

Introduction:

Problem Solving/Response to Intervention and Data-Based Systems Change

An effective public education system is fundamental to the United States' ability to make significant social and economic contributions in the global marketplace. Recent legislative and policy mandates have increased the pressure on educators to produce students with the knowledge and skills to compete internationally. The No Child Left Behind Act (NCLB) of 2002 was authorized by Congress to hold schools accountable for the educational outcomes of ALL students. NCLB requires states to ensure that all students, including those who are disadvantaged, achieve pre-determined levels of academic proficiency. A central focus of NCLB is the requirement for the use of research-based practices in the selection of curriculum and pedagogy to increase the percentage of students who demonstrate proficiency on statewide assessments. The Individuals with Disabilities Education Improvement Act (IDEIA) of 2004 also requires the use of data-based decision-making and evidence-based practices to improve student outcomes. IDEIA requires schools to demonstrate that students who do not respond to evidence-based interventions that have been delivered over a reasonable period of time are considered for eligibility for special services under the category of Specific Learning Disability (SLD; IDEIA Regulations, 2006). Furthermore, schools must demonstrate lack of response through frequently administered assessments directly tied to standards or benchmarks.

More recently, the Obama administration released its blueprint for the reauthorization of the Elementary and Secondary Education Act (ESEA; the original name for No Child Left Behind) which encourages the development of incentives for states to create and adopt rigorous educational standards and data-based accountability systems. According to *Blueprint for Educational Reform 2010: The Reauthorization of the Elementary and Secondary Education Act* recommendations, schools should be required to evaluate student progress toward performance targets based on whole-school and subgroup achievement analysis as well as graduation rates to

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61.2% of school districts surveyed indicated that they have fully implemented or are in the process of district-wide implementation of RtI.

Nationally, a three-tiered, data-based decision-making model is typically referred to as the RtI model. Florida PS/RtI Project staff, however, view examining student RtI across the three tiers as the fourth step in the problem solving process. Therefore, Project staff refer to PS/RtI whenever discussions about the data-based decision-making model occur.

guide their educational efforts. The blueprint also suggests that schools that meet their performance targets should be recognized and rewarded, while those that do not should be required to implement increasingly intensive research-based strategies until student performance targets are met.

The aforementioned national legislative mandates and policy recommendations indicate a shift toward the use of data-based decision-making in the selection of curriculum and instructional methods. Schools, districts, and states across the nation must develop and coordinate policies, processes, and procedures to effectively respond to these mandates. Problem Solving/Response to Intervention (PS/RtI) is one model designed to assist educators in making data-based decisions to improve the impact of services provided to students **receiving national attention (Spectrum K12 School Solutions, 2010)**.

The Problem Solving/Response to Intervention (PS/RtI) Model

The PS/RtI model uses assessment to facilitate the development and implementation of evidence-based interventions in the general education environment and to determine the extent to which students respond to the interventions through continuous progress monitoring (Batsche et al., 2005). When making educational decisions using a PS/RtI model, educators typically progress through four major stages referred to as the **problem-solving process**: problem identification; problem analysis; plan development and implementation; and program evaluation/response-to-intervention (Bergan & Kratochwill, 1990). When addressing problems for a student or group of students, educators use the four stages of problem solving

