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Staff development and leadership roles related to response to intervention levels of implementation in rural schools

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2010

Abstract

Staff Development and Leadership Roles Related to Response to Intervention

Levels of Implementation in Rural Schools

by

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MA, University of Colorado, 2003

BS, University of Nebraska, 1995

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Education

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Abstract

The concepts of professional learning communities and organizational disciplines support staff development and leadership that lead to sustainable systems. Little research has examined the ability of rural schools to achieve sustainable systems. This quantitative design study considered the relationships between predictor variables of administrative roles and staff development and the criterion variable of Response to Intervention (RtI) implementation level. Administrator roles included planning and scheduling training, participating in training, planning implementation, building knowledge and commitment, selecting RtI teams, participating on teams, promoting parental involvement, evaluating RtI, and implementing follow-up and targeted training. Staff development practices addressed commitment and support, team processes, the three-tiered system, self-assessments, evidence based practices, and monitoring and action planning. A stepwise regression was used to analyze data based on survey responses of 131 RtI team members in rural schools in the western United States. Results indicated high correlations between level of implementation and training in evidence-based practices, self-assessments, and monitoring and action-planning. Leadership roles related to building knowledge and commitment, selecting RtI team members, promoting parental involvement, and including RtI in evaluations were strong predictors of overall level of implementation as well. This study may have a significant and positive impact on social change by identifying areas for training and leadership focus. This may reduce the misallocation of funds and negative perceptions toward RtI, leading to higher quality, targeted training, better use of leadership time, and increased satisfaction and sustainability.

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Chapter 1: Introduction to the Study

Response to Intervention (RtI) is a system-wide approach to meet the needs of all learners, regardless of their ability or background. As such, RtI requires system-wide changes that support regular progress monitoring, research-based practices, and the use of data to inform ongoing instruction. To achieve this system-wide change, research suggests that school personnel may have to rethink their approaches to learning practices and partnerships (Fullan, 2006; Burdette, 2007; Mellard & Johnson, 2008). Support for RtI needs to be at the whole-school level (Mellard & Johnson, 2008), should include appropriate and sufficient staff training, and involve visible administrative support.

Colorado schools have been implementing RtI for 3 years or more. During this time, Colorado schools have implemented measures to track progress and needs of all students to provide remediation to those who are at risk of or already are falling behind. For rural schools, achieving sustainable systems change such as RtI may present a bigger challenge due to geographical isolation. Rural schools often have poorer access to resources, more limited financial resources, and greater difficulty establishing and maintaining a variety of roles within the school system than do non-rural schools (Burdette, 2007; Mellard & Johnson, 2008). This study will consider how training focuses and leadership activities within RtI systems may be related to the success of rural schools' implementation of RtI. Knowledge of these relationships will help rural schools to target specific training needs and reduce cost and time spent in staff development. By

understanding leadership roles, this study may help rural administrators provide appropriate direct supports for RtI systems change while delegating other roles.

Chapter 1 will provide a brief overview of RtI, followed by explanations of the purpose of the study, the problem statement, significance of the study, and the nature of the study. The research questions and associated hypotheses will be presented, followed by assumptions of the study, ethical issues, limitations, and key definitions. A theoretical framework will also be established.

Response to Intervention

The key components of RtI are not new to educational research and can be traced back to the 1960s (Bender & Shores, 2007). Research identifying the importance of data based decision-making processes in education was introduced into educational research literature as early as the 1970s. In the 2004 reauthorization of the Individuals with Disabilities Education Improvement Act, RtI was identified as an acceptable approach to identifying students with learning disabilities, stating that local educational agencies “may use a process to determine if a child responds to scientific, research-based intervention as part of the evaluation process” (P.L. 108-446 § 614 [b][6][A]). This reauthorization further emphasized that RtI is an acceptable alternative to the much-debated discrepancy score to identify children with learning disabilities. The U.S. Department of Education further RtI approach to ensure that a child’s suspected learning disability is not the result of inappropriate instruction. With a growing research base and

federal regulation in place, RtI is becoming a driving force in education systems within and beyond the borders of the United States.

Research has identified RtI as an effective approach to classifying students as learning disabled based on how well they respond to interventions (Bradley, Danielson, & Doolittle, 2007; Fuchs & Fuchs, 2006; Marston, 2005). Still, the current approach to RtI seeks to move beyond the realm of special education to create a school-wide initiative toward the success of all students (Wright, 2007). Gresham (2005) defined RtI as simply “the change in behavior or performance as a function of an intervention.” (p 328). This basic definition, while approaching a more accurate definition of RtI, does not provide clarity to RtI as a systems approach to student success. The most comprehensive definition of RtI is that it is an approach to use data for the allocation of resources, with the end goal to “enhance student learning for all students, and to effectively identify those who are eligible for special education services” (Jimerson, Burns, & VanDerHeyden, 2007, p 4). Greater emphasis on research-based interventions or “resources” would further enhance the effectiveness of RtI (Bradley, Danielson, & Doolittle, 2007; Fuchs & Fuchs, 2006; Marston, 2005). By understanding the RtI framework, schools will be better prepared to achieve sustainable RtI systems change.

The Six Components of RtI

Six components have been associated with establishing fidelity in RtI systems implementation: (a) system-wide commitment and support, (b) the establishment and maintenance of a team process, (c) the implementation of a three-tiered system of

delivery, (d) the implementation of evidence-based practices, (e), continual self-evaluations, and (f) monitored action-planning (Colorado Department of Education, 2008; Carrion, 2007). Key tasks within each component have been associated with effective RtI systems (see Appendix A for details). Each of these six components were considered through theory, literature, and research materials.

Paradigm Shifts in Response to Intervention

RtI presents a paradigm shift in how school staff view the role of interventions within a school system (Fuchs & Fuchs, 2006). This paradigm shift has stemmed from changing beliefs about education, including the belief that all students are able to achieve high standards when they receive effective instruction, when they have access to research-based methods, and when they receive standards-based instruction. RtI stems from all of these beliefs, and is intended to address the learning of all students. It is not simply a method for differentiating students with and without special needs. Furthermore, RtI serves as an opportunity to intervene before a student's learning deficits become severe.

The concept that interventions should occur before students reach the point of failing raises another key understanding within the RtI model, which is that interventions should occur early. Indeed, researchers have found that RtI is most successful when it occurs on initial recognition of a student's need (Bender & Shores, 2007; Colorado Department of Education, 2008; Fuchs & Fuchs, 2006; Wright, 2007). Effective interventions have also been identified by their longevity.

Once interventions are established, continual progress monitoring, in the form of collected data, has been associated with continued student progress (Shinn, 2002). Progress monitoring allows for fluid movement across a continuum of intervention services based on student progress or response to the intervention. Finally, ongoing, significant collaboration that includes family, school, and community partnerships has been associated with a sustained intervention system (Mellard & Johnson, 2008). Additionally, collaboration with family and community promote positive partnerships and informed decision-making processes through relying on a variety of sources and expertise for information (Bender & Shores, 2007; Colorado Department of Education, 2008; Mellard & Johnson, 2008). This multi-pronged approach to progress monitoring and larger-scale collaboration has been one of the key components of successful implementation of the RtI model.

The Three-tiered Model

RtI is presented as a three-tiered model of intervention and progress monitoring. The most common visual representation is a triangle (see Figure 1) (Bender & Shores, 2007; Colorado Department of Education, 2008; Jimerson et al., 2007; Mellard & Johnson, 2008). Tier one is referred to as a universal level, encompassing 80% to 90% of the student population that is screened and monitored through general classroom procedures and benchmark assessments (Colorado Department of Education, 2008; Fuchs & Fuchs, 2006; Wright, 2007). If interventions occur at this level, they are basic, class-wide approaches to improve the learning of all students and are implemented across all

students as needed. Interventions most often occur on a school or classwide, tier one level based on overall performance on benchmarking or standards-based assessments. Tier two is referred to as the targeted level and involves approximately 5% to 15% of the student population. This tier includes students identified as at-risk, academically or socially, to a degree that requires more targeted interventions or additional supports, as well as more frequent progress monitoring, to overcome these risks. The smallest population, 1%-5% of students, are part of the third tier, where special education services are addressed, and where interventions and progress monitoring are intensive, often supported at an individual or small group level, relying on more specialized interventions and professional support (Fuchs & Fuchs, 2006; Mellard & Johnson, 2008; Wright, 2007). Progress monitoring at this level is also the most intensive and frequent. Movement among the tiers is considered fluid (Colorado Department of Education, 2008). RtI is most frequently presented visually using the triangle diagram, however; other representations may be seen as well, but it is commonly agreed upon that three tiers of increasing intensity is appropriate to meet student needs (Fuchs & Fuchs, 2006; Mellard & Johnson, 2008; Wright, 2007).

The Role of School Leadership

School leadership plays a large role in the development of a school-level RtI process. School leaders are charged to identify key personnel on the student focus team. They are also required to support the continuous follow-up and assessment of implementation, training needs, and collaborative efforts (Fuchs, Fuchs, Hosp, &

Hamlett, 2003a; Glovers & DiPerna, 2007; Williams & Katsiyannis, 1998). Curriculum and instruction methods must be clearly defined to ensure that instructional and intervention practices are standards-driven and research-based. The problem solving process can then be informed by this standards and research-based approach. The problem-solving process allows teams participating in the RtI process to more effectively assess and meet student needs (Fuchs et al., 2003a). Progress monitoring then focuses on accountability and awareness of the intervention process and progress (Glovers & Albers, 2007; Glovers & DiPerna, 2007). Depending on level of intervention, the degree of progress monitoring ranges from benchmarking (assessing overall student performance two to three times per year) to weekly data management. School culture and climate, as well as family and community involvement, set the mood for successful implementation. It is imperative that the school leadership and climate hold the RtI process as valuable to the success of students within the school (Mellard & Johnson, 2008). It is also essential to involve parents and community members in this process (Colorado Department of Education, 2008).

Purpose of the Study

The purpose of this study was to identify the relationship between rural school RtI implementation and the amount and types of staff training. This study also examined the relationship between RtI implementation and the quality of rural school leaders' roles. Although research has defined the importance of the six components of RtI, little has been done to address specific training practices across each component as well as key

roles where leadership is most effective (Mellard & Johnson, 2008). Based on a perception of rural isolation and limited financial and instructional resources (Burdette, 2007), this study presents research-based guidance on which components of the RtI process require greater training focus as well as best practices for leadership participative and delegative roles, including developing and participating in the RtI team as well as evaluation and reporting on progress. A list of identified roles can be found in Appendix B. By more clearly defining training focuses within the six components and leadership roles within the RtI school-wide model, this study will help rural school staff better plan use of limited resources and achieve sustainable systems change to a RtI framework, as mandated by the State of Colorado.

Statement of the Problem

Rural schools face a significant problem in allocating and accessing sufficient appropriate training and implementing administrative supports necessary to achieve sustainable systems change evidenced by high levels of implementation within RtI model. Although professional development and leadership roles are not unique to rural schools, the challenges in these areas are more profound (Barton, 2003; Burdette, 2007). Rural schools are faced with geographic isolation, making access to training more difficult. In addition to this isolation, rural schools often cannot qualify for large group discounts, requiring them to be more creative with school partnerships and funds allocations to make training affordable. In terms of leadership roles, rural school leaders often play several roles within their buildings including principalship of Pre-K-12 levels,

athletic directors or coaches, and often instruction as well. Because administrators are already playing numerous roles within their systems, additional roles must be prioritized and delegated. RtI is a comprehensive systems change that requires consistent implementation of all aspects of the model. As such, this systems approach calls for targeted training in all aspects of RtI, as well as visible administrative support and evaluation of school-wide processes. Rural schools are often faced with unique challenges in instructional practices that support systems change and inclusion and advancement of students (Barton, 2003). RtI is an instructional model that specifically addresses a proactive approach to teaching all students, regardless of ability, in an inclusive setting. Fidelity of intervention and instruction (implementation that follows precise prescribed methods and demonstrates a measure of progress based on these prescribed methods) are often managed within rural schools through administrative actions to include professional development as well as formative and summative evaluations (Mellard & Johnson, 2008). However, resources and training available and accessed by rural schools is often lower than those in more urban areas. This reduced access to resources and training can result in negative perceptions and ineffective practices surrounding the implementation of an RtI model (Barton, 2003; Burdette, 2007; Mellard, 2008). More research is needed on the RtI practices in rural schools, specifically, on the ability of rural schools to achieve sustainable systems change through targeted training and clarification of leadership roles within the RtI framework (Barton, 2003; Burdette, 2007; Mellard & Johnson, 2008).

Significance of the Study

This research has the potential to impact rural school models. Through administrative practices, overall staff training, and supports, RtI implementation may reduce overidentification of students who qualify for special education services and achieve early intervention. It will help to guide school focus and programming. This research can lead to a positive change in rural school leadership approaches by clarifying the significance of appropriate planning and implementation practices that best meet the needs of schools in a rural setting. Being better informed throughout planning and implementation may lead to better use of resources based on more targeted training, clearer definition of key roles throughout systems change and sustainable implementation, and higher fidelity of implementation based on staff confidence and value of the RtI framework. Furthermore, this study has the potential to reduce time and money spent throughout the planning, implementation, and follow-up cycle by identifying targeted areas of focus, particularly related to costly training and materials expenses and staff time spent outside of classroom instruction. Positive social changes include clearer understanding and reduced frustration related to state-mandated implementation of RtI, more effective support from administration, and better outcomes for students resulting from improved and consistent levels of implementation.

