2 intervention programs. **Agree** **Change** **Disagree**

Rewrite/Comments: ____

12. Individual student data are utilized to determine the response to Tier 3 interventions. **Agree** **Change** **Disagree**

Rewrite/Comments: ____

13. Special Education Eligibility determination is made using the RtI model for the following ESE programs: **Agree** **Change** **Disagree**
    a. EBD
    b. SLD

Rewrite/Comments: ____

14. The building staff has a process to select evidence-based practices. **Agree** **Change** **Disagree**
    a. Tier 1
    b. Tier 2
    c. Tier 3

Rewrite/Comments: ____

15. Team has a regular meeting schedule for problem-solving activities. **Agree** **Change** **Disagree**

Rewrite/Comments: ____

16. Team evaluates target student(s) RtI at regular meetings. **Agree** **Change** **Disagree**

Rewrite/Comments: ____

17. Team includes parents. **Agree** **Change** **Disagree**

Rewrite/Comments: ____

18. School-based Team has regularly scheduled data day meetings to evaluate Tier 1 and Tier 2 data. **Agree** **Change** **Disagree**

Rewrite/Comments: ____

Domain – Implementation: Three-Tiered Intervention System and Problem-Solving Process

19. Building has established a three-tiered system of service delivery **Agree** **Change** **Disagree**
    a. Tier 1 Academic and Behavioral Core Instruction clearly identified.
    b. Tier 2 Academic and Behavioral Supplemental Instruction/Programs clearly identified.

c. Tier 3 Academic and Behavioral Intensive Programs are evidence-based.

Rewrite/Comments: ____

20. Teams implement effective problem solving procedures including: **Agree Change Disagree**
    a. Problem is defined as a data-based discrepancy (GAP Analysis) between what is expected and what is occurring (includes peer and benchmark data).
    b. Replacement behaviors (e.g., reading performance targets, homework completion targets) are clearly defined.
    c. Problem analysis is conducted using available data and evidence-based hypotheses.
    d. Evidence-based interventions are implemented.
    e. Intervention support personnel are identified and scheduled for all interventions.
    f. Intervention integrity is documented.
    g. Response to intervention is evaluated through systematic data collection
    h. Changes are made to intervention based on student response
    i. Parents are routinely involved in implementation of interventions

Rewrite/Comments: ____

Domain – Implementation: Monitoring and Action Planning

21. The school leadership team meets at least

twice each year to review data and implementation issues. **Agree** **Change** **Disagree**

Rewrite/Comments: ______________________________

22. The school leadership team meets at least twice each year with the district leadership team to review data and implementation issues. **Agree** **Change** **Disagree**

Rewrite/Comments: ______________________________

23. Changes are made to the implementation plan based on school and district leadership team decisions. **Agree** **Change** **Disagree**

Rewrite/Comments: ______________________________

24. Feedback on the outcomes of the PS/RtI Project is provided to school-based faculty and staff at least yearly. **Agree** **Change** **Disagree**

Rewrite/Comments: ______________________________

If you believe that there are other important questions not addressed in this needs assessment that would help identify the degree to which schools are demonstrating consensus regarding implementation of the model, creating the necessary infrastructure, or implementing components of PS/RtI, please write the suggestions below and provide the domain (i.e., Comprehensive Commitment and Support, Infrastructure Development: Data Collection and Teach Structure, Implementation: Three-Tiered Intervention System and Problem-Solving Process, and Implementation: Monitoring and Action Planning) that they characterize:

____

____

Self-Assessment of Problem Solving Implementation (SAPSI)

School Name	Date of Report
District Name & Number	**County**

INSTRUCTIONS

***Complete and submit at least three times per school year*.**

The problem solving team should complete this checklist three times per school year to monitor activities for implementation of problem solving in the school. Completed forms can be faxed or emailed to the following address:

Stevi Schermond

Problem Solving/Response to Intervention Project

4202 E. Fowler Ave., EDU 162

Tampa, FL 33620

Problem-Solving Team Members (Name & Position)

Person(s) Completing Report (Name & Position)

PS/RtI Implementation Assessment				
Complete and submit **at least three times per school year.**	**Status:** **N**ot Started (0 to 25%) **I**n Progress (25 to 74%) **A**chieved (75 to 100%) **M**aintaining (Rated as achieved last time)			
		Date (MM/DD/YY)	**Date** (MM/DD/YY)	**Date** (MM/DD/YY)
Comprehensive Commitment and Support	*Date:*			
2. District level leadership provides active commitment and support (Meets to review data and issues at least twice each year.).	*Status:*			
3. The building leadership provides training, support and active involvement. (i.e. principal actively involved in leadership team meetings).	*Status:*			
4. Faculty/staff support and are actively involved with problem solving (e.g., One of top 3 goals of the SIP, 80% of faculty document support, 3 year timeline for implementation available).	*Status:*			
5. A school leadership team is established and represents the roles of an administrator, facilitator, data mentor, content specialist, parent, and representative teachers.	*Status:*			
6. Data are collected (e.g., beliefs, satisfaction surveys) to assess level of commitment and impact of PS/RtI on faculty/staff.	*Status:*			

PS/RtI Implementation Assessment				
Infrastructure Development		**Date (MM/DD/YY)**	**Date (MM/DD/YY)**	**Date (MM/DD/YY)**
	Date:			
7. School-wide data are collected through an efficient and effective systematic process (e.g., DIBELS, CBM, ODRs).	*Status:*			
8. Statewide and other databases (e.g., PMRN, SWIS) are used to make data-based decisions.	*Status*			
9. School-wide data are presented to staff after each benchmarking session (e.g., staff meetings, team meetings, grade-level meetings).	*Status:*			
10. School-wide data are used to evaluate the effectiveness of core academic and behavior programs.	*Status:*			
11. CBM and/or Office Disciplinary Referral data are used in conjunction with other data sources to identify students needing targeted group interventions and individualized interventions.	*Status*			
12. Data are used to evaluate the effectiveness (RtI) for Tier 2 intervention programs.	*Status:*			
13. Individual student data are utilized to determine the response to Tier 3 interventions.	*Status:*			
14. Special Education Eligibility determination is made using the RtI model for the following ESE programs: a. EBD b. SLD	*Status:* *Status:*			
15. The building staff has a process to select evidence-based practices. a. Tier 1 b. Tier 2 c. Tier 3	*Status:* *Status:* *Status:*			
16. Team has a regular meeting schedule for problem-solving activities.	*Status:*			
17. Team evaluates target student(s) RtI at regular meetings.	*Status:*			
18. Team includes parents.	*Status*			
19. School-based Team has regularly scheduled data day meetings to evaluate Tier 1 and Tier 2 data.	*Status*			

<table>
<tr><th colspan="5">PS/RtI Implementation Assessment</th></tr>
<tr><td>Complete and submit at least three times per school year.</td><td colspan="4">Status:
<u>N</u>ot Started (0 to 25%)
<u>I</u>n Progress (25 to 74%)
<u>A</u>chieved (75 to 100%)
<u>M</u>aintaining (Rated as achieved last time)</td></tr>
<tr><td>Implementation: Three-Tiered Intervention System and Problem-Solving Process</td><td>Date:</td><td>Date (MM/DD/YY)</td><td>Date (MM/DD/YY)</td><td>Date (MM/DD/YY)</td></tr>
<tr><td>20. Building has established a three-tiered system of service delivery
a. Tier 1 Academic and Behavioral Core Instruction clearly identified.
b. Tier 2 Academic and Behavioral Supplemental Instruction/Programs clearly identified.
c. Tier 3 Academic and Behavioral Intensive Programs are evidence-based.</td><td>Status:
Status:
Status:</td><td></td><td></td><td></td></tr>
<tr><td>21. Teams implement effective problem solving procedures including:</td><td></td><td></td><td></td><td></td></tr>
<tr><td>a. Problem is defined as a data-based discrepancy (GAP Analysis) between what is expected and what is occurring (includes peer and benchmark data).</td><td>Status:</td><td></td><td></td><td></td></tr>
<tr><td>b. Replacement behaviors (e.g., reading performance targets, homework completion targets) are clearly defined.</td><td>Status:</td><td></td><td></td><td></td></tr>
<tr><td>c. Problem analysis is conducted using available data and evidence-based hypotheses.</td><td>Status:</td><td></td><td></td><td></td></tr>
<tr><td>d. Evidence-based interventions are implemented.</td><td>Status:</td><td></td><td></td><td></td></tr>
<tr><td>e. Intervention support personnel are identified and scheduled for all interventions.</td><td>Status:</td><td></td><td></td><td></td></tr>
</table>