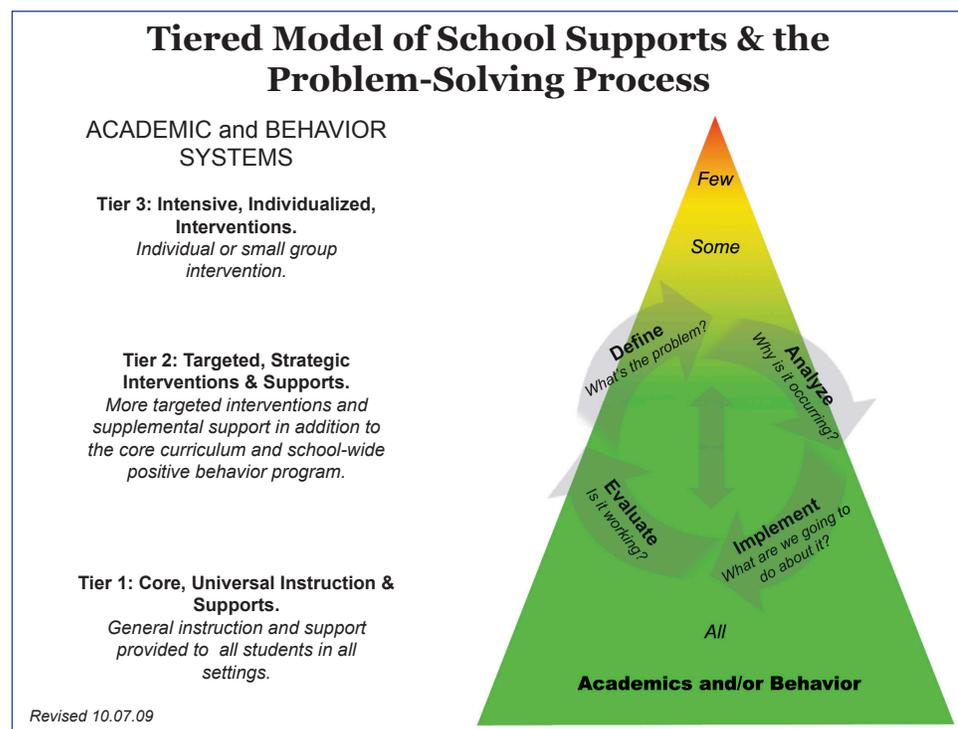


Figure 1. Problem Solving/Response to Intervention (PS/RtI) Model Diagram.

to systematically (1) identify the expected skill(s) the student or students is/are expected to perform (i.e., replacement behavior), (2) determine what factors are inhibiting performance of the target skill(s), (3) develop and implement a plan to remove barriers to learning, and (4) evaluate student RtI (Batsche et al., 2005).

In addition to providing a framework for making decisions about student performance, the PS/RtI model includes mechanisms to help schools use their finite resources more efficiently. To increase the efficiency with which schools provide services, interventions are available for both individual and groups of students. Interventions available to students are typically categorized into three tiers that intensify and focus the interventions (Batsche et al., 2005). Although the procedures vary somewhat for academics and behavior, the three-tier conceptual model is similar across both domains (see Figure 1 above). A brief description of the three-tier model based on Batsche et. al's (2005) conceptualization follows:

- **Tier I instruction** involves providing scientific, research-based instruction to all students (i.e., core instruction). Educators administer universal screening assessments three to four times per year and examine existing data to determine the overall impact of Tier I instruction, and screen for individual students not responding to the curriculum.
- **Tier II intervention** (i.e., supplemental intervention) involves additional time and/or skill focus in the curriculum for students identified as at-risk through universal screening and other available information. Students receiving Tier II interventions are monitored more frequently (e.g., monthly) to facilitate decision-making regarding the effectiveness of the intervention plan developed through the problem-solving process. Although the majority of students should respond to Tier I and II instruction, estimates indicate that approximately 5% will require more intensive, targeted interventions available through Tier III services.
- **Tier III interventions** typically involve highly idiosyncratic, intensive services that require the expertise of a diverse team of trained individuals. Educators monitor progress frequently (e.g., weekly) to make decisions regarding student RtI. Interventions developed for students receiving Tier III services may or may not involve resources outside of what can be realistically expected in the general education setting. When the resources (e.g., time, materials, personnel) required exceed what is available through general education, then the student is considered for special education eligibility. Thus, in the PS/RtI model, special education becomes a mechanism for providing additional, intensive services to students, not a location where students diagnosed with disabilities go to receive instruction.

In summary, the PS/RtI model serves several functions. First, the PS/RtI model serves as a decision-making framework for determining what services should be provided to students. Learning problems can be systematically identified early in the problem cycle, analyzed, and addressed to improve student outcomes at the group and individual levels. Second, the PS/RtI model functions as an indicator of the frequency and intensity of services needed for all students to be successful.