Nature of the Study

In this study, I employed a quantitative design to assess the relationship between RtI implementation, leadership roles, and staff training among RtI team members, teacher

leaders, and administrators from rural schools. Leadership participation and hours of staff training were seen as the predictor variables of RtI. These variables were assessed on a survey that was designed and rated by a panel of rural superintendents and principals prior to a pilot study. The survey identified leadership roles based on the state RtI model and the six components addressed in measures of RtI implementation, and measured the number of hours that participants engaged in professional development with experts, in-school staff development, and follow-up training. These surveys were piloted before a full study design was proposed to establish validity and reliability.

Research Questions and Hypotheses

RQ1: Are individual school leadership roles: planning training, scheduling training, participating training, planning implementation, building school commitment/knowledge, problem solving recruitment, problem solving participation, parental involvement, RTI evaluations, regular follow-ups and targeted follow-ups, related to total implementation level? If so, are certain roles more closely related to higher levels of implementation than others?

H₀1: School leadership roles: planning training, scheduling training, participating training, planning implementation, building school commitment/knowledge, problem solving recruitment, problem solving participation, parental involvement, RTI evaluations, regular follow-ups and targeted follow-ups are not related to total implementation level.

H_A1: School leadership roles: planning training, scheduling training, participating training, planning implementation, building school commitment/knowledge, problem solving recruitment, problem solving participation, parental involvement, RTI evaluations, regular follow-ups and targeted follow-ups are related to total implementation level, with some roles showing higher relation than others.

RQ2: Are amounts of training in the six components of RtI, including comprehensive commitment, team process, 3-tiered system, self-assessment, evidenced based practice and action planning, related to overall level of implementation? If so, does training in certain components evidence higher relation to level of implementation than others?

H₀2: Training in comprehensive commitment, team process, 3-tiered system, self-assessment, evidenced based practice and action planning will not be related to total implementation level.

H_A2: Training in comprehensive commitment, team process, 3-tiered system, self-assessment, evidenced based practice and action planning will be related to total implementation level, with some areas demonstrating stronger relationship than others.

Assumptions of the Study

I assumed that all participating schools met the definition of a rural school, and that the sample size was an appropriate and sufficient representation of the population. I also assumed that the Self-Assessment Problem-Solving Inventory, volume 2 (SAPSI v.2) was understood by participants, and that it was administered and scored correctly.

I also assumed that additional survey questions sufficiently targeted training and leadership roles.

Ethical Issues

Permission to conduct research was obtained from the Walden University Institutional Review Board (IRB) prior to conducting the research. Permission to solicit participants was obtained from each district, or Board of Cooperative Educational Services (BOCES) superintendent/executive director. After consent was provided, building level principals were given an internet link for staff to access the survey. Completion of the survey was expected to take no longer than one hour. All participants are adults and were of their rights, as well as the nature and purposes for this study, prior to participating in the survey. Participants were that they have the right to withdraw from the study at any time during survey completion. Surveys cannot be withdrawn after submittal because they are not associated with the participant in any way. No vulnerable populations were targeted for this study and no there are no risks associated with participation in this study.

Limitations of the Study

This study was limited in its sample. The number of participants was limited based on the number of schools within the State of Colorado, which meet the rural definition criteria as well as the two years of implementation criteria. Results are not intended to generalize to larger schools that are geographically isolated as they do not meet the full definition of rural schools.

This study was also limited in its instrumentation. The SAPSI-v2 now reflects vocabulary specific to State models of implementation, but is not currently in use state-wide, thus not all staff may be familiar with the self-assessment tool. It is important to note that the State is adopting a revised version of the SAPSI to assess levels of implementation. It is expected to be piloted in the 2009-2010 school year. Also, the professional development survey questions only targeted hours of training within the six components and cannot be used to directly consider qualitative aspects of training. In addition, the leadership participation survey questions did not evaluate quality of participation and cannot be used to assess leadership performance. Lastly, these measures rely on self-report. It was assumed through recruiting procedures that all respondents had at least 2 years knowledge of RtI and self-evaluations using State established procedures.

Definitions

Comprehensive Commitment and Support: A component of the RtI model that focuses on training, establishing and supporting building level procedures, and provision of visible support systems.

Conducting Self-evaluations: A component of the RtI model that focuses on regularly evaluating team and intervention processes to identify progress training and adjustment needs.

Curriculum-based Measures (CBM): Brief assessment of student performance consisting of standardized instructions, timed assessments, scoring rules, standards for

evaluating performance and running records of student progress (Hosp, Hosp, & Howell, 2007).

Differentiated Instruction: proactively planned instruction that includes a variety of instructional approaches and techniques as well as presenting a variety of opportunities for students to express what they have learned according to individual learning styles and/or preferences, to increase student depth of learning (Tomlinson, 2003).

Establishing and Maintaining a Team Process: A component of the RtI model that focuses on building a problem solving team; establishing procedures for team operations and intervention planning, and progress reporting; as well as following these set processes.

Fidelity of Implementation: Providing instruction or intervention in the specific way it was designed to be implemented (Mellard & Johnson, 2008).

Implementing Evidence-based Practices: A component of the RtI model that focuses on the use of team practices, progress monitoring, and interventions that are grounded in current research.

Implementing a Three-tiered System of Delivery: A component of the RtI model that focuses on delivery of services or interventions to students at varying levels of intensity from universal to intensive based on specific learning needs.

Intensive Intervention: Interventions, within the third tier of the RtI framework, that specifically target an individuals needs and that occur at a more intense frequency of at least three times per week up to daily (CDE, 2008)

Leaders/Leadership: For the purpose of this study, leaders and leadership refer to administrative staff including principals, assistant/vice principals, and/or superintendents, unless the leader is specifically referred to differently (example: teacher leader).

Leadership Roles: The activities that school leaders engage in that specifically support or address RtI implementation

Leadership Roles Survey: An independent measure survey designed to identify roles administrators may fill within the RtI system.

Least Restrictive Environment (LRE): “To the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities are educated with children who are not disabled, and special classes, separate schooling, or other removal of children with disabilities from the general education environment occurs only when the nature or severity of the disability is such that the child cannot achieve academically in the general education classes with the use of supplementary aides and services.” (20 U.S.C. § 1412 (a)(5)(A), IDEIA, 2004).

Level of Implementation: a descriptive measure used within the dependant variable tool (SAPSI v.2) that rates key items within levels of implementation based on how regularly they are practiced within the RtI system. These included “Not Started”, “In Progress”, “Achieved”, and “Maintaining”.

Monitoring and Action-planning: A component of the RtI model that focuses on regularly monitoring progress and planning based on clear data.

Problem-Solving Team: A diverse group of school professionals that meet with referring teachers to help them address the needs of students and to help them design interventions to help those students succeed academically and/or behaviorally (Wright, 2007).

Professional Development: For the purpose of this study, professional development refers to activities that target learning or relearning professional skills related to the implementation of the six components of the RtI framework. This includes training lead by experts in the content area, building or district level professional development activities, and targeted follow up training activities.

Professional Learning Community: “A professional learning community is composed of collaborative teams whose members work interdependently to achieve common goals linked to the purpose of learning for all.” (Dufour, Dufour, Eaker, & Many, 2006, p 3).

Progress Monitoring: The use of targeted, curriculum-based assessments, or probes, to gather data on student performance over time, to determine effectiveness of interventions (Bender & Shores, 2007).

RtI(RtI): “systematic use of assessment data to most efficiently allocate resources to enhance student learning for all students and to effectively identify those who are eligible for special education services.” (Jimerson, Burns, & VanDerHeyden, 2007, p4)

Rural Effect: A belief that rural isolation directly impacts learning systems to a greater degree than basic family demographics and socio-economic status. (Hammond & Ingalis, 2003).

Rural School: the district's average daily attendance is less than 600 students, or the county the district is within has a population density less than 10 persons per square mile, and which have a locale code (distance from a city) of 6 or 7 (U.S. Department of Agriculture, 2004, U.S. Department of Education, 2008).

Self-Assessment of Problem-Solving Inventory, version 2 (SAPSI-v2): Dependent measure used to determine level of implementation of RtI. Norm-referenced survey designed to assess problem solving practices related to the implementation of RtI within a school's operating systems. (Carrion, 2007)

Survey of Training Hours: Independent measure used to determine hours of training each respondent has had within each of the six components of RtI.

Targeted Intervention: Interventions that target a specific student's needs within a classroom or intervention setting, individually or as part of a group, and which occurs at least on a weekly basis (Colorado Department of Education, 2008).

Universal Intervention: Interventions conducted at the classroom level across all students but to meet the needs of a targeted individual or group of students. (Colorado Department of Education, 2008).

Theoretical Framework

RtI can be viewed as a paradigm shift or significant systems change. As such, RtI relies on several theoretical frameworks including a shift in organizational approaches based in Senge's (2006) systems thinking theory, an increased awareness of individual learning capacities supported by Gardner's (2006) multiple intelligences theory, and the theory of professional learning communities as defined by Dufour (2005) and expanded on by Fullan (2005).

The theoretical framework for this study is based on Senge's (2006) principles of systems thinking and sustainable systems change and Gardner's (2006) different learning styles. Next, sustainable systems change and professional leadership is addressed through the presentation of an overview of Dufour's (2005) professional learning communities Fullan's (2005) professional learning communities and sustainable systems change. These theoretical frameworks will be synthesized throughout this chapter to present an overview of guiding concepts specific to RtI.

System Thinking

Senge's (2006) theory on systems thinking speculated that organizational success is dependent on member engagement in the learning process and holistic (as opposed to piecemeal) goals. This theory posited that success must not rely on inter-organizational competitions, personnel ranking, and rewards and punishment for performance outcomes.

Eight inefficient elements of current systems. Senge (2006) identified eight inefficient elements of current systems management. This included management by

measurement, compliance-based culture that promotes fear of failure, managing outcomes through rigid scoring and ranking systems with little recognition of individual needs and abilities, and establishment of right vs. wrong mentality instead of partnering to identify overall sources, patterns and factors. A mandate for uniformity in current practices discounts diversity and suppresses conflict, targeting predictability and control. Excessive competition yields a sense of distrust and can reduce innovation. These result in a loss of the whole, fragmented focus and innovations that become stagnant. The RtI approach to education focuses on removing the rigid scoring of disabled or not, and focuses more on individual needs and abilities. It narrows the search for strengths and weaknesses to the targeted sources to effectively identify student struggles and yield overall systems improvement. The three-tiered systems removes and concept of uniformity and opens the door to differentiated instruction, individual focus, and improved learning.

The five disciplines. Senge's (2006) theory of systems thinking proposed a need to move into a direction of cohesion, acknowledgement of the individual within the team and learning organization. To achieve this type of cohesion, Senge developed five disciplines aimed at achieving a concept of profound knowledge within operating systems based on what he called "core learning capabilities" (p.129).

Personal mastery is the first discipline and is essential to being a lifelong learner. It is basically the achievement of a high level of proficiency and understanding allowing the person to consistently recognize desired outcomes and problem solve effectively to

achieve these outcomes (Senge, 2006). Personal mastery starts with developing our interests and determining what really matters to us. Senge (2006) noted that to achieve personal mastery there must be a reciprocal commitment between individuals and the organization. If this discipline was applied to the RtI model it would mean ensuring that the learning of all students is addressed to a degree that they achieve a depth of knowledge at least necessary to master academic goals and standards. In the RtI model, this personal mastery would include understanding student deficits and how they learn as well as remediating deficits in a manner that leads to skills mastery. Addressing deficits effectively is achieved through varying the intensity of intervention or support based on the individual needs. In the first discipline, then, the concept of RtI is dedication to personal mastery for all students regardless of individual learning style or ability. Staff development would require training in recognizing and remediating learning deficits. Staff development would include training in differentiated instruction, recognition of learning styles, and progress monitoring and reflection.

The second discipline, mental models, was defined as the “deeply engrained assumptions, generalizations, or even pictures or images of how we understand the world and how we take action” (Senge, 2006, p 8). For a system to function effectively as a whole, it is important to understand the mental models of each individual, to develop shared views of individuals, the organization, and their larger roles within a community, and to develop a stronger awareness of these mental models to maintain a shared vision while valuing the individual. Part of developing the shared mental model is placing

stronger value on others views, exposing our own thinking, and making our thinking open to the influence of others. To create a consistent mental model within RtI systems change, training must be supported, consistent, and apparent. This level of support is often accomplished through leadership participation. Definitions should be clearly stated and resources identified. Concerns and misconceptions should be addressed openly and readily to improve staff confidence in the model and promote greater fidelity of implementation. Training should focus on understanding and sharing the mission and vision of RtI as well as developing a common view and support for RtI as a significant part of the educational system. When all parts of the system understand a mental model equally, it is more likely to be implemented with fidelity and sustainability.