<table>
<tr><th colspan="5">PS/RtI Implementation Assessment</th></tr>
<tr><td>Complete and submit at least three times per school year.</td><td colspan="4">Status:
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<u>M</u>aintaining (Rated as achieved last time)</td></tr>
<tr><td rowspan="2">Implementation: Three-Tiered Intervention System and Problem-Solving Process</td><td rowspan="2">Date:</td><td>Date (MM/DD/YY)</td><td>Date (MM/DD/YY)</td><td>Date (MM/DD/YY)</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>f. Intervention integrity is documented.</td><td>Status:</td><td></td><td></td><td></td></tr>
<tr><td>g. Response to intervention is evaluated through systematic data collection</td><td>Status:</td><td></td><td></td><td></td></tr>
<tr><td>h. Changes are made to intervention based on student response</td><td>Status:</td><td></td><td></td><td></td></tr>
<tr><td>I. Parents are routinely involved in implementation of interventions</td><td>Status:</td><td></td><td></td><td></td></tr>
</table>

PS/RtI Implementation Assessment				
Complete and submit **at least three times per school year.**	**Status:** **N**ot Started (0 to 25%) **I**n Progress (25 to 74%) **A**chieved (75 to 100%) **M**aintaining (Rated as achieved last time)			
Implementation: Monitoring and Action Planning	*Date:*	**Date** (MM/DD/YY)	**Date** (MM/DD/YY)	**Date** (MM/DD/YY)
22. The school leadership team meets at least twice each year to review data and implementation issues.	*Status:*			
23. The school leadership team meets at least twice each year with the district leadership team to review data and implementation issues.	*Status:*			
24. Changes are made to the implementation plan based on school and district leadership team decisions.	*Status:*			
25. Feedback on the outcomes of the PS/RtI Project is provided to school-based faculty and staff at least yearly.	*Status:*			

Tiers I, II, & III Problem Identification Skill Assessment Content Validation Form

Directions: A number of worksheets have been developed to assess the degree to which participants in a statewide Problem-Solving/Response-to-Intervention (PS/RtI) initiative are able to demonstrate skills in the steps of problem-solving and Response-to-Intervention. You have agreed to participate as a member of a validation panel. The purpose of the panel is to assess the degree to which each of the worksheets assesses a particular step of the PS/RtI process. For each worksheet, the step of the problem solving process the worksheet is attempting to assess will be identified. You will be asked to answer a number of questions about the particular skill and worksheet. In each case, you will be asked to make one of three decisions: **AGREE-accept** the document (or section) as it is written, **CHANGE-accept with noted changes**, or **DISAGREE-eliminate** the document or section.

The primary question to be answered is whether or not each worksheet reasonably assesses the skill identified. The skill being examined in this worksheet is identified below in section I. Please complete sections II and III using the directions provided below.

I. Skill Assessed (step in the PS/RtI process): Tiers I, II, & III Problem Identification

II. Please answer each of the following questions by circling Agree, Change, or Disagree. If you circle change on an item and/or have comments, please provide the suggested changes or comments below the item.

1. Overall, this worksheet assesses the identified skill?	**Accept**	**Change**	**Disagree**

Comments/Suggested Changes:

2. The information contained in the case study is clear and accurate enough to answer the questions following the case study.	**Accept**	**Change**	**Disagree**

Comments/Suggested Changes:

3. Indicate how you would rate this case study on each of the following:
   a. Questions 1-5 reflect the information required for Problem Identification. **Accept** **Change** **Disagree**

      Comments/Suggested Changes:

   b. Questions 1-5 can be answered with the data provided in the case study paragraphs. **Accept** **Change** **Disagree**

      Comments/Suggested Changes:

   c. Question 6 is an appropriate question for the Problem Identification Step given the data provided. **Accept** **Change** **Disagree**

Comments/Suggested Changes:

III. Please write any additional comments or suggestions:

Tier I Problem ID Skill Assessment Draft

You are asked by the building principals of one of the project schools to review building-level data and answer a number of questions for her. The data that are provided are 3rd grade FCAT Reading data and represent the % of students in each category who achieved "proficient" levels (a score of 3 or better on the FCAT).

All 3rd Grade Students

Disaggregated Student Group	% Proficient
Caucasian	82
African American	43
Hispanic	56
Low SES	52
Student's with Disabilities	40
LEP	42

3rd Grade Students Receiving Supplemental Instruction (Tier 2)

Disaggregated Student Group	% Proficient
Caucasian	67
African American	32
Hispanic	40
Low SES	59
Students with Disabilities	50
LEP	60

3rd Grade Students Receiving Intensive Instruction (Tier III)

Disaggregated Student Group	% Proficient
Caucasian	31
African American	30
Hispanic	55
Low SES	25
Students with Disabilities	37
LEP	45

<u>Questions</u>

1. Is the Core Instruction effective? Justify your decision.

2. What should be the focus of any modifications to core instruction?

3. Is Supplemental Instruction effective? Justify your decision.

4. Who is most likely to be referred for Tier 3 interventions in this school setting?

5. Which group of students is most at-risk for literacy failure in this building?

6. What, in general, can you say about the effectiveness of the different instruction tiers in this building?

Appendix E

Beliefs Survey

Beliefs Survey

1. **Your PS/RtI Project ID:**

   Your PS/RtI Project ID was designed to assure confidentiality while also providing a method to match an individual's responses across instruments. In the space provided (first row), please write in the last four digits of your Social Security Number and the last two digits of the year you were born. Then, shade in the corresponding circles.

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

Directions: *For items 2-5 below, please shade in the circle next to the response option that best represents your answer.*

2. Job Description:

¡ PS/RtI Coach	¡ Teacher-General Education	¡ Teacher-Special Education
¡ School Counselor	¡ School Psychologist	¡ School Social Worker
¡ Principal	¡ Assistant Principal	

Other (Please specify): ______________________________

3. Years of Experience in Education:

¡ Less than 1 year ¡ 1 – 4 years ¡ 5-9 years

¡ 10 – 14 years ¡ 15-19 years ¡ 20-24 years

¡ 25 or more years ¡ Not applicable

4. Number of Years in your Current Position:

¡ Less than 1 year ¡ 1 – 4 years ¡ 5-9 years

¡ 10 – 14 years ¡ 15-19 years ¡ 20 or more years

5. Highest Degree Earned:

¡ B.A./B.S. ¡ M.A./M.S. ¡ Ed.S. ¡ Ph.D./Ed.D.

Other (Please specify): ______________________________

Directions*: Using the scale below, please indicate your level of agreement or disagreement with each of the following statements by shading in the circle that best represents your response*.