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By evaluating student RtI at three tiers of intervention, educators are able to more efficiently use their finite resources and improve student performance in the general education environment. In other words, a tiered system of intervention allows educators to solve less severe problems in the general education environment and invest additional resources in those students who require more intensive intervention to achieve educational benchmarks, thereby meeting the mandates of NCLB (2002) and IDEIA (2004).

Applications of the PS/RtI model in school settings suggest that implementation results in improved student and systemic outcomes (e.g., Burns, Appleton, & Stehouwer, 2005). The majority of researchers examining the impact of PS/RtI implementation, however, have focused on a small number of sites (e.g., a few schools) and a limited number of variables likely to impact results. Questions remain about how to scale-up implementation of the model to ensure that results demonstrated in previous applications are realized by large numbers of schools. It is with scaling-up of PS/RtI practices in mind that the Florida Department of Education created the Florida Problem Solving/Response to Intervention Project.

The Florida Problem Solving/Response to Intervention Project

The Florida Problem Solving/Response to Intervention Project, a joint venture between the Florida Department of Education and the University of South Florida, was developed to facilitate and evaluate scaling-up of PS/RtI practices across geographically and demographically diverse schools in the fourth largest state in the nation. The Project was created to (1) provide professional development across the state on the PS/RtI model and (2) systematically evaluate the impact of PS/RtI implementation in a limited number of demonstration sites.

The purpose of the statewide training component of the PS/RtI Project is to provide school-based teams with the knowledge and skills required to implement the model effectively. Project staff provide training on topics that include historical, legislative, and practical reasons that educators are being asked to implement PS/RtI practices; how to systematically facilitate the adoption of new practices, and the skills necessary to implement the PS/RtI model. Florida school districts send leadership teams to participate in these trainings on a voluntary basis. Project staff provide only limited technical assistance and follow-up to these school-based teams, and collect limited data to evaluate the impact of statewide training.

The purpose of the Project's demonstration site component is to provide a comprehensive evaluation of the impact of PS/RtI implementation on districts, buildings, educators, and students. Participants include 34 pilot schools in seven demonstration districts across the State of Florida. The pilot schools and demonstration districts are considered demographically and geographically representative of Florida's school districts (e.g., size, racial/ethnic diversity, socio-economic levels). Although the training curriculum is similar to what is used in the statewide training component mentioned above, additional funding, technical assistance, and follow-up support are being provided to these sites by Project staff to facilitate implementation and evaluation of the model. All demonstration sites are elementary schools,

and are targeting reading, mathematics, and/or behavior when implementing the model. Matched comparison schools are included to provide a referent against which the impact of the Project can be evaluated. The comparison schools do not receive funding or technical support from Project staff.

Implementation of the PS/RtI model across the demonstration districts and pilot schools is overseen by the Project's Leadership Team which is composed of two Project Directors, one Project Leader, three Regional Coordinators in charge of training and technical assistance, and two Project Evaluators. Members of this team are responsible for Project planning, administrative duties, and providing training, technical assistance, and support to demonstration sites to facilitate implementation and evaluation of PS/RtI practices. **School-Based Leadership Teams** (SBLTs), district-based **PS/RtI Coaches**, and district leadership personnel are the primary focus of professional development provided by the three Regional Coordinators and Project staff in the identified demonstration sites. The Project Evaluators provide ongoing assistance to the aforementioned demonstration site personnel to facilitate data collection for the Project's evaluation model.

In addition to the professional development and support received from Project staff, each demonstration district is receiving funding for one full-time PS/RtI Coach for every three pilot schools (i.e., up to a maximum of two coaches for six pilot schools). The PS/RtI Coaches are employees of the participating school districts, but are supported by funding provided by the Project. The Coaches are trained by Project staff on the PS/RtI model and strategies for facilitating implementation in schools. Each coach is responsible for data collection and for providing supplemental training, technical assistance, and follow-up support to the SBLTs and district leadership at the demonstration sites. Coaches also assist in providing training on PS/RtI practices and procedures to school staff in each of the buildings for which they are responsible. Coaches work directly with the Project's Regional Coordinators and Evaluators to facilitate the implementation and evaluation of PS/RtI practices. Additional information on the Project is available online at <http://floridarti.usf.edu>.