Mental models lead into this shared vision, which is the third discipline. Creating a shared vision of the goal of an organization leads to the creation of a “genuine” vision, based on intrinsic and shared desires to succeed, unlike the common practice of developing superficial vision statements, which are often based around the goals of leadership or a perceived target audience. Superficial visions statements lead to temporary motivation without the ownership necessary to make a vision succeed over the long term. When a shared vision exists, all members are vested its success, based on set principles and guidelines that motivate everyone to strive toward their shared view of the future of the organization and their role within it. This vision cannot be dictated and may indeed be somewhat fluid as the organization and its contributors grow and change. In a school the vision must be shared among administration, staff, students, families, and the

supporting community. As with the mental model, shared vision for the long-term outcome of RtI implementation will lead to greater fidelity and sustainability.

Team learning is the fourth discipline. Senge (2006) specifically identified dialogue as the essential ingredient in achieving team learning and achievement. Dialogue involved the free flow of information, without biased assumptions, among members of a group. Through the process of thinking as a group and collaborating to achieve the end goal, the entire group can achieve a level of knowledge unachievable at the individual level. A common barrier noted here is the defensive nature people often take in a dialogue when opinions or understandings differ. Emphasis on putting assumptions aside allows us to move beyond this but requires practice and encouragement of unbiased members. In a school setting this includes practices like co-teaching, cross-curricular instruction, learning groups, and differentiated instruction and demonstration. Students who participate in team learning benefit from instruction that relies on the strengths and contributions of the group rather than the targeted presentation through instructional communication. When considering the six components of RtI identified earlier, the fourth discipline would suggest clear support and training in establishing a problem-solving team that understands the RtI process, and is able to share meaningful dialogue leading to improved student outcomes, would result in a stronger school system.

Senge (2006) emphasized the importance of the practice of the five disciplines as an interactive model where one cannot function without the other. In fact, the fifth

discipline, systems thinking, cannot be achieved to any degree without the other four. He further emphasized that practicing the five disciplines should never look exactly the same from one organization to the other. This would be the establishment of mandated expectations on how a learning organization runs whereas the very cornerstone of Senge's theory is the recognition of a learning organization as a growing and changing entity that must develop its own identity. Each organization is defined by how it functions as a whole through collaborative dialogue and team learning, the sharing of a genuine vision, the creation of shared but fluid mental models of how and why the entity exists, the value of personal mastery for every individual within the organization, and the overall systems thinking. If these disciplines were strictly defined in their functioning and applications, systems growth would be stunted through setting external standards that do not drive the intrinsic goals of the whole.

It is imperative that systems be considered as a whole not based on individual parts or patterns. Recognizing patterns within a system are important. The focus needs to be pervasive – looking at the full picture of how a learning organization operates together, including how all of the parts interact and affect each other. Senge (2006) noted that experiments have shown children learn and apply systems thinking quickly and naturally. RtI then, is a whole system functioning to meet the needs of the individual. It is important to develop a depth of knowledge regarding all aspects of RtI, to include system wide support, establishing and maintaining team processes, establishing a three-tiered system, implementing evidence based practices, conducting self-evaluations, and

monitoring and action-planning. Systems thinking would suggest that a depth of training must be provided in all areas and that leadership must demonstrate full supports across all areas by participating in training, and promoting awareness of a shared systems view allowing for opportunity to examine and challenge personal views to improve system performance. In essence, training is essential to fully understanding and implementing the process and leadership must be present, promote a shared vision, and demonstrate clear understanding and support for the whole system.

Multiple Intelligences

While functioning effectively as a whole dictates a paradigm shift toward system thinking, recognition of individual needs is equally important. Each student's individual needs, skills, and learning strengths and interests must be considered when selecting the appropriate research-based intervention. Although specific deficits determine targets for the intervention, the interventionist must also understand how the learner can be more successful. Gardner's (2004) theory of multiple Intelligences supports interventions that recognize individual learning styles through practices such as differentiated and multisensory instruction. Gardner presented his theory of schooling, based in multiple intelligences, as a paradigm shift where education is driven by individual differences, availability of choice, performance-based evaluations, deep exploration of topics, and similar methods often seen within differentiated instruction and individualized intervention (Gardner, 2004).

The eight intelligences. Gardner (2004) identified eight intelligences based on these criteria. The first two are relied on heavily within education. The next three are based within the realm of arts, and the final two are referred to as personal intelligences. The eighth intelligence is referred to as naturalistic intelligence (Gardner, 2006).

Criteria for determining intelligence has relied heavily on assessments that consider performance in a set of skills, often culturally based, and which are predetermined to be related to cognitive abilities (Gardner, 2006). These assessments provide limited variety in expression but are relied on heavily to determine a student's potential, including the availability of services either for remediation or expansion of knowledge for students identified as disabled or gifted (Gardner, 2004). Gardner challenged this theory, proposing that there are multiple intelligences expressed based on one's intrinsic and extrinsic strengths, learning, and expressive preferences. He based his theory on extensive research on prodigies, idiots savants, normal youth and adults, a variety of experts, and diverse cultures. Based on this research, Gardner presented the following definition of intelligence: "A human intellectual competence must entail a set of skills of problem solving enabling the individual to resolve genuine problems or difficulties that he or she encounters and, when appropriate, to create an effective product and must also entail the potential for finding or creating problems thereby laying the groundwork for the acquisition of new knowledge" (Gardner, 2004, p. 60-61). The first two intelligences currently relied on in education included linguistic and logical-mathematical intelligences. The arts-based intelligences include musical, body-

kinesthetic, and spatial intelligences; and the personal intelligences include interpersonal and intrapersonal intelligences.

Educational implications of multiple intelligences. Initially, Gardner developed the theory of multiple intelligences from the standpoint of a psychologist, recognizing that current intelligences identifiers were too rigid to cover the span of human skill and expression (Gardner, 1999). Although he identified the impact of multiple intelligences within the field of education as requiring more broad learning and instructional approaches, he did not anticipate the degree to which educators would accept his theory and develop instruction based on their interpretations. As a result, he later published clearer suggestions for the use of his theory within the education realm (Gardner, 2004; Gardner, 2006).

Gardner (2006) identified key educational implications based on his theory. First, he communicated that education needs to shift to an individually centered system. Traditional instruction and assessments rely heavily on the first two intelligences: linguistic and mathematical. The need for individualized systems does not mean that every student needs individualization. Nor does every student need evaluation of functioning within the intelligences. These traditional methods may be continued, but with more awareness of individuality. Addressing individuality in learning is best accomplished through methods such as differentiated instruction and models such as RtI. If Gardner's guidance is followed, not all students require additional supports to learn within their strengths. These are the students who would fall into the first RtI tier – the

universal tier. However, some students require more targeted or strategic support. For these students, problem solving and remediation considering individual intelligences or learning styles are necessary to improve achievement. Training in differentiation, learning styles, and research-based intervention are necessary to accomplish individualized systems.

Gardner (2004) identified three key roles needed to achieve individualization. The first is an assessment specialist. This person helps to analyze student strengths, weaknesses, and needs, to provide research-based data supporting improved student achievement. This role is similar to intervention specialists, within the RtI model, who analyzes student difficulties and recommends appropriate interventions (Wright, 2007). The next role is the “student-curriculum broker” (Gardner, 2006, p 56). This person is responsible for helping bridge the gap between the curriculum presentation and the student’s understanding. In the RtI model this role may vary based on training needs and intervention types, but typically is the person who designs, delivers, and progress monitors response to the intervention (Wright, 2007). The final role Gardner recommended was the “school-community broker” (Gardner, 2006, p 57). This person identifies and implements the use of community resources including community outreach, mentorships, volunteer programs, parent outreach/communications, and any other community resources that may help in the implementation of interventions. This is a common role for administrators and would suggest that for RtI success, administrators

must openly support and solicit additional support for successful implementation (Mellard & Johnson, 2008).

Professional Learning Communities in Systems Change

Fullan (2001) discussed the forces of change through professional learning communities (PLCs), within school systems, as ultimately a change in school culture. For this change to occur in public schools, it must permeate the organization, and include the development of leadership traits within the organization itself. A PLC cannot be effective when it is the result of one or two charismatic leaders that rally the forces (Fullan, 2001).

Defining the professional learning community. Over the past decade, the term “professional learning community” has become a catch phrase, referring to school efforts to improve professional development practices. This misuse of the PLC title may result in losing sight of the real focus of professional learning communities: improved student outcomes driven by focused school practices and consistent monitoring of results (Dufour, Dufour, Eaker, & Many, 2006).

Dufour et al. (2006) clearly defined professional learning communities as focusing on commitment to the learning of every student by stating: “a professional learning community is composed of collaborative teams whose members work interdependently to achieve common goals linked to the purpose of learning for all” (p. 3). More definition is given to PLCs through identifying key components of effective implementation including collaborative teams, collective inquiry, orientation toward action, focus on continuous improvement and monitoring, and a continued focus and drive for results.

Collaboration is a systematic process that results in informed and improved classroom practices. These practices then lead to greater student outcomes. It does not end on completion of a staff development session, but extends beyond to the classroom applications, evaluation, and adjustments that lead in deeper knowledge and greater outcomes (Dufour et al., 2006; Fullan, 2001).

For a professional learning community to be effective, it must be a collective process for all participants rather than a mandate of a select few (Senge, 2006). Collective inquiry includes building in depth understanding of best practices in both teaching and learning. This collective process leads to the development of more skilled and capable staff with a greater awareness of the learning process. The collective process also emphasizes the importance of building an effective problem solving team within the RtI model.

Part of the learning process is application. Professional learning communities must be action-oriented by applying and evaluating what has been learned (Blankenstein, 2004). Goals in a PLC are moved quickly from concept to application as the most powerful way of reinforcing learning and putting information into a workable context. Taking action and applying what is learned is an imperative next step to collective inquiry. However, taking action is often the most difficult step in schools because teachers may be comfortable with what they already know (Dufour et al., 2006). In the RtI model, problem-solving teams and teachers are asked to put aside traditional models

to make way for more intensive problem solving and intervention models. Furthermore, staff members are expected to implement new strategies quickly to ensure fidelity.

The next essential component of a PLC is having a continuous focus on improvement (Dufour et al., 2006). To move beyond teaching comfort zones and challenge individual and classroom practices for improvement, organizations must promote a cycle of establishing present levels of performance followed by the development of strategies that build on strengths while improving on weaknesses. Then the developed strategies must be implemented and analyzed for effectiveness. This cycle is continuously repeated, making adjustments based on] performance as well as analysis of implementation (Dufour, 2006). The goal is not to simply learn new instructional strategies, but that effective teaching comes from the evaluation and synthesis of learned strategies that result in more effective classrooms and greater student outcomes (Fullan, 2001). This goal supports the concepts of progress monitoring as well as regular self-evaluations of systems functioning as integral roles within the RtI system, requiring targeted training for effective implementation.

The final component in effective professional learning communities is being results oriented (Dufour et al., 2006). The goal is not the learning that occurs in a professional learning community; rather it is the outcome of the implementation of learned strategies. A focus on results leads to improved goal setting and progress monitoring and serves as a motivator for school teams. Such focus allows teams and individuals the opportunity to recognize how their strengths and weaknesses function

together to work toward a common goal (Blankenstein, 2004; Dufour et al., 2006; Fullan, 2001).

Dufour, Eaker, and Dufour (2005) outlined four clarifying questions to guide professional learning communities. The first question is, “What is it we want all students to learn?” (p 15). Considering the essential characteristics of a learning community that were just presented, this question relates specifically to the collaboration and collective inquiry processes. Through analyzing current systems and conducting inquiries into needs and solutions, PLCs can effectively define goals for what they want students to learn. The next clarifying question was, “How will we know when each student has mastered essential learning?” (p 15). This question focused on the key concept of being results oriented.

The two latter questions more closely target the RtI movement: “How will we respond when a student experiences difficulty in learning”, and “ How will we deepen learning of students who have already mastered essential concepts?” (p 15). These questions call for results-driven decision making ,collaboration, collective inquiry, and action, occurring in a cycle that results in a pursuit of continuous improvement (Dufour, Eaker, & Dufour, 2005). Dufour, as cited in Dufour, Eaker, and Dufour (2005), further emphasized the role of PLCs in the RtI process by stating that the response to students needs must be timely to be most effective. This response must provide immediate and ongoing intervention based on outcomes rather than remediation efforts such as summer school or modified ability coursework. Finally, Dufour stated that interventions must be

directive, requiring identified students to participate based on need, rather than inviting them to seek help.

The concept of professional learning communities within the realm of RtI is well grounded (Mellard & Johnson, 2008; Wright, 2007). Focus is placed on developing a team understanding of research based teaching practices through collective inquiry. This understanding is then applied through assessing student needs, implementing the learned interventions or practices, and then evaluating both student and teacher growth (Dufour, Eaker, & Dufour, 2005). A focus on results is consistent with the RtI approach to evaluating student progress toward improvement based strongly in outcomes over time, or results.

With greater awareness and collaboration, staff experience a shift in perceptions, attitudes, and habits and eventually this changed perception leads to an improved school culture as a whole, where staff and students are more confident in their learning and experiences. This shift in school culture requires a depth in school leadership that goes beyond administration (Fullan, 2001).