1 **= Strongly Disagree (SD)**

2 **= Disagree (D)**

3 **= Neutral (N)**

4 = Agree (A)

5 **= Strongly Agree (SA)**

	SD	D	N	A	SA
6. I believe in the philosophy of No Child Left Behind (NCLB) even if I disagree with some of the requirements.	1	2	3	4	5
7. Core instruction should be effective enough to result in 80% of the students achieving benchmarks in					
7.a. reading	1	2	3	4	5
7.b. math	1	2	3	4	5
8. The primary function of supplemental instruction is to ensure that students meet grade-level benchmarks in					
8.a. reading	1	2	3	4	5
8.b. math	1	2	3	4	5
9. The majority of students with learning disabilities achieve grade-level benchmarks in					
9.a. reading	1	2	3	4	5
9.b. math	1	2	3	4	5

	SD	D	N	A	SA
10. The majority of students with behavioral problems (EH/SED or EBD) achieve grade-level benchmarks in					
10.a. reading	1	2	3	4	5
10.b. math	1	2	3	4	5
11. Students with high-incidence disabilities (e.g. SLD, EBD) who are receiving special education services are capable of achieving grade-level benchmarks (i.e., general education standards) in					
11.a. reading	1	2	3	4	5
11.b. math	1	2	3	4	5
12. General education classroom teachers should implement more differentiated and flexible instructional practices to address the needs of a more diverse student body.	1	2	3	4	5
13. General education classroom teachers would be able to implement more differentiated and flexible interventions if they had additional staff support.	1	2	3	4	5
14. The use of additional interventions in the general education classroom would result in success for more students.	1	2	3	4	5
15. Prevention activities and early intervention strategies in schools would result in fewer referrals to problem-solving teams and placements in special education.	1	2	3	4	5
16. The "severity" of a student's academic problem is determined not by how far behind the student is in terms of his/her academic performance but by how quickly the student responds to intervention.	1	2	3	4	5
17. The "severity" of a student's behavioral problem is determined not by how inappropriate a student is in terms of his/her behavioral performance but by how quickly the student responds to intervention.	1	2	3	4	5

	SD	D	N	A	SA
18. The results of IQ and achievement testing can be used to identify effective interventions for students with learning and behavior problems.	1	2	3	4	5
19. Many students currently identified as “LD” do not have a disability, rather they came to school “not ready” to learn or fell too far behind academically for the available interventions to close the gap sufficiently.	1	2	3	4	5
20. Using student-based data to determine intervention effectiveness is more accurate than using only “teacher judgment.”	1	2	3	4	5
21. Evaluating a student’s response to interventions is a more effective way of determining what a student is capable of achieving than using scores from “tests” (e.g., IQ/Achievement test).	1	2	3	4	5
22. Additional time and resources should be allocated first to students who are not reaching benchmarks (i.e., general education standards) before significant time and resources are directed to students who are at or above benchmarks.	1	2	3	4	5
23. Graphing student data makes it easier for one to make decisions about student performance and needed interventions.	1	2	3	4	5
24. A student’s parents (guardian) should be involved in the problem-solving process as soon as a teacher has a concern about the student.	1	2	3	4	5
25. Students respond better to interventions when their parent (guardian) is involved in the development and implementation of those interventions.	1	2	3	4	5
26. All students can achieve grade-level benchmarks if they have sufficient support.	1	2	3	4	5
27. The goal of assessment is to generate and measure effectiveness of instruction/intervention.	1	2	3	4	5

Appendix F

Perceptions of Practices Survey

Perceptions of Practices Survey

1. **Your PS/RtI Project ID:**

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

Your PS/RtI Project ID was designed to assure confidentiality while also providing a method to match an individual's responses across instruments. In the space provided (first row), please write in the last four digits of your Social Security Number and the last two digits of the year you were born. Then, shade in the corresponding circles

Directions: *For each item on this survey, please indicate how frequently or infrequently the given practice occurs in your school for both academics (i.e., reading and math) and behavior. Please use the following response scale*:

1 **= Never Occurs *(NO)***

2 **= Rarely Occurs *(RO*)**

3 **= Sometimes Occurs *(SO)***

4 **= Often Occurs *(OO)***

5 **= Always Occurs *(AO*)**

¡ **= Do Not Know (DK)**

In my School:	N O	R O	S O	O O	A O	D K
2. Data (e.g., Curriculum-Based Measurement, DIBELS, FCAT, Office Discipline Referrals) are used to determine the percent of students receiving core instruction (general education classroom only) who achieve benchmarks (district grade-level standards) in:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡
3. Data are used to make decisions about necessary changes to the core curriculum or discipline procedures to increase the percent of students achieving benchmarks (district grade-level standards) in:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡
4. Data are used (e.g., Curriculum-Based Measurement, DIBELS, Office Discipline Referrals) to identify at-risk students in need of supplemental and/or intensive interventions for:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡
5. The students identified as at-risk routinely receive additional (i.e., supplemental) intervention(s) for:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡

In my School:	NO	RO	SO	OO	AO	DK
6. Progress monitoring occurs for all students receiving supplemental and/or intensive interventions for:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡
7. Progress monitoring data (e.g., Curriculum-Based Measurement, DIBELS, behavioral observations) are used to determine the percent of students who receive supplemental and/or intensive interventions who achieve grade-level benchmarks for:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡
8. A standard protocol intervention (i.e., the same type of intervention used for similar problems) is used initially for <u>all</u> students who require supplemental instruction for:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡

Directions: *Items 9-18 refer to the typical Problem-Solving Team (i.e., Student Support Team, Intervention Assistance Team, School-Based Intervention Team, Child Study Team) meeting in your school that includes a student who has been referred for problem-solving or a special education evaluation. While addressing each item for academics (math and reading), think of a typical case in which a student has been referred for an academic concern. While addressing each question for behavior, think of a typical case in which a student has been referred for a behavioral concern. Then, please indicate how frequently each of the given practices occurs in your school using the same scale.*

In my School:	NO	RO	SO	OO	AO	DK
9. The target behavior is routinely defined in terms of the <u>desired</u> behavior (e.g., Johnny will raise his hand to ask a question, Susie will read 90 correct words per minute) instead of the <u>problem</u> behavior (e.g., Johnny talks out of turn, Susie reads below grade-level) for:						
c. Academics	1	2	3	4	5	¡
d. Behavior	1	2	3	4	5	¡
10. Quantifiable data (e.g., reading fluency score, percent compliance, percent on-task behavior) are used to						
a. identify the target student's current performance in the area of concern for:						
• Academics	1	2	3	4	5	¡
• Behavior	1	2	3	4	5	¡
b. identify the <u>desired</u> level of performance (i.e., the benchmark) in the area of concern for:						
• Academics	1	2	3	4	5	¡
• Behavior	1	2	3	4	5	¡
c. identify the current performance of same-age peers using the same data as the target student for:						
• Academics	1	2	3	4	5	¡
• Behavior	1	2	3	4	5	¡
11. The Problem-Solving Team routinely develops hypotheses (i.e., proposed reasons) explaining why the target student is not demonstrating the <u>desired</u> behavior for:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡

In my School:	NO	RO	SO	OO	AO	DK
12. Data are collected to confirm the reasons that the student is not achieving the desired level of performance for:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡
13. Intervention plans are routinely developed based on the confirmed reasons that the student is not achieving the desired level of performance for:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡
14. The teacher of a student referred for problem-solving routinely receives staff support to implement the intervention plan developed by the Problem Solving Team for:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡
15. Data are collected routinely to determine the degree to which the intervention plans are being implemented as intended for:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡
16. Data are graphed routinely to simplify interpretation of student performance for:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡
17. Progress monitoring data are used to determine						
a. the degree to which the target student's rate of progress has improved for:						
• Academics	1	2	3	4	5	¡

In my School:	NO	RO	SO	OO	AO	DK
• Behavior	1	2	3	4	5	¡
b. whether the gap has decreased between the target student's current performance and the desired level of performance (i.e., benchmark) for:						
• Academics	1	2	3	4	5	¡
• Behavior	1	2	3	4	5	¡
c. whether the gap has decreased between the target student's current performance and the performance of same-age peers for:						
• Academics	1	2	3	4	5	¡
• Behavior	1	2	3	4	5	¡
18. A student's response-to-intervention data (e.g., rate of improvement) are used routinely to determine whether a student is simply behind and <u>can</u> learn new skills <u>or</u> whether the student's performance is due to a disability for:						
a. Academics	1	2	3	4	5	¡
b. Behavior	1	2	3	4	5	¡

THANK YOU!

Appendix G

Perceptions of RtI Skills Survey

Perceptions of RtI Skills Survey

1. **Your PS/RtI Project ID:**

   Your PS/RtI Project ID was designed to assure confidentiality while also providing a method to match an individual's responses across instruments. In the space provided (first row), please write in the last four digits of your Social Security Number and the last two digits of the year you were born. Then, shade in the corresponding circles.