Facilitating Implementation Through a Systems Change Approach

Working within a PS/RtI framework requires that all school staff, including teachers, principals, and student services personnel, change the way in which they have traditionally functioned. This change necessitates development of the motivation and capacities of educators to work collaboratively toward a common goal (Hargreaves, 1997). Educators must understand the need for the change, have the skills required to meet the needs of the organization, and be confident in their ability to function within the changing environment (Curtis, Castillo, & Cohen, 2008; Fullan, 2001; Hall & Hord, 2006). Previous educational reform initiatives have often failed due to policy makers not meaningfully involving educators in decision-making or considering schools in the context of their larger social systems (Sarason, 1990). To succeed where other reform efforts have failed, it is critical that systems change principles be applied to facilitate implementation of new practices, includ-

School-Based Leadership Teams: SBLTs are comprised of approximately six to eight staff members selected to take a leadership role in facilitating PS/RtI implementation in a school.

PS/RtI Coaches: PS/RtI Coaches work with SBLTs as well as other school- and district-level personnel to facilitate PS/RtI implementation. PS/RtI Coaches have expertise in data-based decision-making, systems issues, and consultation.

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ing PS/RtI practices. One systems change model adopted by Project staff to facilitate implementation of PS/RtI typically involves three stages: Consensus Development, Infrastructure Building, and Implementation (Batsche, Curtis, Dorman, Castillo, & Porter, 2007; Kurns & Tilly, 2008). Educators employing this change model seek to develop consensus among key stakeholders who are responsible for utilizing PS/RtI practices, build the necessary infrastructure and support mechanisms to promote and sustain PS/RtI practices, and then promote the successful implementation of problem solving across a three-tiered service delivery framework. A brief description of each of the three components of the change model is provided below.

Consensus Development

A fundamental principle of engaging in educational systems change is the development of consensus among key stakeholders in a school (e.g., principal, teachers, instructional support personnel, student services personnel) regarding the implementation of any new initiative (Curtis et al, 2008; Hall & Hord, 2006). Curtis et al. suggest that a commitment from the majority (80% is often suggested but is not universally agreed upon) of stakeholders in a building should be obtained before proceeding with implementation of new practices. Because the level of commitment from school personnel regarding the new initiative will likely impact the extent to which implementation occurs, it is necessary to evaluate factors that may impact buy-in from educators. Educators will typically embrace new practices when they understand (1) the need for the change, and (2) they either have the necessary skills to implement the initiative or will receive the support required to develop the skills. See Figure 2 below for a visual representation of the change model.