A focus on leadership. Fullan (2001) approached the Professional Learning Community from the aspect of effective leadership. He emphasized that leadership should be deepened within the organization, among staff, promoting sustainable PLCs where leadership is an integral part of the school system rather than it being driven by a particular charismatic leader. Fullan (2001) identified professional learning community objectives including raising the bar and closing learning gaps through developing the

skills of staff members, improving the quality of teacher interactions and collaboration, establishing and maintaining a cohesive focus, creating and effectively utilizing resources, and building leadership throughout school systems. To achieve these tasks, teachers and leaders must work together through professional learning communities that are focused on student learning. Fullan (2001) emphasized that school professional learning communities need to focus on including quality, applicable curriculum and assessments that informs staff about student progress and needs. He emphasized this point by identifying two kinds of professional learning communities. In the first kind, staff members collaborated for innovation and improvement of teaching practices. The second kind of PLC, in contrast, relied on teacher collaboration based in traditional teaching practices. This second kind was viewed as reinforcing practices that may be inefficient. This presentation emphasized the call for change in school culture. That change encouraged teachers to step outside of their comfort zones and look at innovative practices that promote effective instructional practices which could be evaluated based on external standards to prevent a continuation of existing ineffective practices (Fullan, 2001).

Fullan (2006) noted that effective professional learning communities extended beyond the classroom level. Initially efforts were focused on achieving effective school level professional learning communities, reducing differences in classroom level practices. Next, leadership was encouraged to share this knowledge to improve performance from school to school. This cooperative model could be achieved through

teacher swap opportunities, district-wide professional development, and observation sessions with built in follow-up trainings. Fulan (2006) emphasized that effective districts expand knowledge through providing best practices sessions. He added that, to achieve professional learning communities, teachers must be given opportunities to get out of the classroom and learn from others. Greater emphasis on leadership development is also needed to reduce dependency on administration.

Fullan, as cited in Dufour, Eaker, and Dufour (2005) stated that effective school professional leadership communities focus on student achievement by developing the skills of school staff through collaborative processes, creating a shared focus, allocating and applying needed resources, and developing leadership within the school. To achieve this level of collaboration, Fullan (2005) proposed a “tri-level solution” (p. 210) involving the school/community level, the district and regional level, and the state level. He stated that, at each level, members must focus on new skills and outlooks toward learning, more targeted resources, and stronger commitment and motivation through collaboration. Fullan (2005) emphasized the need for a depth of systems thinking which moves away from a view of autonomy if professional learning communities hope to achieve this tri-level model.

Historically, at the school/community level, capacity was built by strong leadership. The difficulty in this case is that schools with effective PLCs driven by a strong leader risk losing focus when that leader moves on. Fullan (2005) identified the leaders primary role as understanding and fostering a change in school culture. To

achieve this change, he outlined five conceptions of effective leaders, including the ability to build relationships, the ability to generate knowledge, and understanding of the process of change, the ability to build collaborative teams, and a sense of moral purpose. All of these concepts are essential to fostering positive change within a school system. Fullan (2003) emphasized the concept of moral purpose, identifying moral leaders as being concerned with student outcomes beyond the school walls. Morally-driven leaders are just as concerned about student outcomes in other school as they are about students within their own school. An effective leader will promote sustainable RtI systems by building staff and community relationships that support an RtI model, generating knowledge through planning effective training, assembling an effective problem-solving team, and expressing genuine moral support of the RtI model.

At the district level, professional learning community characteristics included leaders who have a shared vision for student outcomes and a collective moral purpose for improving these outcomes. District level responsibilities included developing leaders' ability to recognize imperative roles to develop within school systems to create greater sustainability. Strong district-level professional learning communities were also structured in a way that promoted capacity building through between-school, collaborative efforts. Professional development should be focused on a depth of learning that promotes understanding and application of concepts rather than a rote practice lacking reflective thought. Fullan, Bertani, and Quinn (2004) also identified benefits of productive conflict that promotes the seeking of knowledge and collaboration to grow

and resolve the conflict. Fullan (2003) noted the need to create external partnerships and greater financial support to prevent unnecessary barriers and to avoid stagnation.

The third level, state educational units, is perhaps the most difficult to demonstrate effective PLCs within. Fullan (2005) related this difficulty to a state focus on accountability and legislation. Capacity building is often a minor focus. Fullan (2005) suggested that it is necessary for policy makers to become “deliberate learners” (p. 218) who engage in self-reflection and understanding to present policies that focus on problem solving, knowledge attainment, and greater student outcomes, in much the same way as principals and superintendents function at school and district levels. This increased focus would include greater collaboration of leaders at district levels.

Fullan (2003) described effective schools as being morally driven. Through the collaborative efforts of a PLC, school, district, and state-level cultures remain focused on problems solving and action driven by, and for, student outcomes. Changing the culture of schools is thus a social process of continuously seeking new knowledge and promoting interaction among staff, schools, and the greater learning community. The social process will further affirm the purpose that drives effective learning communities: student success.

Educational implications of professional learning communities. Effective professional learning communities are an integral part of effective RtI implementation (Mellard & Johnson, 2008; Wright, 2007). At the level of the school, RtI teams serve the leadership role through creating partnerships with families and the community. Informed

decisions are made based on student performance results. Similar to the PLC, teachers working within an RtI model must approach this effort collaboratively, depending on the expertise of others and a moral focus on student outcomes. RtI calls for teachers to step out of their comfort zones and rely on professional judgment to adjust instructional methods and improve student outcomes. Both PLCs and RtI are driven by a student outcome and further rely on building a strong knowledge base on how to effectively teach all students within the school culture they are part of.

At the district level, professional learning communities are an essential part of creating cohesive models of RtI throughout the district. Training must focus on developing a depth of understanding of all roles within RtI to include the roles of leadership, intervention specialists, teachers, and family members. Training should also address the importance of progress monitoring and informed, research based interventions (Fullan, 2005; Mellard & Johnson, 2008). Each of these aspects will evolve as unique district and school needs are identified and adjustments are made based on individual needs. District resources and between-school collaboration afforded through effective PLCs is an essential part of the RtI movement. Furthermore, for RtI decisions to be credible beyond one school's operating systems, the efforts must be cohesive across districts and the larger community.

At the state level, RtI is driven largely by legislation and state level department of education initiatives. Professional learning communities based on sharing knowledge across districts and providing focus studies and needs analyses are effective in supporting

district and school level efforts. State level professional learning communities can provide further support through the allocation of funds necessary to support training and resources directed at implementing RtI practices.

Summary

RtI is a systems approach to early identification and intervention for students who struggle with learning based on traditional educational methods. This framework evolved into the current operating system over a long period of time. It borrows from several theoretical frameworks including theories of systems thinking, multiple intelligences, and professional learning communities. Research has indicated that all six components are necessary for successful implementation of the RtI framework (Carrion, 2007).

Additionally, research considering rural effects indicates that teachers and administrators feel under-prepared to implement systems change, particularly related to working with students with disabilities, to a greater degree than urban schools with similar family and socioeconomic demographics (Barton, 2003; Burdette, 2007). Rural teachers and administrators further indicated frustrations surrounding allocation of limited financial resources, access to professional training, and retention of skilled staff. There is a significant gap in the research related to staff development and leadership participation dedicated to implementing RtI in the rural setting. RtI is a mandated systems change in the State of Colorado (Colorado Department of Education, 2008). This includes rural school systems that may have more limited resources. This study focused specifically on identifying possible relationships between training practices and leadership roles within

the rural setting, and overall levels of implementation. More specifically, this study considered whether a relationship exists between types of staff development, leadership participatory roles, and school levels of RtI implementation. As a result, this study will contribute valuable findings to the professional literature and establish groundwork for addressing RtI specific to the rural setting.

Chapter 2 will present current research that framed this study, including research on RtI, instructional practices, staff perceptions, leadership roles, and staff development. Chapter 3 will describe the research methods, including research design, participant identification, data collection and analysis procedures. Chapter 4 will present data results. Chapter 5 will provide a summary of this study and discuss findings and implications for further study.

Chapter 2: Literature Review

RtI is a significant systems change that is grounded in both staff structures, such as systems thinking theory (Senge, 2006), and professional learning communities (Fullan, 2005). It also focuses on student outcomes based on individual needs including those recognized in the theory of multiple intelligences (Gardner, 2004). As such, a literature review was conducted with the primary focus of identifying common leadership roles and effective staff development practices that support sustainable systems change leading to improved student outcomes. Because RtI was identified as the targeted systems change, studies that addressed RtI practices, implementation, and fidelity were also included. Guiding concepts within the literature begin with a broad presentation of practices and perceptions specific to RtI frameworks and implementation. Next, literature targeting professional development and leadership roles and practices through systems change will be presented. Whenever possible, literature will be tied to rural education with a focus on building sustainable systems change in rural schools.

Literature Review Procedures

This review was conducted using electronic and onsite library resources. Online resources accessed through the Walden University online library included EBSCO databases, ProQuest databases, and Sage online journals. In the EBSCO system the following databases were searched: Academic Search Premier, Education Research Complete, ERIC, Mental Measurements Yearbook, Military and Government Collection, PsycARTICLES, SocINDEX, and the Teacher Reference Center. ProQuests searches

included Dissertations and Theses, Dissertations and Theses at Walden University, and ProQuest Central. Sage Online Journals searched were selected from Education, Management and Organization Studies, and Psychology categories. In addition to online library searches, the University of Colorado at Colorado Springs library and interlibrary loan services were utilized. Searches focused on RtI implementation, systems change in rural education, RtI in rural education, leadership roles and training that support systems change and RtI. Literature searches also considered research methods and tools specific to this quantitative study. The literature review began with a broad search of key concepts of each study variable: *RtI (models, procedures, and implementation)*, *staff development*, and *leadership roles*. These were considered in isolation, paired, and in conjunction with rural school research. Boolean key words searched individually and in combination included *inclusion, inclusive education, rural school inclusion, staff perceptions, RtI, responsiveness to intervention, differentiated instruction, multisensory instruction, multiple intelligences, learning styles, academic interventions, administrative roles, school leadership, leadership roles, rural school leadership, achievement gaps, staff development, professional development, rural school staff development, teacher training, staff training, leadership training, professional learning communities, systems thinking, systems change, sustainable systems change, sustainability, fidelity of implementation, multilinear regression, multiple regression choosing statistical models, chi-square, analysis of variance, sample size and selecting sample size*. Based on these searches peer-

reviewed literature was presented based in school inclusion, RtI, leadership roles, staff development, sustainable systems change, and measurement tools and data analysis.

Response to Intervention: A Systems Change Approach

RtI is a significant paradigm shift from traditional school systems for serving students who are at risk and for the identification of students with disabilities that affect their academic and/or behavioral performance in schools. Zirkel and Krohn (2008) credit a call for replacing the IQ discrepancy criteria as a driving force in bringing RtI to the frontlines of educational change. Included in the 2004 reauthorization of IDEA was the ability to analyze a student's response to research-based intervention as part of the identification process rather than relying on formal assessments and discrepancies compared to an IQ score. (IDEA, § 1414(b)(6)(A)) and 2006 regulations added options for determining eligibility to include a severe discrepancy in performance, RtI methods, or "other alternative research based procedures" (IDEA, § 300. 307 (a)). When RtI is selected as the identification model, the identification process must be clearly documented to include intervention attempted and performance data collected (Fuchs & Fuchs, 2006). Furthermore, evidence of parental involvement in the process must be provided to include awareness of policies and procedures, participation in decision-making strategies, and their right to request formal evaluations. The paradigm shift to RtI calls for changes in the way schools approach both the identification and services for students who struggle as well as the roles staff may play in addressing student needs.

This change requires significant systems change, thus school readiness must be addressed.

A study considering state level readiness to implement RtI indicated that six states have mandated RtI as the method for identification of disabilities with the prohibition of discrepancy scores. An additional three were in transition toward such models of identification, while the remaining 41 continued to use discrepancy scores for primary, alternative, or combined models of identification (Zirkel & Krohn, 2008). Berkeley, Bender, Gregg-Peaster, and Saunders (2009) expanded on this research to more clearly define state roles in RtI planning and implementation. Their survey of state-level officials involved in RtI development indicated that 22 states were in the developmental phase overall. Ten states provide direct guidance to districts and three states were developing state-wide models. The state considered for this study has developed a state-level strategic model and is in partial or small-scale implementation throughout the state, including at least initial training support. These results indicated that many states are still in the initial phases of systems change toward an RtI model and preparatory practices that support sustainability are still important targets for many schools.

Planning service delivery is a key component to developing sustainable RtI systems. Glover and DiPerna (2007) outlined five “core service delivery components” (p. 528) essential to effective RtI implementation including multi-tiered implementation, student assessment and decision-making, evidence-based interventions, maintenance of procedural integrity, and sustainable systems change. They described the service delivery

as a three-tier framework that evaluates the progress of all students rather than only those who are already significantly behind their peers. Student assessment should inform the decision-making process and lead to the implementation of evidence-based interventions. The last two core components were related to supports necessary to ensure appropriate implementation of the RtI framework (fidelity) to the degree that it becomes a standard part of school operations (systems change). In systems change, defining the service delivery according to the six components will help ensure greater fidelity and sustainability.