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

Directions: *Please read each statement about a skill related to assessment, instruction, and/or intervention below, and then evaluate YOUR skill level within the context of working at a school/building level. Where indicated, rate your skill separately for academics (i.e., reading and math) and behavior. Please use the following response scale*:

1 **= I do not have this skill at all (NS)**

2 **= I have minimal skills in this area; need substantial support to use it (MnS)**

3 **= I have this skill, but still need some support to use it (SS)**

4 **= I can use this skill with little support (HS)**

5 **= I am highly skilled in this area and could teach others this skill (VHS)**

The skill to:	NS	Mn S	S S	H S	VH S
2. *Access* the data necessary to determine the percent of students in core instruction who are achieving benchmarks (district grade-level standards) in:					
a. Academics	1	2	3	4	5
b. Behavior	1	2	3	4	5
3. Use data *to make decisions* about individuals and groups of students for the:					
a. Core academic curriculum	1	2	3	4	5
b. Core/Building discipline plan	1	2	3	4	5

The skill to:	NS	MnS	SS	HS	VHS
4. Perform each of the following steps when identifying the problem for a student for whom concerns have been raised:					
a. Define the referral concern in terms of a replacement behavior (i.e., what the student should be able to do) instead of a referral *problem* for:					
• Academics	1	2	3	4	5
• Behavior	1	2	3	4	5
b. Use data to define the current level of performance of the target student for:					
• Academics	1	2	3	4	5
• Behavior	1	2	3	4	5
c. Determine the desired level of performance (i.e., benchmark) for:					
• Academics	1	2	3	4	5
• Behavior	1	2	3	4	5
d. Determine the current level of peer performance for the same skill as the target student for:					
• Academics	1	2	3	4	5
• Behavior	1	2	3	4	5
e. Calculate the gap between student current performance and the benchmark (district grade level standard) for:					
• Academics	1	2	3	4	5
• Behavior	1	2	3	4	5
f. Use gap data to determine whether core instruction should be adjusted or whether					

The skill to:	NS	MnS	SS	HS	VHS
supplemental instruction should be directed to the target student for:					
• Academics	1	2	3	4	5
• Behavior	1	2	3	4	5
5. Develop potential reasons (hypotheses) that a student or group of students is/are not achieving desired levels of performance (i.e., benchmarks) for:					
a. Academics	1	2	3	4	5
b. Behavior	1	2	3	4	5
6. Identify the most appropriate type(s) of data to use for determining reasons (hypotheses) that are likely to be contributing to the problem for:					
a. Academics	1	2	3	4	5
b. Behavior	1	2	3	4	5
7. Identify the appropriate supplemental intervention available in my building for a student identified as at-risk for:					
a. Academics	1	2	3	4	5
b. Behavior	1	2	3	4	5

The skill to:	NS	MnS	SS	HS	VHS
8. Access resources (e.g., internet sources, professional literature) to develop evidence-based interventions for:					
a. Academic core curricula	1	2	3	4	5
b. Behavioral core curricula	1	2	3	4	5
c. Academic supplemental curricula	1	2	3	4	5
d. Behavioral supplemental curricula	1	2	3	4	5
e. Academic individualized intervention plans	1	2	3	4	5
f. Behavioral individualized intervention plans	1	2	3	4	5
9. Ensure that any supplemental and/or intensive interventions are integrated with core instruction in the general education classroom:					
a. Academics	1	2	3	4	5
b. Behavior	1	2	3	4	5
10. Ensure that the proposed intervention plan is supported by the data that were collected for:					
a. Academics	1	2	3	4	5
b. Behavior	1	2	3	4	5
11. Provide the support necessary to ensure that the intervention is implemented appropriately for:					
a. Academics	1	2	3	4	5
b. Behavior	1	2	3	4	5

The skill to:	NS	MnS	SS	HS	VHS
12. Determine if an intervention was implemented as it was intended for:					
a. Academics	1	2	3	4	5
b. Behavior	1	2	3	4	5
13. Select appropriate data (e.g., Curriculum-Based Measurement, DIBELS, FCAT, behavioral observations) to use for progress monitoring of student performance during interventions:					
a. Academics	1	2	3	4	5
b. Behavior	1	2	3	4	5
14. Construct graphs for large group, small group, and individual students:					
a. Graph target student data	1	2	3	4	5
b. Graph benchmark data	1	2	3	4	5
c. Graph peer data	1	2	3	4	5
d. Draw an aimline	1	2	3	4	5
e. Draw a trendline	1	2	3	4	5
15. Interpret graphed progress monitoring data to make decisions about the degree to which a student is responding to intervention (e.g., positive, questionable or poor response).	1	2	3	4	5
16. Make modifications to intervention plans based on student response to intervention.	1	2	3	4	5
17. Use appropriate data to differentiate between students who have not learned skills (e.g., did not have adequate exposure to effective instruction, not ready, got too far behind) from those who have barriers to learning due to a disability.	1	2	3	4	5

The skill to:	NS	MnS	SS	HS	VHS
18. Collect the following types of data:					
a. Curriculum-Based Measurement	1	2	3	4	5
b. DIBELS	1	2	3	4	5
c. Access data from appropriate district- or school-wide assessments	1	2	3	4	5
d. Standard behavioral observations	1	2	3	4	5
19. Disaggregate data by race, gender, free/reduced lunch, language proficiency, and disability status	1	2	3	4	5
20. Use technology in the following ways:					
a. Access the internet to locate sources of academic and behavioral evidence-based interventions.	1	2	3	4	5
b. Use electronic data collection tools (e.g., PDAs)	1	2	3	4	5
c. Use the Progress Monitoring and Reporting Network (PMRN)	1	2	3	4	5
d. Use the School-Wide Information System (SWIS) for Positive Behavior Support	1	2	3	4	5
e. Graph and display student and school data	1	2	3	4	5
21. Facilitate a Problem Solving Team (Student Support Team, Intervention Assistance Team, School-Based Intervention Team, Child Study Team) meeting.	1	2	3	4	5

THANK YOU!

Appendix H

Tiers I and II Critical Components Checklist

School: ______________________ **Target Area:** ☐ Reading ☐ Math ☐ Behavior

Window: ☐ 1 ☐ 2 ☐ 3 **Grade Level (if applicable):** ____________

<u>Directions</u>: For each selected target area and grade-level, please use the scale provided to indicate the degree to which each critical component of a Problem-Solving/Response to Intervention (PS/RtI) model is present in paperwork (i.e., permanent products) derived from data meetings (i.e., meetings in which the PS/RtI model is used to examine Tier I and/or II instruction). See the attached rubric for the criteria for determining the degree to which each critical component is present in the paperwork.

Component	**0 = Absent** **1 = Partially Present** **2 = Present** **N/A = Not Applicable**	**Evidence/Comments**
Problem Identification		
1. Data were used to determine the effectiveness of core instruction	0 1 2	
2. Decisions were made to modify core instruction or to develop supplemental (Tier II) interventions	0 1 2	
3. Universal screening (e.g., DIBELS, ODRs) or other data sources (e.g., district-wide assessments) were used to identify groups of students in need of supplemental intervention	0 1 2	
Problem Analysis		
4. The school-based team generated hypotheses to identify potential	0 1 2	

Component	**0 = Absent** **1 = Partially Present** **2 = Present** **N/A = Not Applicable**	**Evidence/Comments**
reasons for students not meeting benchmarks		
5. Data were used to determine viable or active hypotheses for why students were not attaining benchmarks	0 1 2	
Intervention Development and Implementation		
6. Modifications were made to core instruction		
a. A plan for implementation of modifications to core instruction was documented	0 1 2 N/A	
b. Support for implementation of modifications to core instruction was documented	0 1 2 N/A	
c. Documentation of implementation of modifications to core instruction was provided	0 1 2 N/A	
7. Supplemental (Tier II) instruction was developed or modified		
a. A plan for implementation of supplemental instruction was documented	0 1 2 N/A	
b. Support for implementation of supplemental instruction was documented	0 1 2 N/A	