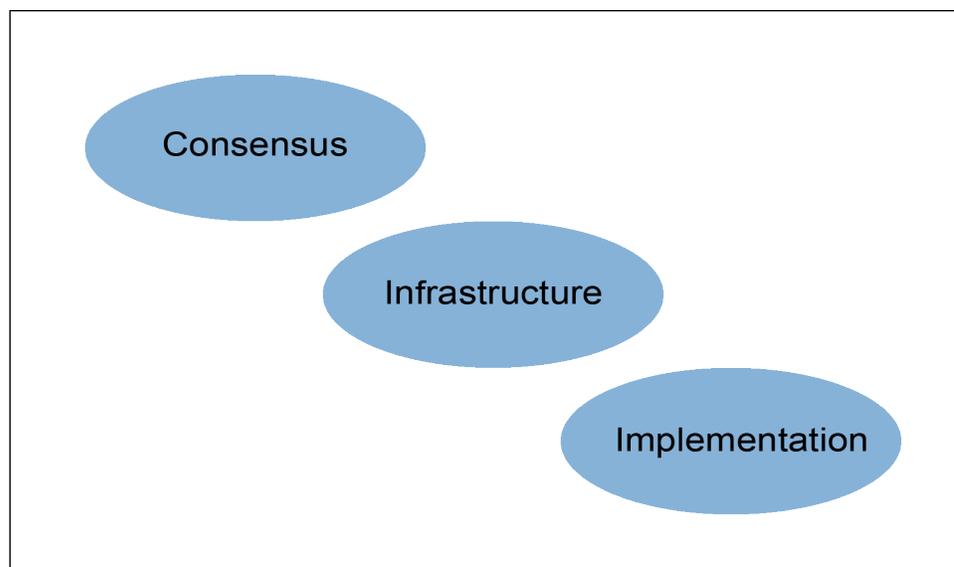


Figure 2. Components of Systems Change Model Adopted by the Florida PS/RtI Project.

The PS/RtI Project staff targets educator perceptions regarding the need for PS/RtI implementation in two ways. First, educators are involved in discussions that focus on challenging common beliefs regarding the nature of student learning, as well as the validity and usefulness of traditional assessment and intervention practices in schools. Traditional approaches to assessing student learning and its impact on instruction are contrasted with research that provides support for use of the PS/RtI model to identify and address learning gaps. The second method involves sharing and discussing the student outcome data from educators' schools in the context of increasing accountability demands from federal (e.g., NCLB) and state sources (e.g., Florida's **AYP** criteria). In addition to targeting educators' perceptions regarding the need for PS/RtI practices, Project staff communicate the level of support schools will receive from the Project and demonstration districts to enable educators to develop the skills necessary to facilitate implementation of the model.

Given that education is a dynamic system in which both internal (e.g., student demographics, district goals, staff turnover) and external (e.g., legislation, funding, policy) pressures are continually evolving, the level of consensus and support for such an initiative must constantly be evaluated and systematically targeted. Thus, the focus on stakeholder buy-in to the change process must not be thought of as a one-time event. Rather, communication with staff, the provision of professional development, and evaluation of efforts to build consensus must be ongoing, planned activities that inform implementation efforts.

Infrastructure Development

The development of infrastructure involves creating the structures required to facilitate and support implementation of the PS/RtI model. Schools have finite resources (i.e., time, personnel, funding, materials, technology) to invest in new practices. A school must examine its current goals, policies, resources, and personnel responsibilities with regard to their alignment with a PS/RtI model of service delivery. The following are common examples of structures schools must consider addressing to enhance their capacity to implement PS/RtI practices (Kurns & Tilly, 2008):

- Development/adoption of standards-based comprehensive assessment systems
- Identification of which Tier I, II, and III resources are available to teachers and the development/adoption of resources that are needed
- Alignment of existing policies and procedures to be consistent with the use of PS/RtI practices across tiers
- Development/adoption of decision rules regarding students' RtI
- Development/adoption of technology to facilitate efficient data collection and graphical display of data that is useful to teachers when making decisions about student progress
- Determination of what existing meeting times educational personnel can use to employ PS/RtI practices or how to rearrange personnel schedules to create time, AND

AYP: AYP stands for Adequately Yearly Progress. Each state was required by NCLB to develop goals for increasing the percentage of students demonstrating proficiency on statewide accountability assessments. Although the specific criteria vary across states, all states were required to demonstrate that 100% of students achieved proficiency by the 2013-14 school year.

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- Time to provide ongoing professional development (i.e., training, coaching, and follow-up support) to all educators in the building who are expected to implement the PS/RtI model.

The above examples do not comprise an exhaustive list. The extent to which schools will need to target infrastructure components depends upon the unique characteristics of buildings and districts. Although some progress toward PS/RtI implementation can occur while consensus and infrastructure issues are addressed, successful implementation cannot occur without providing stakeholders with ongoing, high quality professional development (Darling-Hammond & McLaughlin, 1995).