Part of the service delivery planning includes understanding the overall RtI model. The three-tiered model is an essential part of the intervention process. Marston, Meuysten, Lau, and Canter (2003) researched implementation of the three-stage model in Minneapolis schools to clearly define state-model practices. They identified stage one as classroom level intervention implemented by the general education teacher to establish most effective model representations. This stage included general adjustments in teaching practices, lesson planning, and presentation styles. In the second tier, a multi-disciplinary prereferral team consulted with general education teachers and interventionists to create data driven interventions at a more intensive level. In the third tier, special education placement or referrals for more assessments was considered and implemented based on prior intervention data. Kovaleski et al. (1999) found that models similar to those identified in Minneapolis evidenced fewer retentions and fewer referrals for special

education services. Understanding of the overall model and how each component affects the overall model will achieve greater sustainability.

Curriculum-based measurement and performance screening are central components to the RtI process. Deno (2003) explored curriculum-based measures used to discriminate between students performing at, above, and below expected standards. This study identified the reliability of accuracy and sensitivity to change in curriculum-based measurements. Glovers and Albers (2007) considered the effectiveness of targeted brief assessments in identifying learning difficulties. They found that screening based on brief assessments such as DIBELS and AIMSweb, observations, and staff reports were effective measures for identifying students for interventions and problem-solving appropriate interventions. Hintze, Ryan, and Stoner (2003) and Severson et al. (2007) noted, however, that the use of curriculum-based measurement and screening within the RtI process need further research to develop more accurate interpretation of results for consistent identification and intervention. Glovers and Albers (2007) further emphasized that much of the research on curriculum-based measurement and screening surrounds reading and there is a need to diversify this research to include other content areas and behavioral measures.

The third core component, evidence based intervention, calls for the use of assessment data to determine appropriate interventions. Fuchs et al. (2003b) presented two approaches to the implementation of RtI: the problem solving model and the standard protocol model. They identify key groups supporting each with school

psychologist as the driving force behind the problem solving model and early interventionists as the driving force behind the standard protocol model. Telzrow, McNamara, and Hollinger (2000) described the problem-solving process as inductive and based in observable behavior or performance of the individual. Fuchs et al. (2003a) further explain this noting that in the problem solving model each case is considered individually because performance discrepancies, academic or behavioral, may have different underlying causes, and each student may respond better to different interventions.

The problem-solving process component involves four steps. Problem identification involves defining the problem through observable measures including unbiased descriptions of frequency, intensity, and duration of behaviors. Next, the problem can be analyzed to include identifying contributing variables and possible interventions based on student needs, strengths, and interests. Planned implementation can then take place. During implementation, a specialist or the teacher maintains progress-monitoring data throughout the intervention. Administrators or consultants serve as monitors to ensure fidelity of implementation by providing constructive feedback. After the intervention has been established the final step of problem evaluation occurs. This step is to evaluate the student's response to the intervention so appropriate adjustments can be made. If the intervention evidences steady progress, it is continued until the target goals are met. If it is ineffective the problem solving process begins again and the intervention is modified or changed to a different intervention. This process is

often carefully monitored by some type of intervention team as part of a pre-referral process as it is essential to understanding student performance.

Implementation of interventions is the cornerstone of the RtI process (Wright, 2007). As such, interventions must be research-based. The standard protocol approach implements standard, research-based interventions for all students with similar academic or behavioral problems. Vellutino et al. (1996) led the research in this method in a study that targeted students performing below the 15th percentile in first-grade reading. Students were assigned to a control group or to an intensive one-on-one tutoring intervention. This study found that 2/3 of the students participating in the intervention showed significant improvement to the degree of performing at the same level as their peers after a semester of intervention. Non-responders moved to the next level of intervention or referral. While Fuchs et al (2003b) recognized both methods as effective in meeting student needs; they noted a favor toward the standard-treatment model based on a toolbox of standard treatments available for each tier of the RtI model. This method reduced staff frustration surrounding clarity of intervention options and led to more effective planning and use of intervention time.

Glover and DiPerna's (2008) research identified two final components: maintenance of procedural integrity (fidelity) and sustainability of systems change. Fidelity was defined as establishing and following set protocol as well as ensuring full implementation of recommended interventions and progress monitoring across all tiers. Achieving sustainable systems change occurred over time and with consistent fidelity of

implementation. Adelman and Taylor (2003) researched the relationship between innovative practices and sustainable systems. They emphasized the importance of leadership teams in achieving systems change and found that through planning, identification and implementation of training, and continued evaluation and adjustment, systems change can occur over time. Sustainability was achieved when this process occurred naturally within the system regardless of changes in leadership (Sugai & Horner, 2006).

Response to Intervention as a Replacement for IQ Discrepancy

The reauthorization of IDEA questioned the effectiveness of IQ discrepancy scores as feasible qualification measures for special education and proposed the addition of, or replacement by, measures that assess student responses to a variety of instructional interventions to rule out variations in learning approaches. Steubing, Fletcher, LeDoux, Lyon, and Shaywitz (2002) conducted a meta-analysis of research surrounding IQ discrepancy scores and curriculum-based measurement with progress-monitoring as effective special education eligibility procedures. They expressed concerns with the students who were left out based on the discrepancy score model rather than with the validity of the IQ test. They found that performance measures more accurately identified students with reading disabilities for earlier intervention compared to IQ measures. Fletcher et al. (1998) researched the differences between discrepancy and intervention-based qualification and demonstrated that the variation in type of interventions used to address IQ discrepant and non-discrepant disabilities was insignificant, justifying a more

universal measure that was more likely to identify all students who needed intervention at an earlier point in their education. Steubing et al. (2002) found that, although the IQ discrepancy score could effectively identify a portion of the population as having learning disabilities, it often failed to identify students in earlier grades because the discrepancy is not significant enough at that point. Stanovich (2000) noted that the IQ discrepancy has been the prevalent measure of learning disabilities and that it promoted within-state reliability in placement because the “cutoff” discrepancy scores are clearly identified. Still, the IQ discrepancy score raised significant concerns surrounding variation nationally in determining cutoff points, the denial of services until a cutoff is met, and concerns in bias of decision when bivariate decisions are taken into account. Lyon et al. (2001) raised additional concerns about the difficulty in informing interventions based on assessments. This research supports government calls for replacement of the IQ discrepancy score with a more comprehensive evaluation and intervention model.

Peterson and Shinn (2002) explored which discrepancy scores most effectively met student needs and promoted early intervention. They identified three discrepancy score models. Intraindividual achievement discrepancies compared an ability level, such as IQ, to an achievement level, such as academic performance. Absolute achievement discrepancy scores consider all students who are performing significantly below a set standard. The final measure, a relative discrepancy score considered student performance compared to others receiving the same level of instruction.

Deficits of the IQ discrepancy score have been considered thoroughly in research. The absolute achievement discrepancy model stated that learning disabled students typically displayed the lowest academic achievement. Assessments of academic achievement compared to a national norm, should be sufficient for identification of a learning disability (Peterson & Shinn, 2002). Meta-analyses conducted by Fuchs et al. (2000) found this method to be the most consistent at identifying students as learning disabled. Peterson and Shinn (2002) identified concerns with this model to include a focus on within-individual performance without taking location into account, yet identification is inconsistent geographically. They also noted that one would expect low performing schools to evidence higher learning disabled populations based on this measure. However, that result is not evident in their research. These findings further support the alternative approach to identifying student deficits.

Alternative models have also received attention in recent research. Peterson and Shinn (2002) explored and presented a final model referred to as relative achievement discrepancy. This model proposed that the diagnosis of learning disabilities be school-based, evaluating student achievement compared in a within-school model. In this model, student interventions were determined based on assessments and failure to respond to instruction within a school when compared to the achievement of others within this school. In other words, the lowest performers in every school were served as the learning disabled population.

Ardoin, Witt, Koenig, and Connell (2005) researched a dual-discrepancy model where students were identified when a standard assessment evidenced below grade level proficiency and the student demonstrated an inability to show progress after a variety of research-based interventions. The authors explored the use of a dual discrepancy model in tier one, where universal interventions were in place within the regular classroom. In this dual discrepancy model, students were initially identified based on screening or curriculum-based measures and compared to performance levels of other students. This was the first discrepancy. Next, a series of interventions were implemented, beginning at tier one: the regular classroom. The needs of students who do not respond to intervention at this level were considered through the problem solving process to determine more targeted appropriate interventions within tier two. Finally, those who continued to respond poorly to intervention moved to tier three where intensive intervention and/or referral to special education could be made. This process was the second discrepancy: a continued poor response to targeted and intensive interventions over a specified period of time. Burns' and Senesac's (2005) study revealed consistent findings. Dual discrepancies that tracked students through a three-tiered RtI framework, were effective at diagnosing learning disabilities. This study also helped to establish a reliable cutoff for qualifying students by considering percentiles and standard deviations of performance. The authors identified the use of 25th or 33rd percentiles as effective measures of low-performing students.

In considering the goal of RtI as providing early intervention, any assessments that can inform instruction and intervention vs. a wait to fail model would be beneficial. No single assessment method should be relied on to make placement decisions. Multiple data points provide greater depth of knowledge in making informed decisions about instruction. While IQ discrepancies often lead to a wait to fail model of intervention, specific aspects of these assessments may still be valued in diagnosing difficulties. The other two models presented more promise within the RtI model. Further research is necessary to identify effective assessments that consistently identify student needs regardless of demographics, location, or other outside variables.

Assessments, Progress Monitoring, and Data-based Decision-making

Responses to Intervention frameworks identify assessments as an integral part of progress monitoring, intervention planning, and placement decisions. Having established RtI as an alternative to traditional IQ discrepancy methods, the next step was to consider what types of assessments are most effective in evaluating academic performance and monitoring student progress across the intervention periods. Curriculum-based measurements and curriculum-based assessments were explored for their roles within the RtI framework. Progress monitoring integrity and opportunities were also addressed.

Based on his research, Deno (2003) described curriculum-based measurement as a method for evaluating the growth of students in skills presented during instruction. He noted that curriculum-based measurement could also be referred to as general outcome

measures or dynamic indicators of basic skills. Deno identified eight characteristics of curriculum-based measurement. They are described as technically adequate since reliability and validity are established through standardization methods including repeated sampling of student populations. Curriculum-based measurements characteristically measure common learning tasks such as reading related skills, basic writing fluency skills, or basic math computation skills. Curriculum-based measures are often provided as part of a related curriculum ensuring predictability of performance based on the measure. Furthermore, they have specific instructions for administrators who help ensure fidelity of implementation. This implementation can usually be accomplished through performance sampling, which requires less time to administer, score, and interpret. This trait also makes it time efficient and easier to teach. The final characteristic identified was that performance could be repeatedly measured over time, providing opportunities for more frequent progress monitoring.

Curriculum-based assessment is different from curriculum-based measurement in that the latter provides a measure of individual performance on predetermined tasks, while curriculum-based assessments also consider differences between student performance and instructional methods (Burns, 2002). Curriculum-based assessment was designed to specifically address student instructional needs as part of the assessment process to better inform instruction and intervention. Determining instructional level is a common aspect of curriculum-based assessments (Gickling & Thompson, 1985). This determination process would consider known and unknown content to achieve effective

instructional balance. Understanding the difference between curriculum-based assessments and measurements better informs teacher use of each measure.

Curriculum-based measurement serves a variety of purposes within the RtI model. A common capacity of curriculum-based measurements is to establish baselines. Initial measures can be used to predict performance and adjust instruction based on identified needs. It can also be used to identify initial instructional levels for tier-one interventions (Shinn, 2002). In terms of English language learners, research considering predictability of classroom and test performance indicated that curriculum-based measures were effective at identifying preliminary skills and predicted outcomes in both classroom and standardized test performance (Marston, Canter, Lau, & Muyskens, 2002). Research also indicated that curriculum-based measurement was used in a more traditional capacity to estimate outcomes on high stakes tests (Good, Simmons, & Kameenui, 2001).

On a larger scale, curriculum-based measurements can be used to establish, school, district, state, and national norms. Establishing norms in this manner allows schools to conduct better comparisons of systems performance to improve consistency in instruction and intervention (Shinn, 2002). In this capacity, curriculum-based measurement can be used to inform instruction and intervention. Research indicates that teachers who regularly use curriculum-based measurement can more easily identify individual student learning goals as well as adjust instruction accordingly (Deno, 2003). By establishing norms, teachers have clearer data for comparison and progress monitoring.

More specific to RtI, curriculum-based measurement can be used as a screening tool to identify at risk students and the need for intervention. As such, they can also be used as part of the ongoing progress-monitoring process for both the measuring of individual responses to intervention and evaluation of prereferral intervention implementation and outcomes (Stecker, Lembke, & Foegen, 2008). After progressive interventions, this process may lead to identification of students, under a dual discrepancy model, as eligible for special education.

Redefining Roles within the RtI Framework

Part of the resistance to systems change comes from a fear of changing roles and responsibilities (Mellard & Johnson, 2008). Teaching staff, administration, specialists, and parents all participate in different roles as part of the RtI framework. While the initial process may meet resistance, collaborative efforts and administrative support can yield improved implementation, which will later be fueled by positive results. In a RtI framework, the pre-referral intervention team, or instructional support team, is often the cornerstone of the process (Adelman & Taylor, 2003; Bangert & Cooch; 2001, Fuchs et al., 2003; Glover & DiPerna, 2007). Bangert and Cooch (2001) researched the composition and roles of pre-referral intervention teams and found that they typically consisted of regular education teachers, administrators, and other educational specialists as needed to include psychologists, special educators, counselors, and disability specialists. They further emphasized that administrative participation was essential to successful implementation of problem solving systems. Key considerations in developing

a pre-referral intervention team are the identification of staff members essential to the implementation process and effective practices of the team as well as readiness for redefined roles.