Component	0 = Absent 1 = Partially Present 2 = Present N/A = Not Applicable	Evidence/Comments
c. Documentation of implementation of supplemental instruction was provided	0 1 2 N/A	
Program Evaluation/RtI		
8. Criteria for positive response to intervention were defined	0 1 2	
9. Progress monitoring and/or universal screening data were collected/scheduled	0 1 2	
10. A decision regarding student RtI was documented	0 1 2	
11. A plan for continuing, modifying, or terminating the intervention plan was provided	0 1 2	

Additional Comments:

Appendix I

Florida PS/RtI Project Data Collection, Entry, and Analysis Plan

Measure	Collection Timeline												Collection Method & Responsible Personnel	Data Entry Method & Responsible Personnel	Analysis Frequency
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul			
Primary Training Surveys & Skill Assessments															
Beliefs Survey	pre/post					post			post				Administered at trainings by RCs/Coaches	Uploaded via scantron by GAs	3 x year
Direct Skill Assessments	pre/post Skill Set A					pre/post Skill Set B			pre/post Skill Set C				Administered at trainings by RCs/Coaches	Uploaded via scantron by GAs	3 x year Tied to training schedule
Perceptions of Practices Survey	T1								T2				Administered at trainings by RCs/Coaches	Uploaded via scantron by GAs	2 x year
Perceptions of Skills Survey	T1								T2				Administered at trainings by RCs/Coach	Uploaded via scantron by GAs	2 x year

													es		
School Personnel Satisfaction Survey	T1					T2			T3				Administered at trainings by RCs/Coaches	Uploaded via scantron by GAs	3 x year
Training Evaluation Survey	X					X			X				Administered at trainings by RCs/Coaches	Uploaded via scantron by GAs	3-4 x year Tied to training schedule
Training & Technical Assistance Logs															
Coaches Technical Assistance Logs*	X	X	X	X	X	X	X	X	X	X	X	X	Coaches track activities and hours	Coaches fill out web-based form (weekly or monthly option)	Monthly
Coaches Training Logs*	X	X	X	X	X	X	X	X	X	X	X	X	Coaches track activities and hours	Coaches fill out web-based form (weekly or monthly option)	Monthly

Measure	Collection Timeline												Collection Method & Responsible Personnel	Data Entry Method & Responsible Personnel	Analysis Frequency
	Aug	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**			
Regional Coordinator Technical Assistance Logs	X	X	X	X	X	X	X	X	X	X	X	X	RCs track activities and hours	RCs fill out web-based form (weekly or monthly option)	Monthly
Regional Coordinator Training Logs	X	X	X	X	X	X	X	X	X	X	X	X	RCs track activities and hours	RCs fill out web-based form (weekly or monthly option)	Monthly
Implementation Integrity Measures															
Critical Components Checklist (Tier III)*	Pre					Rand. select cases to check					Post		Coaches fill out form; Same pre-selected students from PST Meetings	Coaches send to GAs for data entry	2 x year
Intervention Integrity Log*	X	X	X	X	X	X	X	X	X	X	X		School personnel track minutes and foci of ix;	Web-based entry by coaches tied to	Monthly

													Same pre-selected students from PST Meetings & additional randomly selected 10-20% for T3; All students for T2	student ID	
Modified RtI Needs Assessment (SAPSI)	T1					T2				T3			School-based team fills out form	Coaches send to GAs for data entry	3 x year

Measure	Collection Timeline												Collection Method & Responsible Personnel	Data Entry Method & Responsible Personnel	Analysis Frequency
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul			
Problem-Solving Team Meeting Checklists: Initial & Follow-Up*	X	X	X	X	X	X	X	X	X	X	X		Collected at meetings by coaches; Students pre-selected	Coaches send to GAs for data entry	Monthly
Tiers I & II Critical Components Checklist*	Pre										Post		Coaches fill out form	Coaches send to GAs for data entry	2 x year
School Demographics															
School Demographics (Students; NCLB categories & gender)*	X										X		District contact/coaches collect from district/school databases	District data contact or coaches send to Project staff	2 x year
School Personnel Demographics (# of	X												District contact/coaches collect from district/school	District data contact or coaches	Annually

staff in FTE)*													databases	send to Project staff	
School Level Student and Systemic Outcomes															
SAT-10/FCAT*											X		District contact/coaches collect	Send file to Project staff	Annually
DIBELS/CBM*		X				X			X				District contact/coaches collect	Send file to Project staff	3 x year
ODRs (total & disaggregated by NCLB categories & gender)*	X	X	X	X	X	X	X	X	X	X	X		District contact/coaches collect	Send file to Project staff	Monthly
PST Referrals (total & disaggregated by NCLB categories & gender)*	X	X	X	X	X	X	X	X	X	X	X		District contact/coaches collect	Send file to Project staff	Monthly

Measure	Collection Timeline												Collection Method & Responsible Personnel	Data Entry Method & Responsible Personnel	Analysis Frequency
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul			
ESE Referrals (total & disaggregated by NCLB categories & gender)*	X	X	X	X	X	X	X	X	X	X	X		District contact/coaches collect	Send file to Project staff	Monthly
ESE Evaluations (total & disaggregated by NCLB categories & gender)*	X	X	X	X	X	X	X	X	X	X	X		District contact/coaches collect	Send file to Project staff	Monthly
ESE Placements (total & disaggregated by NCLB categories & gender)*	X	X	X	X	X	X	X	X	X	X	X		District contact/coaches collect	Send file to Project staff	Monthly

Absences (total & disaggregated by NCLB categories & gender)*	X	X	X	X	X	X	X	X	X	X	X		District contact/coaches collect	Send file to Project staff	Monthly
Retentions (total & disaggregated by NCLB categories & gender)*											X		District contact/coaches collect	Send file to Project staff	Annually
Other Process Measures															
Coaching Evaluation Survey*						X					X		Administered to building staff by coaches	Uploaded via scantron by GAs	2 x year
Technical Assistance Evaluation Survey – Pilot & Statewide Training Versions				X						X			Administered by RCs and Coaches to TA recipients	Uploaded via scantron by GAs	2 x year
Other Outcome Measures															
Neutral Interview*	X										X		Administered to randomly selected school staff by	Scored and entered into database	2 x year

													RCs	by GAs	
Parent Satisfaction Survey*	X										X		Facilitated by coaches and/or mailed to parents	Uploaded via scantron by GAs	2 x year

Appendix J

Residual Variance Assumption Analyses Summary

Normality of Residuals Assumption: School Type Predicting PS/RtI Implementation Model

Multilevel models assume that the residuals of predicted values are normally distributed. In order to examine this assumption, two visual analyses were conducted. First, a visual analysis of the scatterplot of the residuals from the predicted mean PS/RtI implementation scores (as measured by the *Tiers I and II Critical Components Checklist*) was examined to determine the extent to which the residuals appeared to be normally distributed. Then, the homogeneity of variance across units (i.e., schools) was examined by analyzing the distribution of residuals across schools. A stem and leaf plot was created from the residual variances to determine the extent to which the residual variances were normally distributed.

Figure 1 includes the scatterplot of the residuals from mean PS/RtI implementation scores. A visual inspection of the scatterplot indicates a relatively normal distribution of the residual variances. Figure 2 includes a stem and leaf plot of the residual mean PS/RtI implementation scores across schools. A visual inspection of the stem and leaf plot indicates a relatively normal distribution of the residual variances across schools. These two visual analyses suggest a relatively normal distribution of the residuals, indicating the assumptions were met for this multilevel model.