According to various models of school-based staff development, effective professional development practices contain some form of the following components: theory, demonstration/modeling, opportunities to practice, and collaborative reflection/feedback (Joyce & Showers, 2002; Knight, 2007). First, educators must be provided with an overview of the theoretical basis and rationale supporting the skills being taught. The purpose of this introductory information is to ensure that educators gain a firm knowledge-base from which to consult when implementing the new practice as well as to facilitate consensus regarding the importance of the new practice. Next, those with experience successfully implementing the new activities model the steps. Finally, participants are provided with opportunities to practice while receiving immediate feedback through discussion of performance.

Researchers have demonstrated that professional development models that include **coaching** in addition to the use of the aforementioned stages result in the majority of educators successfully implementing new practices (Joyce & Showers, 2002). Coaching has been found to increase the instructional capacity of schools and staff members, which is a natural prerequisite for enhancing student learning and outcomes (Neufeld & Roper, 2003). Specifically, research suggests that effective professional development must be intensive, sustained, ongoing, collaborative, and supported by modeling and collective problem-solving – all of which can be successfully facilitated by coaching (Darling-Hammond & McLaughlin, 1995). Furthermore, researchers examining the implementation of problem-solving procedures have demonstrated that using direct training methods and providing opportunities to practice results in increased use of problem-solving practices (Curtis & Metz, 1986; Zins & Ponti, 1996).

Research supporting the use of ongoing professional development and coaching models necessitates the development and implementation of a systematic professional development plan. Although research suggests that using the aforementioned effective professional development practices will result in successful skill building and implementation of new practices, large-scale efforts require systematic evaluation activities. The number of trainers, coaches, districts, and schools involved decrease the likelihood that professional development will be delivered consistently. Inclusion of a long-term plan for professional development and evaluating skill mastery allows educators facilitating PS/RtI implementation to systematically deliver and make adjustments to professional development activities as necessary.

The term coaching has been defined in a number of ways. For the purpose of this manual, coaching is defined as the process of providing educators ongoing training, technical assistance, and support to facilitate PS/RtI implementation.

Implementation

Although the likelihood of implementation of PS/RtI processes is enhanced when consensus and infrastructure development occurs, providing opportunities for implementation does not automatically ensure that PS/RtI practices will be adopted. Sarason (1990) purports that many educational reform initiatives fail due to a lack of implementation, suggesting a need to evaluate the extent to which critical components of PS/RtI are being implemented with integrity prior to making decisions regarding the model's impact on student outcomes.

Myriad terms for the concept of implementation integrity exist in the literature (e.g., intervention integrity, intervention fidelity, fidelity of implementation). Regardless of the language used, the big idea is that educators must evaluate the extent to which components of an innovation, initiative, or intervention (i.e., whatever the constellation of practices being implemented) are implemented prior to evaluating outcomes. For the purpose of this manual, the term implementation integrity is used to describe the extent to which PS/RtI practices are implemented in schools.

To determine current levels of implementation, educators must first decide how to define and measure **implementation integrity (Noell & Gansle, 2006)**. This determination requires that educators identify the critical elements of the PS/RtI model and at what level of detail to assess those critical elements. Research indicates that focusing on critical elements at an intermediate level of implementation offers an optimal balance between reliably evaluating implementation integrity and making evaluation feasible for educators. Additionally, research has indicated that assessing critical elements at an intermediate level results in measurements that are sensitive enough to reflect variations in implementation as well as link the variations to outcomes (Noell et al., 2005). Along with identifying critical elements of implementation, educators must also determine how they will assess these critical steps. Noell and Gansle (2006) suggest that the most practical strategy for measuring components of an initiative includes utilizing both observations and permanent products.