Kovaleski et al. (1998) considered the effects of high and low implementation of instructional support teams in Pennsylvania on overall fidelity of implementation. In 1990, Pennsylvania decided to support the problem solving process by promoting instructional support teams for elementary schools. The team consisted of the school principal, the classroom teacher, a support teacher, and other identified specialists specific to the identified students' needs. The teacher was tasked with leading the problem-solving process once staff or parents identified a concern. The support teacher was tasked with aiding or advising implementation and progress monitoring. Training was provided with implementation to be phased in over a five-year period. The authors identified characteristics of high implementation across four phases in the instructional support team process: entry, hypothesis forming, verifying, and outcome phases. They reviewed both procedures followed, and strategies used, based on training provided and implementation observed in participating schools. The following table summarizes high performing characteristics according to phase.

Table 1

Procedures and Strategies for Effective Problem Solving Teams

PHASE	PROCEDURES	STRATEGIES
Entry	Requesting assistance	Teacher interview
	Interviews and observations	Behavior observations
	Reviewing work samples and assessments	Curriculum-based assessments
	Enlisting parent participation	
Hypothesis Forming	Problem identification	Consider contributing factors that may be interfering with learning (language/culture/life changing events)
	Gap analysis	Adjusting classroom instruction and assessment
	Goal setting to include progress monitoring strategies	Developing strategies for skill acquisition and retention
	Identification of key staff to implement strategies	
Verifying	Implementation of strategies	Increase exposure to learning to enhance understanding
	Progress monitoring	Adjust classroom management behaviors
	Teacher support	Develop instructional strategies that address learning interests/styles/ability level
	Strategy adjustment or phase out plan	Apply strategies training
	Employing support services	Increase on task time and application time
		Provide demonstration and guided practice
		Increase opportunities for student response
		Track progress visually through charts or graphs
Outcome	Review progress monitoring results	Review gathered data
	Determination of RtI	Review gap analysis
	Identification of next steps	Establish the students rate of learning and improvements/needs
		Determine need for referral or alternative interventions based on results

The authors found that initial implementation using this process reduced both costs for assessments and referrals, and the number of students actually referred for special education services. The authors also found that schools that displayed high fidelity of implementation evidenced improved outcome for students, more consistent systems-wide change, and an enduring reduction in costs and referrals. Schools with low fidelity of implementation showed no difference in outcomes than those from schools that did not employ instructional support teams at all, suggesting that low fidelity of implementation yields the same outcome as no intervention at all (Kovaleski et al., 1998).

McNamara and Hollinger (2003) support the strategies identified in Pennsylvania in comparing intervention support team practices. Their study identified assessment and progress monitoring data as central to the problem solving process. They noted that, in Ohio, the original intervention assistance teams were insufficient in addressing student needs and reducing referrals until intervention based assessments became a key part of the process, thereby better informing performance evaluations and intervention decisions. These studies indicated that practices of the pre-referral team have a strong affect on the system process and quality of results

When considering roles within the pre-referral team, a key place to start is with the administrator. Bangert and Cooch (2001) emphasized the role of the administrator as imperative to the successful systems application of the problem solving process. They found that the administrator must understand and be involved throughout the process by participating actively on pre-referral teams, ensuring that training in progress monitoring

and intervention are sufficient, and through evaluating fidelity of implementation and providing constructive feedback. Fuchs et al. (2003b) identified other roles as varying throughout the process. All members of the team collaborated to problem solve and identify appropriate interventions. Implementation responsibilities varied based on level of intervention and identification of special needs. In tier one, the classroom teacher should assume the primary intervention and data management role, but may be supported by special educators and other specialists (Cummings, Atkins, Allison, & Cole, 2008) or paraprofessionals trained in the intervention or data-gathering processes (Hauerwas & Goessling, 2008). In tier two, interventions become more targeted and the interventionist may be a general educator or specialist. Finally, in tier three intervention responsibilities and data management become more specialized.

Burns, Vanderwood, and Ruby (2005) looked more closely at the assignment of roles within the pre-referral intervention team. They established that there was no clear-cut definition for establishing roles, particularly leadership roles, within the team. They did recommend, based on leadership research (Rosenfield & Gravois, 1996) that leaders must have experience developing and maintaining collaborative teams, evaluating fidelity of implementation and team procedures, and implementing systems change. Burns, Vanderwood, and Ruby (2005) found that, in their nationwide survey, the most common leadership teams had approximately 59% general educators. The next largest configuration had 47% special educators or 45% counselors. The final common configuration for leadership had 31% school psychologists. These numbers varied to

some degree because respondents were allowed to select more than one leader category as fulfilling the leadership role within their pre-referral teams. Carefully planning interventionist and RtI team roles significantly impacted overall system implementation and student outcomes in both studies.

Still, roles types and personnel may vary from system to system. Burns, Vanderwood, and Ruby (2005) found that not all teams assigned case managers. Some respondents reported variation in case management depending on intensity of intervention while others approached case management as a collaborative effort with team members assuming different roles within the process. Other team roles identified as contributing to successful problem solving processes included timekeepers, who ensured the team stayed focused by limiting time spent on each aspect of problem solving, and the note-taker, who documented meeting proceedings. Administrative roles were often viewed from the standpoint of managerial and facilitative to include discovering and meeting staff needs, evaluating fidelity of implementation, and supporting teachers through consultation, collaboration, and training.

With roles varying from one school system to the next, staff members of schools implementing the RtI process may find themselves filling new roles. Lau et al. (2006) looked at the perspectives of an administrator, a school psychologist, and a special educator going through the RtI process, implementing the problem-solving model. The principal described his role as a change agent, responsible for planning, initiating, and monitoring the paradigm shift to a problem-solving model. Principals must recognize

resistance and its causes and combat them by communicating the importance and benefits of research based practices (Lau et al., 2006). They must also minimize potential for bias by ensuring ease of implementation and fidelity (Tilly, 2002). The school psychologist recognized a shift in responsibilities in assessments to more of a facilitative role. Lau et al. (2006) suggested that psychologists' new roles involve not only assessing what the problem is, but also how to solve that problem. They are afforded the opportunity to apply training in theories related to child development, curriculum, behavioral interventions, home-school relationships, and consulting in the classroom. Lau et al. (2006) also noted that the special education teacher found herself serving in a consultative role earlier in the process and aiding in the identification of effective interventions, progress monitoring tools, and training and implementation. Another valuable observation was that special educators gained better information regarding student disabilities when a student moved through the referral phase of RtI as data defined the student's performance more clearly than basic assessments could. In all three situations, staff members expressed the need for being prepared for these changes in order to reduce frustration and improve fluid systems change (Lau et al., 2006).

The Imperative Role of Parents

When considering important roles in the RtI process, parents must be viewed as an integral part of the problem solving process. Englund, Luckner, Whaley, and Egeland (2004) demonstrated the significant impact of parental roles in education in their longitudinal study investigating the effects of parent participation and expectation on

student achievement. They found that parent problem-solving guidance skills were related to child IQ. In addition to this parent expectations and participation affected performance in earlier grades. This in turn affected parents' expectations and involvement in later years, and the cycle continued. Yun and Singh (2008) found similar results at the middle school level. Their research showed that parent involvement and parenting styles directly affected school engagement and academic performance. Englund, Egeland, and Collins (2008) advanced the data even further, finding that parent-child relationships were also significantly related to dropout prediction in low-income families. Children of parents evidencing higher involvement and encouragement in the academic process were more likely to complete their high school careers than children whose parents were not involved. This research emphasized the importance of parent involvement in improving student outcomes.

Keeping parents informed is an integral part of the RtI process (Fuchs et al., 2003). Elliot (2008) prepared a guide for parents that outlined the role of RtI in meeting students' needs. She explained the theory behind the RtI model and the benefits of early intervention. Elliot further related current research surrounding IQ discrepancy scores vs. tiered interventions leading to appropriate identification and emphasized the importance of parent education and participation in the process. This emphasis was supported through research on the effects of empowering parents to participate in school governance and accountability (Shatkin & Gershberg, 2007). Researchers indicated that

parent and community education and involvement in school processes improved both student outcomes and school fidelity of implementation.

Identifying Research-based Interventions

As RtI becomes more prevalent in schools, fidelity of implementation using research-based interventions is essential to RtI success. There are numerous resources in written text, commercial programs, and online supports for identifying interventions, thus it is imperative that schools first establish an action plan, identifying a general list of resources for implementation which is constantly reviewed and updated (Colorado Department of Education, 2008; Tomlinson, 2008; Wright, 2007).

Differentiated instruction has been identified as a promising tool in tier one and two interventions (Tomlinson & McTighe, 2006). Differentiation can address a variety of instructional strategies to include varying instruction and assessments to address student interests, learning styles, ability level, teacher pacing, classroom environment, and opportunities for expression of knowledge (Tomlinson, 2005; Tomlinson, 2004; Tomlinson, 2003; Tomlinson & McTighe, 2006). Lewis and Baits (2007) followed one elementary school in North Carolina as it went through the process of planning, training, and implementing differentiated instruction. Key staff members were identified for participation in the planning process, differentiated instruction strategies were reviewed and specific strategies were identified for implementation based on school needs, perceived ease of implementation, and training needs. Training was provided on flexible grouping, leveled libraries, differentiated learning centers, guided reading, and

technology supports. In addition to this training staff collaborated in book and literature studies. Administrators reported initial findings of improved instruction, on task student behaviors, and improved student performance. Differentiation can carry interventions from tier one into tier two as well.

A common intervention in tier two is additional exposure to instruction through focus groups, tutoring, and “power” or “booster” lessons. The theory behind this type of intervention is that targeted instruction specific to learning deficits as an efficient way to address skill attainment, practice, and retention of skills (Burns, 2004). This intervention is an effective resource across a variety of content areas and learning deficits. Bryant et al. (2008), found that implementing 20-minute “booster” lessons that targeted specific skill deficits yielded significant improvement in math performance on the Texas Early Mathematics Inventories progress monitoring tool. Lienemann, Graham, Leader-Janssen, and Reid (2006) implemented explicit group instruction in writing strategies for six-second grade students performing below grade level on curriculum-based assessments. After participation in the self-regulated intervention group, students evidenced improvement through producing written responses that were longer, grammatically more accurate, more diverse, and more creative. Gilbertson, Maxfield, and Hughes (2007) also identified positive effects of focused intervention on improving reading skills of English language learners by demonstrating the ability of English language learners to improve at the same rate as English proficient learners when participating in targeted focus group interventions. Furthermore, English language learners outperformed students who did not

receive the intervention. Focus groups can be conducted within the regular classroom and evidence improved outcomes that can address both tier one and two needs within a differentiated classroom.

Peer-assisted learning strategies were more commonly implemented at the elementary school level as tier one interventions, but can be applied in tiers one and two as well (Morgan, Young, & Fuchs, 2006). Peer-assisted learning was described as peer mediated through classroom reorganization into “learning partners”. The approach promoted active collaboration among peers in the learning process. Peer-assisted learning strategies were organized into collaborative lessons that present a variety of tasks for student to work through together, thus decentralizing the classroom and increasing student interest in learning. Morgan, Young and Fuchs (2006) suggested that lessons should be structured into fast-paced “mini-lessons” to promote on-task behaviors and opportunities for the teacher to scan the entire classroom and provide corrective feedback. Fuchs et al. (2001) found that first grade students performed as much as $\frac{1}{2}$ standard deviation higher than peers who did not participate in peer-assisted learning groups on phonological awareness and word recognition activities. This study also found skills improvement of low-achieving, average-achieving, high-achieving, and disabled students occurred at a rate higher than that of their counterparts. McMaster, Kung, Han, Cao (2008) found peer-assisted learning strategies to yield similar results for English language learners who participated in this model of instruction vs. peers in regular instructional settings. Research findings support peer-assisted learning as an effective

intervention at the elementary level. Further research is needed to consider its effectiveness at the secondary level.

Research has also addressed what intensity of intervention most successfully met student needs and made more effective use of instructional time. For example, a simple tier one intervention would be to make more effective use of self-selected reading time for discussing readings to improve on task behaviors (Bryan, Fawson, & Reutzler, 2003). Burns (2007) supported the encouragement of reading at the instructional level and established instructional levels at 93% to 97% known material. He found that a majority of students (65.5%) showed significant improvement over peers who did not participate in instructional level grouping. Burns (2004) helped to establish guidelines for determining effective levels of known and unknowns variables in implementing interventions at the instructional level. They found that using 90% known variables was most effective when presenting new information and that instructional level learning with 70%-90% known variables was effective for practicing and retaining new skills and to a lesser degree for attaining new skills. Understanding intensity provides clearer guidelines for planning effective interventions.