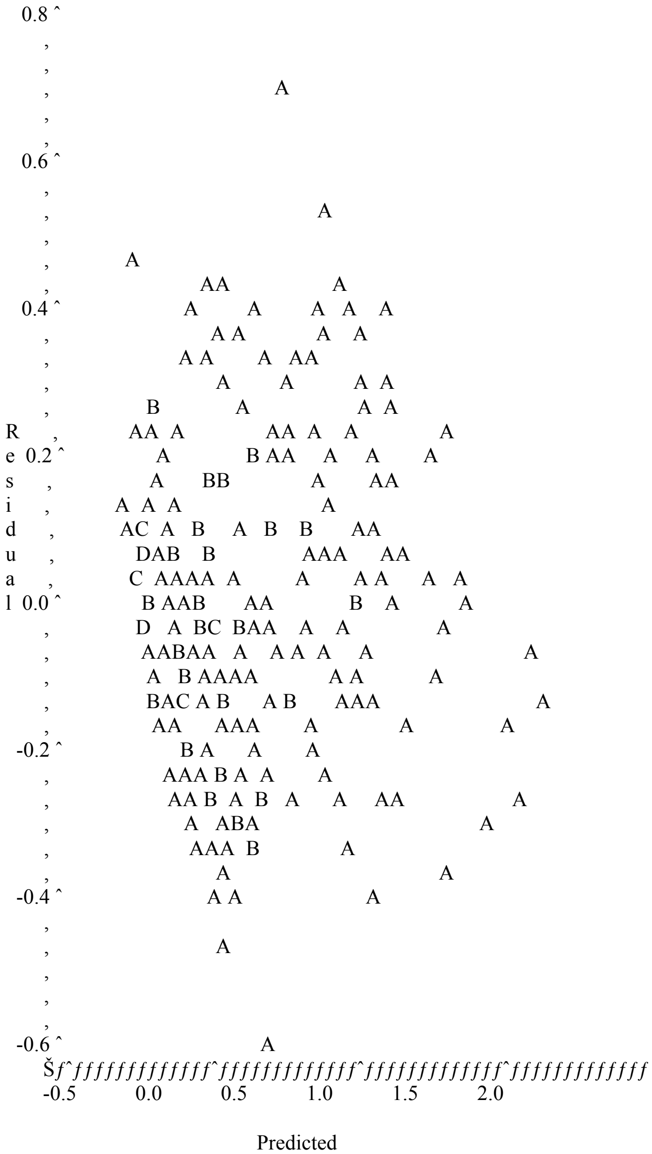

Figure 1. Scatterplot of Predicted Mean PS/RtI Implementation Score Residuals.

```
Stem Leaf
     6 9
     6
     5
     5 2
     4 7
     4 00001344
     3 5568
     3 111133334
     2 67778
     2 000022223344
     1 566788889999
     1 000000001222344
     0 555667777778888899
     0 01111223333334444
    -0 44443333322221111100
    -0 99888877766665555555
    -1 4444333322222221110000
    -1 98777766555
    -2 4443221110
    -2 988777666665555
    -3 4433221110
    -3 865
    -4 111
    -4 5
    -5
    -5
    -6 0
       ----+----+----+----+-
    Multiply Stem.Leaf by 10**-1
```

Figure 2. Distribution of Level 1 Residual Variance Across Level 2 Units for PS/RtI Implementation Model.

Normality of Residuals Assumption: Educator Variables Predicting PS/RtI Implementation Model

Multilevel models assume that the residuals of predicted values are normally distributed. In order to examine this assumption, two visual analyses were conducted. First, a visual analysis of the scatterplot of the residuals from the predicted mean PS/RtI implementation scores (as measured by the *Tiers I and II Critical Components Checklist*) was examined to determine the extent to which the residuals appeared to be normally distributed. Then, the homogeneity of variance across units (i.e., schools) was examined by analyzing the distribution of residuals across schools. A stem and leaf plot was created from the residual variances to determine the extent to which the residual variances were normally distributed.

Figure 3 includes the scatterplot of the residuals from mean PS/RtI implementation scores. A visual inspection of the scatterplot indicates a relatively normal distribution of the residual variances. However, two or three outliers seem to be present. Figure 4 includes a stem and leaf plot of the residual mean PS/RtI implementation scores across schools. A visual inspection of the stem and leaf plot indicates a relatively normal distribution of the residual variances across schools. These two visual analyses suggest a relatively normal distribution of the residuals, indicating the assumptions were met for this multilevel model.

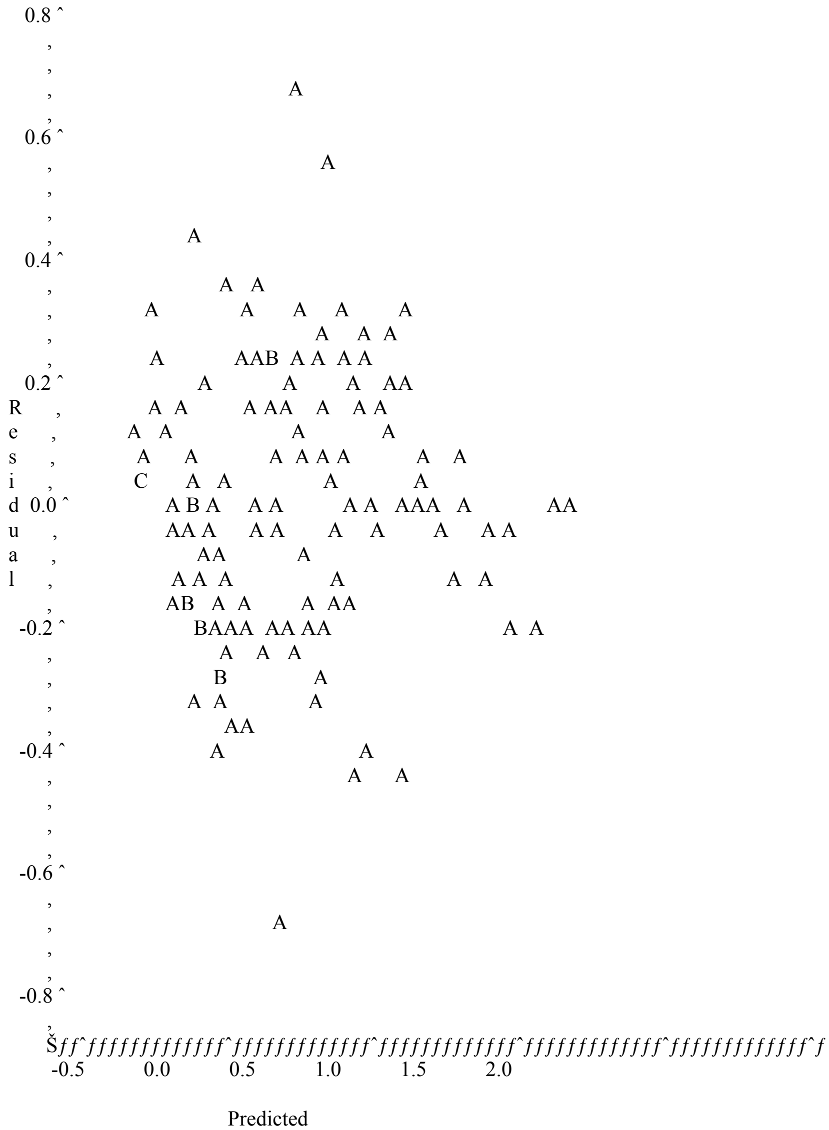

Figure 3. Scatterplot of Predicted Residual PS/RtI Implementation Score Residuals.

```
Stem Leaf
  6 7
  5 6
  4 3
  3 1333356
  2 11223334456668
  1 001344566788999
  0 001112233345578888889
 -0 976655444333222211100
 -1 999888866544311110
 -2 8776532221000
 -3 76332
 -4 4421
 -5
 -6 9
    ----+----+----+----+-
Multiply Stem.Leaf by 10**-1
```

Figure 4. Distribution of Level 1 Residual Variance Across Level 2 Units for PS/RtI Implementation Model.

Normality of Residuals Assumption: PS/RtI Implementation Predicting DIBELS PSF Model

Multilevel models assume that the residuals of predicted values are normally distributed. In order to examine this assumption, two visual analyses were conducted. First, a visual analysis of the scatterplot of the residuals from the predicted mean DIBELS kindergarten PSF scores was examined to determine the extent to which the residuals appeared to be normally distributed. Then, the homogeneity of variance across units (i.e., schools) was examined by analyzing the distribution of residuals across schools. A stem and leaf plot was created from the residual variances to determine the extent to which the residual variances were normally distributed.