Observation protocols are typically the most accurate method to assess extent of implementation, whereby trained observers are present during times that implementation should occur and can record which of the previously determined critical components of an innovation are present (Noell & Gansle, 2006). It must be noted that although observations can be the most accurate, this methodology is often the most time consuming and resource intensive (e.g., the time necessary for observations to be scheduled, sites to be traveled to, and meetings observed may represent significant amounts of time for observers). Permanent product reviews are typically more efficient than observations in terms of the amount of time required from data collectors. Individuals trained in permanent product (i.e., documentation) reviews are able to gather documents relevant to implementation of PS/RtI practices and review the paperwork for evidence of the predetermined critical components. However, given that this method depends on the quality and

Noell & Gansle (2006) are referenced throughout this manual when discussions of implementation integrity occur. Although the primary focus of the authors' article is on treatment integrity of interventions implemented directly with students, Project staff applied these concepts to assessment of PS/RtI implementation.

quantity of the products available to examiners, permanent product reviews could be less reliable than observation methods (Noell & Gansle, 2006). Educators' self-report is another data collection method available to individuals assessing implementation integrity. Self-report (e.g., surveys completed by educators implementing the model) is typically considered the most efficient way to collect data on implementation. However, self-report data tend to be positively biased (Noell & Gansle, 2006), which decreases the likelihood of reliable measurement. Nevertheless, interpreted in the context of this potential positive bias, self-report measures can be used to collect data regarding educators' perceptions of implementation. Taken together, observations, permanent products, and educators' self-reports can provide valuable information on the extent of implementation integrity and how implementation relates to outcomes.

The Florida Problem Solving/Response to Intervention Project's Program Evaluation Philosophy

The purpose of the demonstration site component of the Project is to evaluate the impact of PS/RtI implementation on student, educator, and systemic outcomes. Given the need to systematically facilitate change to increase the likelihood of successful implementation, Project staff also investigate the extent to which systems-change principles highlighted above are followed and result in increased levels of consensus, infrastructure development, and implementation of PS/RtI practices. Project staff have developed a number of tools to facilitate data-based inquiry and evaluation of efforts to scale-up PS/RtI. Across the Project's three years of implementation, school and district progress toward PS/RtI implementation has been formatively evaluated. Specifics on the evaluation model used, data collected, and preliminary results are beyond the scope of this manual. The reader interested in more information on these topics is referred to the Project's *Year 1* and *Year 2* evaluation reports available online at <http://floridarti.usf.edu>.

Although the specifics of the evaluation framework used are not included in this manual, it is important to consider the data-based decision-making philosophy that drives evaluation efforts. Project staff believe that both formative and summative program evaluation must be used to improve the services provided by individuals and organizations. Summative analyses address questions regarding how well an innovation (e.g., interventions, initiatives, projects) such as PS/RtI worked, and are helpful when determining whether to continue with an innovative practice. Formative analyses focus on improving the services while they are being provided in schools. Here, the question being asked is not "how well did the innovation work?" but rather "how well is it currently working?" Answering the latter question allows educators to make ongoing changes in the services being provided, as well as evaluate the impact of modifications quickly and efficiently. To help facilitate both formative and summative evaluation of PS/RtI implementation, information on the following instruments is currently available:

- Instruments useful for monitoring progress toward full PS/RtI implementation
 - ♦ *Self-Assessment of Problem-Solving Implementation (SAPSI)*
- Instruments measuring components of consensus development
 - ♦ *Beliefs Survey*
 - ♦ *Perceptions of Practices Survey*
- Instruments measuring components of infrastructure development
 - ♦ *Perceptions of RtI Skills Survey*
 - ♦ *Coaching Evaluation Survey*
- Instruments measuring implementation integrity
 - ♦ *Tier I and II Observation Checklist*
 - ♦ *Tier I and II Critical Components Checklist*
 - ♦ *Problem-Solving Team Meeting Checklists*
 - ♦ *Tier III Critical Components Checklist*

Information on additional Project instruments will be added to this manual as they become available.

Educational stakeholders involved in program evaluation of PS/RtI initiatives will have a number of factors influence decisions regarding what data collection tools and methods to use. Factors such as the specific evaluation questions asked; the time, personnel, and financial resources available to dedicate to program evaluation; and existing data collection requirements will undoubtedly play a role in the design and implementation of an evaluation plan. The information included in each section of this manual is intended to assist stakeholders in making decisions about how to evaluate scaling-up of the PS/RtI model and adapting the use of any relevant instruments to their specific circumstances.