The question then becomes how should the intensity of interventions be determined and varied? Barnett, Daly, Jones, and Lentz (2004) addressed this concern within the context of RtI. They found that initial intensity in terms of duration and frequency should be determined based on the gap analysis and intervention goals. Intensity in delivery of new information should follow research guidelines related to

known and unknown content ratios at instructional levels. The RtI team can then make recommendations depending on intervention levels. At initial planning levels, Barnett et al. (2004) found that, in effective models, intensity did not change significantly from regular classroom activities with the exception of assessments. Tier one to two interventions occurring in the classroom should focus on basic modifications of classroom routines, assessments, and assistance during independent work. This level also presented opportunity for increased one-on-one interaction. Targeted interventions in tier two to tier three levels become more intense, providing one-on-one or small group instruction, tutoring, social skills groups, counseling, and changes in instructional format. As students mastered skills intensity of interventions were decreased, maintained or ceased depending on intervention. Barnett et al. (2004) identified two prevailing trends in intensity of intervention practices. In the first, intensity started at a minimal level and was increased until students demonstrated improved response to the intervention. In the second model, intensity started high to ensure maximum exposure to content, and then it was reduced as mastery was demonstrated and the student was prepared to return to standard instructional practices. Daly et al. (2007) emphasized that intervention intensity must be driven by four factors: (1) measurement that provided a clear picture of student skill levels and that was sensitive to changes with intervention, (2) the quality and applicability of curriculum materials must be considered and adjusted if needed, (3) intensity of practice time should be driven by quality of instruction rather than quantity of time or material presented, and (4) intensity of reinforcing instruction should focus on

moving from skills attainment to maintenance and application. Both models of varied intensity lead to improved student outcomes. Indications are that the important step is to understand when and how to adjust intensity.

Inclusion as a Model of Systems Change in Schools

Although the research base surrounding RtI systems change is just beginning to establish its depth, looking to models of inclusion can provide insight into readiness for systemic change in schools. Inclusion follows a similar model in which teachers and staff were asked to change practices school-wide to include a variety of students in the regular classroom regardless of ability. This includes, to some degree, modifying teacher practices and increasing progress monitoring. Through considering perceptions of readiness, leadership roles, and staff development within the context of inclusion, some insight may be given to RtI outcomes in similar situations. This section will review perceptions, rural issues, leadership roles, staff training needs, and appropriate practices.

Perceptions of Inclusive Systems Change

Reviews of literature revealed several trends in staff perceptions that appeared to change over teacher careers and that were based on perceptions of administrators and support systems as well. Areas of concern included formal teacher preparation on instructional methods for the inclusive classroom, targeted professional development, and administrative support.

Crawford and Tindal (2006) conducted interviews to determine staff views regarding inclusive educational systems. Generally, teacher perceptions toward

implementing inclusive models and their benefits to students were positive. Staff saw inclusion as a positive and effective approach to teaching all students socially and academically, to be prepared for post-school occupational and community role outcomes (Crawford & Tindal, 2006). Another study found that 100% of the newly qualified teachers surveyed agreed that inclusive models of instructions were effective and beneficial. Yet these same teachers, surveyed one year later, expressed significant agreement changes in their perceptions of inclusion (Hodkinson, 2006). Further surveys and interviews revealed several factors contributing to this change in perception. First, teachers felt they did not have a clear definition of what inclusion was and how it impacted the classroom setting. Second, teachers felt they had not received sufficient, if any, training on how to achieve effective inclusion in their classrooms. In addition to this, teachers felt that not enough focus was given to inclusion, or general instruction of diverse populations, within school professional development programs. Further evaluation of this aspect, found that administrative knowledge of inclusion was limited and thus little emphasis was given to appropriate training and support systems (Hodkinson, 2006). An additional study found that teachers' perceptions were strongly affected by the views that their administrators held (Dymond, Renzaglia, & Chun, 2007). This perception was in part due to the absence of training resulting from administrative lack of support. It was associated, to a smaller degree, to implementation of a pullout model, and more largely due to a generally negative communication of the perception that achieving inclusive models is an impossible mandate that decreases the performance

of the general population (Hodkinson, 2006; Scruggs & Mastropieri, 1996). DeSimone and Parmar (2006) surveyed middle school math teachers who expressed that pre-service and in-service training, primarily driven by administrative decisions, left them “grossly under-prepared” for the realities of inclusive teaching.

These findings provide initial guidance in appropriate training and leadership supports. They suggest that training through degree and licensure program do not provide sufficient enough experience to prepare teachers for significant systems changes such as inclusion or RtI. Furthermore, they indicate that leadership roles have a significant impact on staff perceptions and fidelity of implementation.

Rural School Viewpoints

Recognizing that rural schools may have different perceptions and resources, several studies have been conducted to look more closely at teacher perceptions and practices within this specific school environment. Short and Martin (2005) conducted a mixed model study of perceptions of general and special education staff regarding inclusion practices within their rural school systems. Educators in the rural schools surveyed believed that they had actually been practicing inclusion to a greater degree than urban schools simply because of their smaller student population resulting in more limited resources. Both general and special education staff reiterated a concern that was voiced within larger research as the lack of formal training in effective systems practices, and limited emphasis on continued training through professional development. Another prevalent concern, often raised when addressing rural education, was the limited financial

supports based on a system of funding that is driven primarily by the number of students (Cruziero & Morgan, 2006; Short & Martin, 2005).

Short and Martin (2005) also considered inclusion from the standpoint of rural students. They found that students were generally very supportive of inclusive learning environments and that they felt it was representative of society, however, all students voiced frustration in the limited options for courses in which they could participate, noting that urban schools provide more opportunities for choosing interesting courses within their ability levels. Students in rural school indicated that inclusion was not as much of a barrier as isolation from opportunities available in more urban areas.

Similar to existing research in urban schools, there is a resounding theme of under-preparedness and over-expectations of inclusion in rural school settings as well. Hammond and Ingalis (2003) cited higher emergency teacher certifications and limited access to on-going training as key concerns in rural school settings. The inexperience of newer teachers with more limited training, coupled with this limited access to the training necessary to achieve effective inclusion, made rural schools a targeted concern in terms of inclusive models. This lack of resources and training often leads to student, family, teacher, and administrative frustrations (Salend, 2005). In addition to this, Salend (2005) found that rural schools also face increased crime, violence, drug abuse, drop-outs, and teacher turnover as a result of the limited training and resources.

In a survey of teachers in rural school, Hammond and Ingalis (2003) found that a majority of teachers admitted to having required programs in place but that a high

percentage of teachers were negative or uncertain about their role or the effectiveness of the program. Teachers also disagreed on the reasoning and benefits of inclusive programs. In terms of classroom practices, the rural teachers followed suit with others studies in the field, noting that collaboration among teachers, service providers, and administration were inconsistent.

Hammond and Ingalis (2003) went so far as to suggest that in some rural communities, standard practices were not the best practice unless teachers can become more supportive of these practices. Barriers included the degree of planning and collaboration required among a limited staff base, negative perceptions based in limited training, and limited communication with service providers who are not a regular part of the school system. This study emphasized the importance for commitment and more positive viewpoints toward systems change and that these attitudes must carry beyond teachers to staff and family perceptions as well.

The Administrative Role in Systems Change

Administrators are presented with a difficult situation in that they are responsible for implementing practices and directives that may conflict with each other (Quigney, 1996). Dymond et al. (2006) noted the difficulties associated with performance mandates, based in high stakes testing, and the mandates for all students to be taught by “highly qualified teachers” (No Child Left Behind, 2001) as conflicting with inclusive practices such as RtI, thus yielding the risk of “jeopardizing the learning of regular education students” (p 30). As the school leader, an administrator sets the tone for school readiness

and perceptions of inclusion, including the success or failure of inclusive practices (Williams & Katsiyannis, 1998). Time management and supportive practices are essential to successful inclusion. In a study of leadership roles related to special education and intervention practices, Cruziero and Morgan (2006) found that rural school principals spent an average of 79% of their time focusing on general education programming and 21% of their time on special education and intervention programming. While this breakout of time commitments is feasible, it is imperative that the time be spent appropriately through participation in special education processes and supporting inclusive practices rather than on paperwork responsibilities and disciplinary or placement management. When presented with systems change that may be viewed as conflicted, leaders must carefully plan and support this change in order to achieve sustainability.

Quigney (1996) identified the importance of the administrator in setting the atmosphere for system-wide practices in schools. Servatius, Fellows, and Kelly (1992) identified the lack of formal administrative training in inclusive practices as a significant concern in setting the tone for school practices. Quigney (1996) established that a large percentage of administrators do not have hands-on knowledge of special education and that their training is largely focused on legal expectations, with little guidance given to best practices. State expectations for principal licensure were as low as one required special education course to be deemed prepared to meet the needs of all students. Training in RtI was not a required course in principal licensure. Responding principals

rated their participation in special education and intervention-related processes as low in terms of the following items:

1. Translating individual learning objectives into daily lesson plans (indicating this is a teacher responsibility),
2. planning goal, instruction, and related services using an outcome oriented framework,
3. evaluating consultation and related services programs,
4. involving students in their transition planning,
5. helping to implement transition planning throughout a student's educational career (pre-school to kindergarten, elementary to middle school, middle school to high school, and high school to post-secondary options).

On the other hand, principals rated their involvement in practices as high for the following 5 areas:

1. Communicating confidence and respect toward and among all staff,
2. encouraging professional development,
3. encourage positive and responsible behaviors in students,
4. acknowledge staff efforts and accomplishments,
5. and encourage active participation by all team members in the IEP process for students with disabilities.

Furthermore, Cruziero and Morgan (2006) confirmed prior research showing that administrators played a key role in fostering collaborative environments among teachers and encouraging continuing education to promote inclusive practices. They supported the development of systems that promote more inclusive educational systems, but placed the majority of actual inclusive practices in the hands of the general educator with the support of special educators and related services. Findings by Smith and Colon (1998) also supported the concept that administrative approaches and behaviors strongly affected school outcomes. School systems with active administrators who viewed systems change as an opportunity for all teachers and students to be successful in an inclusive setting were more likely to foster successful systems practices than administrators who viewed and approached it as a necessary and challenging mandate that must be “dealt with” to be in compliance. Administrators must make an effort to be knowledgeable about new systems and positive about their implementation. This includes understanding and supporting organization needs.

Perceptions of inclusive systems change play a significant role in how teachers, and school systems as a whole, meet the needs of a diverse student. More specifically, researchers have shown that teachers and administrators felt under-prepared and over-tasked in terms of meeting the specific learning needs of students with disabilities, or who are not performing at expected levels, within the general classroom (Corbett, 2001; Croll & Moses, 2006; Hodkinson, 2006).

Based on the common viewpoint of limited funding availability and teachers entering the field already feeling under-prepared (Hodkinson, 2006), administrators should focus on facilitating greater support of in-service training surrounding support of systems change initiatives. In addition to this, Smith (2006) called for the active recruitment of a hierarchy of support systems to create a system that moves beyond the school setting and into transition. This included incorporating families, schools, districts, and communities more actively in the educational process of all students. One such approach to inclusion is the RtI framework. This model not only incorporates inclusive practices, but also addresses early intervention, by redefining roles in the responsibility of education staff and intervention processes.

Inclusive Classrooms Practices that Support RtI

Understanding that teachers generally feel that an inclusive model is beneficial in theory, but that they lack the time, money, and training, to implement successful inclusion, it is imperative to look to the research to identify classroom and school level practices that are easily learned and implemented, and that are cost effective. Such strategies range from changing attitudes to promote effectiveness, to using teacher and student interests, and to actual instructional methods that promote use of individual strengths and needs. Research will be presented according to these themes.

First, it is valuable to consider school personnel and administration impacts of their perceptions on how they present new methods and implement those methods in the classroom. Beginning with the role of school leadership, Cruziero and Morgan (2006)

found that administrators played an instrumental role in setting an atmosphere that promotes or defeats successful systems implementation including inclusion. Based in educational initiatives and regulations over the last decade, administrators indicated that they have been given increased responsibilities in addressing and meeting the needs of an increasingly diverse student population (Williams & Katsiyannis, 1998). Cruziero and Morgan (2006) found that administrators who played a more active role in the special education process, created school atmospheres that were more supportive of working with a variety of students' abilities through classroom strategies and staff training and support.

Dymond, Renzaglia, and Chun (2007) found that administrative support needed to be addressed well before implementation. They found that active planning and administration of training and collaboration were key to achieving effective systems changes such as inclusion. Researchers promoted the use of focus groups and literature studies followed by implementation of key concepts. They emphasized the importance of linking service training to classroom practices by identifying specific needs, providing targeted training, and following up with constructive evaluation, retraining, and adjustments regularly. Training should be presented in a positive light, with emphasis on the benefits of inclusion for all. Training that is easy to implement is more likely to be supported positively by administration and implemented correctly by teachers. Training that was more time intensive and difficult to implement in its entirety often resulted in cutting areas perceived as “fluff” to fit practices in with learning mandates.

In addition to leadership roles in planning and supporting training, Carpenter and Dyal (2007) found that training and interactions among teaching staff that includes and is supported by administrative staff result in teachers being more receptive to implementing inclusive practices. Visible administrative support provided greater opportunities for consultation among teachers as well as with service providers. When teachers felt positive support from administrators, backed up by relevant training, they were more likely to express positive views toward inclusion as well as their abilities to implement inclusive practices.