Figure 5 includes the scatterplot of the residuals from mean DIBELS kindergarten PSF scores. A visual inspection of the scatterplot indicates a relatively normal distribution of the residual variances. However, three outliers seem to be present. Figure 6 includes a stem and leaf plot of the residual mean DIBELS kindergarten PSF scores across schools. A visual inspection of the stem and leaf plot indicates a relatively normal distribution of the residual variances across schools. These two visual analyses suggest a relatively normal distribution of the residuals, indicating the assumptions were met for this multilevel model.

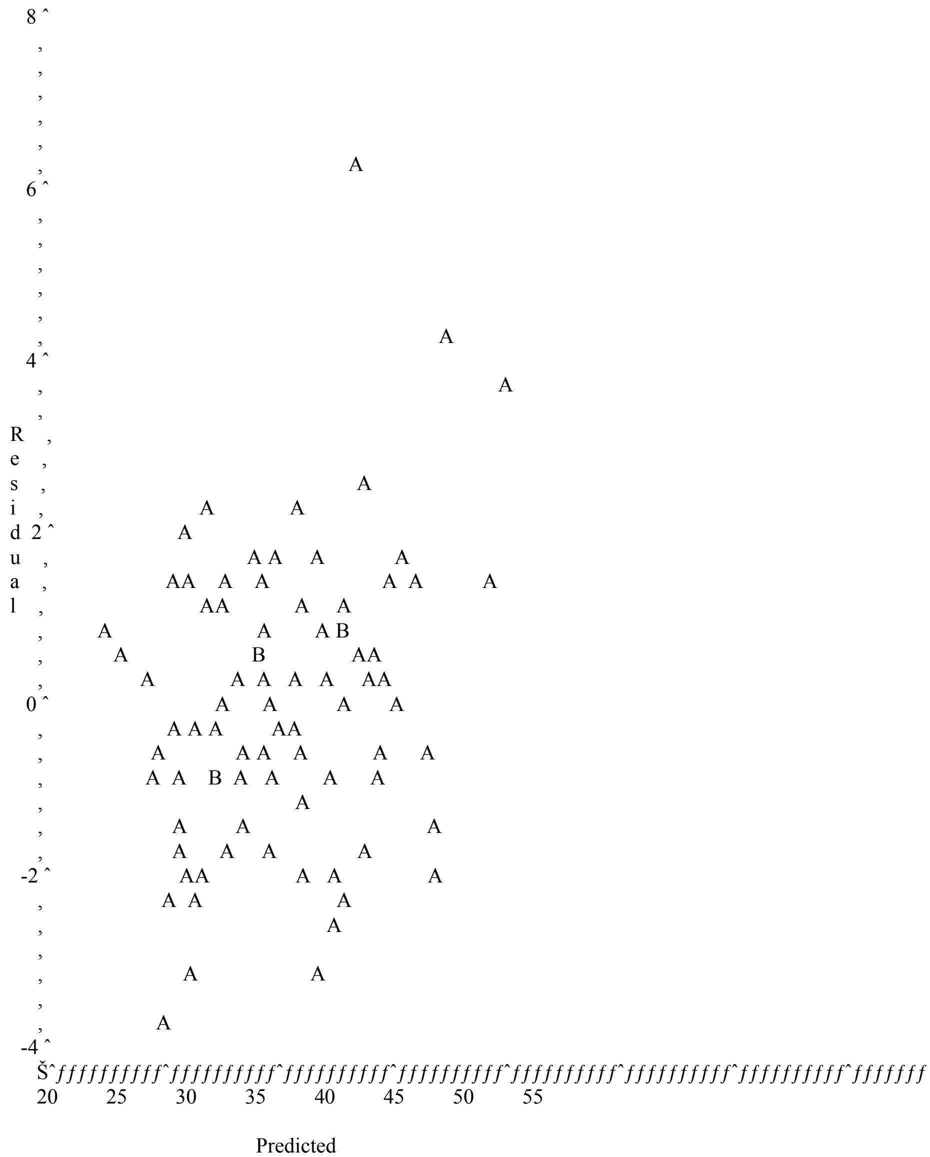

Figure 5. Scatterplot of Predicted Residual DIBELS PSF Score Residuals.

```
Stem Leaf
   5 6
   5
   4
   4 0
   3 9
   3
   2 5
   2 224
   1 56788
   1 0112334444
   0 557788
   0 0233333344444
  -0 4444333322111
  -0 8887765
  -1 33200
  -1 988655
  -2 43220
  -2 76
  -3
  -3 5
  -4 10
     ----+----+----+----+
```

Figure 6. Distribution of Level 1 Residual Variance Across Level 2 Units for DIBELS PSF Model.

Normality of Residuals Assumption: PS/RtI Implementation Predicting DIBELS NWF Model

Multilevel models assume that the residuals of predicted values are normally distributed. In order to examine this assumption, two visual analyses were conducted. First, a visual analysis of the scatterplot of the residuals from the predicted mean DIBELS kindergarten NWF scores was examined to determine the extent to which the residuals appeared to be normally distributed. Then, the homogeneity of variance across units (i.e., schools) was examined by analyzing the distribution of residuals across schools. A stem and leaf plot was created from the residual variances to determine the extent to which the residual variances were normally distributed.

Figure 7 includes the scatterplot of the residuals from mean DIBELS kindergarten NWF scores. A visual inspection of the scatterplot indicates a relatively normal distribution of the residual variances. However, one outlier seems to be present. Figure 8 includes a stem and leaf plot of the residual mean DIBELS kindergarten NWF scores across schools. A visual inspection of the stem and leaf plot indicates a relatively normal distribution of the residual variances across schools. These two visual analyses suggest a relatively normal distribution of the residuals, indicating the assumptions were met for this multilevel model.

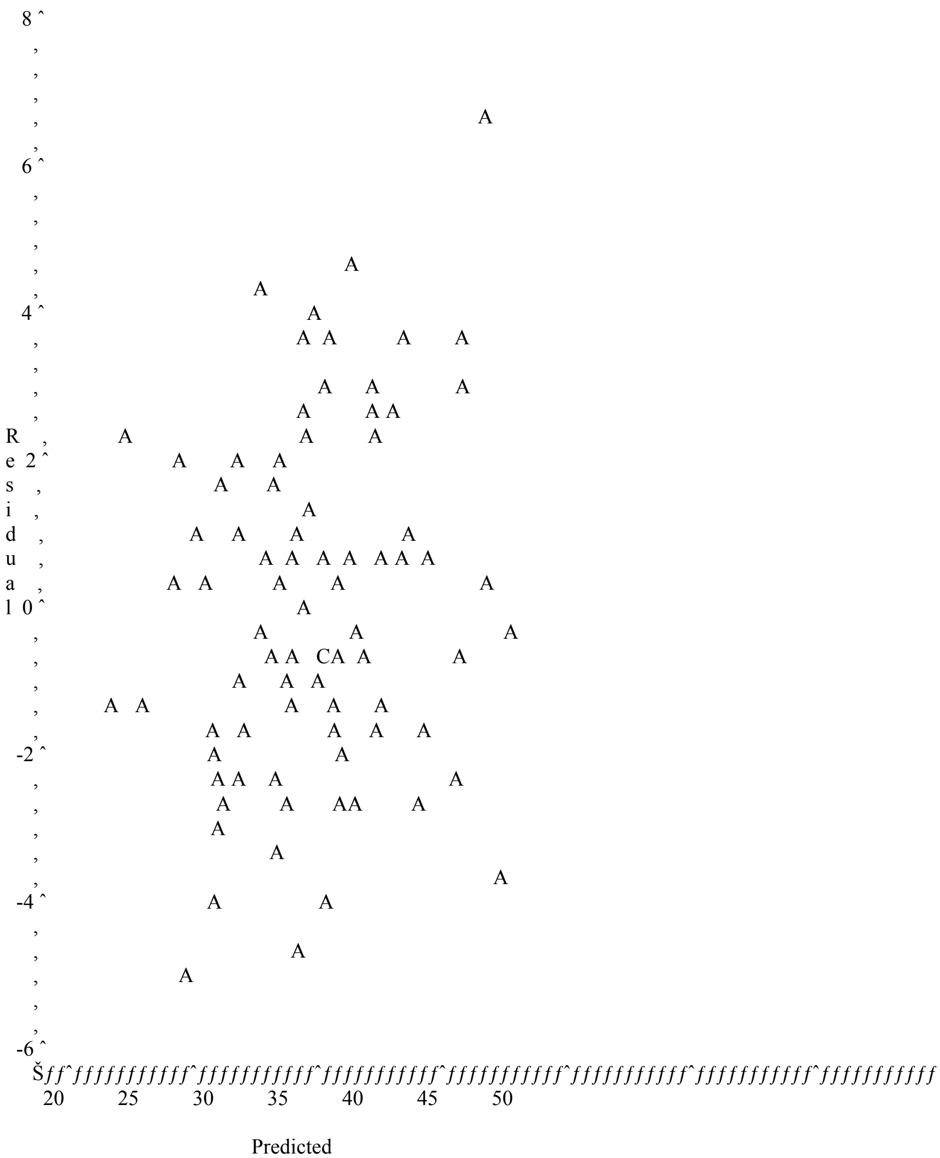

Figure 7. Scatterplot of Predicted Residual DIBELS NWF Score Residuals

```
Stem Leaf
 5 8
 5
 4
 4 01124
 3 8
 3 0112
 2 78
 2 0014
 1 5789
 1 01112334
 0 55567
 0 1133444
-0 111
-0 97777665
-1 4433330000
-1 98765
-2 432
-2 99966
-3 3
-3
-4 410
-4 96
-5 3
   ----+----+----+----+
```

Figure 8. Distribution of Level 1 Residual Variance Across Level 2 Units for DIBELS NWF Model.

Normality of Residuals Assumption: PS/RtI Implementation Predicting Rate of Office Discipline Referrals (ODRs) Model

Multilevel models assume that the residuals of predicted values are normally distributed. In order to examine this assumption, two visual analyses were conducted. First, a visual analysis of the scatterplot of the residuals from the predicted mean rate of office discipline referrals (ODRs) was examined to determine the extent to which the residuals appeared to be normally distributed. Then, the homogeneity of variance across units (i.e., schools) was examined by analyzing the distribution of residuals across schools. A stem and leaf plot was created from the residual variances to determine the extent to which the residual variances were normally distributed.

Figure 9 includes the scatterplot of the residuals from mean rate of office discipline referrals. A visual inspection of the scatterplot indicates a relatively normal distribution of the residual variances. However, two or three outliers seem to be present. Figure 10 includes a stem and leaf plot of the residual mean rate of office discipline referrals across schools. A visual inspection of the stem and leaf plot indicates a relatively normal distribution of the residual variances across schools. These two visual analyses suggest a relatively normal distribution of the residuals, indicating the assumptions were met for this multilevel model.

```
    40 ˆ
       ‚
       ‚
       ‚
       ‚                                         A
    30 ˆ
       ‚
       ‚
       ‚
       ‚
    20 ˆ
       ‚                                          A
       ‚
       ‚               A    A                 A
       ‚             A         A
    10 ˆ          A           AA
 R     ‚           A     A       AA
 e     ‚      AA B          A   A AA
 s     ‚           A          A  A               A
 i     ‚    AAABA B   A      CA      A
 d   0 ˆ      ABCCBDB B DA A    BA  B    A
 u     ‚       ACBC ABABC A AA   BA A   A
 a     ‚         AA   CAA  AA    AA       A
 l     ‚         A   AA C AA   A   A
       ‚              A      A
   -10 ˆ                                  A
       ‚               A    A      A
       ‚
       ‚                  A
       ‚
   -20 ˆ
       ‚
       ‚
       ‚
       ‚
   -30 ˆ
       ‚                             A
       ‚
       ‚
       ‚
   -40 ˆ
       ‚
       Šˆƒƒƒƒƒƒƒƒƒƒˆƒƒƒƒƒƒƒƒƒƒˆƒƒƒƒƒƒƒƒƒƒˆƒƒƒƒƒƒƒƒƒƒˆƒƒƒƒƒƒƒƒƒƒˆƒƒƒƒƒƒƒƒƒƒˆƒƒƒƒƒƒƒƒƒƒˆƒƒƒƒƒƒƒƒˆ
       -10        0        10        20        30        40        50        60

                                  Predicted
```

Figure 9. Scatterplot of Predicted Residual Rate of Office Discipline Referral (ODR) Score Residuals

```
Stem Leaf
   3 3
   2
   2
   1 59
   1 002244
   0 55566667777999
   0 00000011111111111111111222223333333
  -0 44443333332222222222222221111111111111111100000000
  -0 9877766665555555
  -1 2220
  -1 7
  -2
  -2
  -3 1
     ----+----+----+----+----+----+----+----+---
  Multiply Stem.Leaf by 10**+1
```

Figure 10. Distribution of Level 1 Residual Variance Across Level 2 Units for Rate of Office Discipline Referral (ODR) Model.

Normality of Residuals Assumption: PS/RtI Implementation Predicting Rate of Placements in Special Education Model

Multilevel models assume that the residuals of predicted values are normally distributed. In order to examine this assumption, two visual analyses were conducted. First, a visual analysis of the scatterplot of the residuals from the predicted rate of placements in special education was examined to determine the extent to which the residuals appeared to be normally distributed. Then, the homogeneity of variance across units (i.e., schools) was examined by analyzing the distribution of residuals across schools. A stem and leaf plot was created from the residual variances to determine the extent to which the residual variances were normally distributed.

Figure 11 includes the scatterplot of the residuals from mean rate of placements in special education. A visual inspection of the scatterplot indicates a relatively normal distribution of the residual variances. However, one outlier seems to be present. Figure 12 includes a stem and leaf plot of the residual mean rate of placements in special education across schools. A visual inspection of the stem and leaf plot indicates a relatively normal distribution of the residual variances across schools. These two visual analyses suggest a relatively normal distribution of the residuals, indicating the assumptions were met for this multilevel model.

```
  3 ˆ
    ,
    ,
    ,                    A
    ,
    ,
    ,
  2 ˆ
    ,
    ,
    ,
    ,                A
    ,            A          A                 A
R   ,                   A       A
e 1 ˆ                   A    A                 A
s   ,         A A  A             A   A   A        A A
i   ,                A A A     C A
d   ,                AA            AA
u   ,      A      A           A   A       A   A
a   ,            AAA     AA            A
l   ,         BA   BA    A AAA  A        A      A A
  0 ˆ     A     B  A  AC    B   A B   A   B
    ,      A     A     A   B     B  A      A       A
    ,           AA  A AA  A  A           A     A          A
    ,     A       A       AA  A A    BA  A
    ,             B   A A   AA   A  A A    A     A        A
    ,                  A  AB      A       A
    ,             A       A      A
 -1 ˆ              A       A    A                 A  A
    ,
    ,                                A
    ,           A     A       A
    ,                     A
    ,
    ,
 -2 ˆ
    ,
    Šƒƒˆƒƒƒƒƒƒƒƒƒƒƒƒƒˆƒƒƒƒƒƒƒƒƒƒƒƒƒˆƒƒƒƒƒƒƒƒƒƒƒƒƒˆƒƒƒƒƒƒƒƒ
      0         5        10       15       20       25

                         Predicted
```

Figure 11. Scatterplot of Predicted Residual Rate of Placements in Special Education Score Residuals

```
Stem Leaf
  26 2
  24
  22
  20
  18
  16
  14 3
  12 799
  10 2666
   8 01455008
   6 00289023469
   4 0473
   2 0011344815678
   0 02445567789244556 99
  -0 8742221077422100
  -2 99655995443320
  -4 9887644319764321
  -6 9752776432
  -8 8787
 -10 500
 -12 63
 -14 263
     ----+----+----+----+
 Multiply Stem.Leaf by 10**-1
```

Figure 12. Distribution of Level 1 Residual Variance Across Level 2 Units for Rate of Placements in Special Education Model.