Once administrative support and effective training have been addressed, other aspects can be explored. It is important to consider how personal interests, strengths, and weaknesses, can influence classroom strategies and outcomes. Strategies that take student interests and learning styles into account evidenced greater levels of student engagement and improved mastery of lesson content. Iaquinta and Hipsky (2007) found that using teaching strategies that allow students to associate learning with their own lives help to promote greater understanding and increased ownership for learning. Instruction that was multisensory, presenting content to a variety of learning styles had a greater chance of meeting the learning needs of a variety of students.

Teachers' personal interests and strengths may also be taken into consideration. Alati (2005) found that by incorporating personal interests and passions into classroom instruction, teachers were able to better engage students and employ multidimensional instruction that was more likely to reach a greater variety of students with and without

disabilities. Interviews showed that not only were students more engaged, but they also expressed genuine dedication and respect for their teachers. In addition to improved students performance and desire to learn, the author noted that teachers expressed less frustration and greater job satisfaction. Alati (2005) stated that teachers empowered in their instruction, by personal passions, led to student empowerment in learning.

Finally, researchers presented several instructional practices that can simplify lesson presentation and improve student outcomes. Such practices included differentiated instruction, coteaching, tiered lesson, graphic organizers, visual displays, mnemonic devices, and technological applications. These practices supported increased implementation with fidelity and sound data for progress monitoring. Research on several strategies will be discussed further.

Differentiated instruction has been defined as a systematic plan for curriculum and instruction aimed at helping students with diverse academic needs, abilities, and learning styles (Tomlinson & Eidson, 2003). Tomlinson (1999) found that teachers can significantly increase students' learning capacities through the use of differentiated instruction compare to students instructed with no intervention strategies. Van Garderen and Whittaker (2006) divided the concepts underlying differentiated instruction into five elements of instruction, and provide examples of each element.

The first element is content of instruction. This includes the subject or concept being taught as well as how the information is presented or accessed. Suggested methods for differentiating instruction for the various ability levels and learning styles included

varied reading level text (or text on tape), guided notes, use of examples and illustrations, presentation in visual, auditory, and kinesthetic modes, and primary language support (Tomlinson, 2000). Of these, the easiest to implement with limited training are modified reading text and guided notes. Presentation methods may require more support initially until teacher skills can be practiced and developed (Lenz & Deschler, 2004).

The next element, referred to as the “process” (van Garderen & Whittaker, 2006), involved how students develop ownership for their learning. Teaching strategies to maintain student involvement included varied pacing, cooperative grouping, activities that promote multiple perspectives, emphasis on critical passages in the text, and tiered lessons. Pacing, grouping, and assignment of activities that enroll higher order thinking, are all actions teachers do as part of their planning and delivery mode through instructional behaviors and assignment selection, planning for these involve practice and awareness of teacher behaviors and lesson planning choices, but are not necessarily time intensive. Topics with multiple perspectives may require more teacher guidance initially until students develop an understanding of expected participation levels. Tiered lessons require the greatest level of teacher training and preparation. Tiered lessons present materials and evaluations based on leveled materials. This may be through the level of guidance provided in notes, the level of supports provided for assignments, or the type of responses expected on evaluations. Tiering can vary further by the number of levels used, with an average of three tiers being considered effective (supported, average, advanced)

(Pierce & Adams, 2004). Graphic organizers can be used two ways: by teachers to present new information, or by students to organize or relate knowledge learned.

Products are the next element presented by van Garderen & Whittaker (2006). This involved how students demonstrate knowledge of the presented topic. Products may be guided through the provision of specific internet or resource book support, rubrics that provide clear guidance for mastery, choice of performance measures, or through promoting the use of technological tools (Hawethorne & Meade, 2007). Collaboration with library and technology staff may further help in providing students with a variety of resources for both gathering and sharing information. Rubrics were identified as effective tools for outlining expectations for demonstration of skills. Rubrics that provided specific characteristics of grade level work with examples and non-examples are most effective in helping students achieve desired outcomes. Choice of activities allows students to select products that rely on personal strengths in both the learning and demonstration process (Anderson, 2007). Finally, technology provides numerous resources for gathering and presenting information, to include the use of Internet and organizational tools as well as presentation tools such as Publisher or PowerPoint.

The fourth element was affect, which is how students link learning to their own emotions in the school setting and in life. This was achieved through teacher modeling of respect and clear expectations. It can also be accomplished through encouraging students to explore multiple perspectives and through promoting consistent unbiased participation by all students (van Garderen & Whittaker, 2006).

The final element presented was the learning environment. This involves the physical set up of the classroom to include furniture placement that allows for individual as well as small or whole group work. It also involves making sure necessary resources and supplies are readily available and that expectations for use of time and resources are clearly stated and understood.

Coteaching and collaboration are common methods for diversifying the instructional environment. Dieker and Murawski (2003) defined coteaching as an instructional partnership among teachers where instruction and leadership status are shared together in classroom practices. Bouck (2007) specifically explored the coteaching partnership between special and general educators as an effective approach to the inclusive classroom. Coteaching, in this instance, involved content specific instruction led by the general education teacher with in-depth knowledge of the subject while learning strategies, and expression of mastery were guided by the special educator. This occurred through models of note-taking, graphic organizers, and guided group and individual projects. Bouck found that students in coteaching classrooms demonstrated higher levels of mastery compared to students in pull-out or single instructor classrooms.

Weiss and Lloyd (2003) emphasized the importance of a collaborative partnership when implementing coteaching. Scheduling, content knowledge, and professional partnerships were essential aspects of successful coteaching. Dieker and Murawski (2003) found that common planning time led to greater understanding of instructional strategies that promoted partnership and understanding of expectations and performance.

This allowed for collaboration on expression of content as well as performance expectations and measures. Furthermore, Walther-Thomas, Bryant, and Land (1996) emphasized the importance of willingness and ability to develop a partnership, balance expectations and student needs, and collaborative planning as essential to a coteaching model of instruction.

Achieving Sustainable Systems Change in RtI

Systems change can be viewed from a variety of standpoints. Stollar, Poth, Curtis, and Cohen (2006) found that a system can range from a grade level or school to districts, regions, states, and higher, depending on the focus. For systems change to be sustainable, it must persist beyond initial movement efforts or specific charismatic leaders (Fullan, 2003; Kovaleski, 2007). While a lot can be learned from the systems change brought about through inclusive practices, current research has more to offer regarding sustainable, research-based, school systems. Sustainable systems change requires staff development (Devlin, 2005; Kovaleski, 2007; Miller, George, & Fogt 2005), implementation with fidelity (Vanderheyden & Jimerson, 2005), and reflective and supervisory supports (Glover & DiPerna, 2007; Kovaleski, 2007; Miller et al. 2005). Several research studies go a step further promoting community partnerships that create accountability beyond the school system (Cashman et al., 2004).

Planning

For systems change to be sustainable, it must begin with clear planning. This is initiated through establishing a clear mission and vision that specifically incorporate a

support for systems change (Mass-Galloway, Panyan, Smith & Wessendorf, 2008; Miller, George, & Fogt, 2005). Fuchs and Fuchs (2001) identified five elements that effectively support sustainable, research-based, RtI practices. These included a key individual, control and appropriate allocation of resources, accountabilities grounded in data collection of student progress, awareness and acceptance that implementation will be difficult initially, and recognizing growth and accomplishments. Miller, George, and Fogt (2005) identified the importance of developing a vision and goals unique to the individual school to develop ownership of the process. Fogt and Piripavel (2002) expanded on these elements noting that sustainability also required the development of a shared vision, clear and appropriate expectations for students, inclusion of a social skills curriculum and recognition system, and inclusion of a behavioral support system. Planning must include establishing mission, vision, and goals taking factors presented in the research into account.

With these elements as the groundwork for building sustainable systems, Miller, George, and Fogt (2005) developed and tested a process for achieving sustainable systems change in one school. The first step was to identify and attempt to clearly define behavioral and/or academic problems, including evaluating existing data, gathering further data needed to understand the problem, and developing a clear understanding of the personal views of professionals regarding the identified problem. Understanding personal beliefs and how they affect decisions-making and observations is important in understanding how members of the system will react during a period of change. Personal

assumptions, if not clearly stated and understood can unintentionally undermine the new system (Senge et al., 2000). Next, the authors (Miller, George, & Fogt, 2005) laid the groundwork for systems change by assessing the school environment, introducing research-based practices, supervising and evaluating fidelity of implementation, and adjusting accordingly. In this step, the school also looked for connections in how different components of implementation interacted with each other to better understand the effects of changing any single component. Once research-based practices are identified, staff training and follow-up are imperative. Having and following this clear plan lead to greater readiness and implementation.

To effectively address student needs, change must take a multifaceted approach, considering not only academics, but also behavioral and social supports (Baker, Dilly, & Paul, 2003). Kern, Bambara, and Fogt (2002) researched the impact of behavioral and social supports in student outcomes. They found that when learning was matched to a student's instructional level, based on assessments, and desired behavioral and social responses were encouraged, students responded to interventions more effectively.

Once a curriculum and overall program are established, a supportive organizational structure should be made apparent (Miller, George, & Fogt, 2005). They found that, in effective systems, new initiatives were viewed as innovative and aligned with the new system. Assessments of system functioning occurred at a collaborative level, including administrators and teachers in the process. Finally, adjustments to the

system were decided using a team approach, promoting continual, system-wide ownership of the process.

Leader Roles in Sustainable Systems Change

While relying on key charismatic leaders may hinder systems change sustainability, depth of leadership support that goes beyond individual schools will support sustainability (Fullan, 2003; Hannay, Manning, & Earl, 2006). Fullan (2005) added that it often takes at least one visionary leader to initiate systems change. Furthermore, this leadership must extend beyond the school itself, to district, state, and national levels, for a system to be truly sustainable (Fullan, 2005).

Research by Hannay, Manning, and Earl (2006), considering cooperative leadership models, identified six essential steps or roles that leaders play in developing sustainable systems. The first step in achieving sustainable systems is developing a district level focus on the mission and vision of a whole. This involved the collaboration of a team of supervisors, building level leaders, and key teachers and staff members. Next, leadership must explore and relate goals and change based in data to enact the school-wide focus. This established a strong framework for the “why” or need of systems change. Hannay, Manning, and Earl (2006) identified the next imperative steps as visible collaboration among leaders in the greater system. In effective systems change, this step was evident from start to finish, including data review meetings, training planning and participation, and follow-up and evaluation activities. The authors emphasized the importance of a depth of leadership including building and district level supervisory staff.

They also emphasized a shift from administrative, business running type roles to more interactive and visible leadership roles. Through more visible participation in the systems change and sustainability process, leaders established belief in a the existing support system.

The next imperative role of leadership was to participate actively in the staff development process (Hannay, Manning, & Earl, 2006). This included building staff development opportunities into a variety of setting including leadership meetings, community meetings, and school level meetings (Hannay, Telford, Mahoney, & Bray, 2004). The authors found that, as these staff development activities took on a more integrated part of the school system, impromptu trainings began to develop to fill a need recognized through ongoing reflection on performance data. In addition to this supervisory staff, principals and teachers all reported greater, more effective collaboration. Participation in such staff development activities was part of the fifth supervisory action identified by Hannay, Manning, and Earl (2006). They found that leadership from all levels who were actively involved in school-level processes promoted more consistent school-wide practices. This lead into the final action of pursuing coherence. In this step, leaders attempted to make sense of system operations through reflective activities and “temperature checks” of what is going well and areas of further need for training or additional resources. Active leadership participation in staff development lead to improved learning and implementation by staff.

Howard and Rice-Crenshaw (2006) emphasized that depth within an educational system is insufficient if individual leaders do not possess a well-rounded skillset that addressed both fundamental teaching skills and motivational techniques. The authors identified two failing school districts in which leaders were identified as poor performing as well. One leader was provided with targeted training and support in instructional and motivational practices. This included training in instructional support practices, supervision, visibility, and school-wide motivational practices through collaboration, recognition, and targeted appropriate remediation. School performance improved and the building level administrative ratings improved to average, while the school receiving no support did not evidence such growth. This would suggest that ongoing staff development could improve administrative performance as well, which impacts teacher and school-wide performance.

Thomas, Ching Yee, Wan, and Lee (2000) also sought to identify leadership roles that lead to more successful systems change in failing schools. They followed several special schools, identified as failing, as they went through corrective action planning and implementation. The authors found that administrators who were actively involved in relating yearly targets to all staff and promoting best practices identified within the action plan yielded the greatest improvement. Successful administrators also provided visible moral support for school-wide efforts. Furthermore, they found that administrators must rely to some degree on expert advice and training, at least for senior staff, who could then extend this training to building level staff, with access to ongoing support as needed.

Staff development

Staff development is essential to effective implementation and sustainability of any systems change (Glover & DiPerna, 2007; Kovaleski, 2007; Kratochwill, 2007).

Kovaleski (2007) stated that, to effectively implement RtI processes, schools must provide targeted, intense, and continual training, collaboration and support, and administrative follow through. Effective, sustainable systems call for training that occurs frequently and with enough intensity to build teacher skills and sustain implementation efforts (Glover & DiPerna, 2007).

Kovaleski (2007) described sustainable training as training that is “durable” through follow up activities and opportunities to participate in guided practice and reflection activities. He provided guidance for on-going support and staff development practices through implementing new instructional practices that created greater ownership of training among teaching staff. This training included activities such as developing teacher networks and conducting study groups to review current research, conducting site visits, and participating in literature studies. They went on to indicate that these groups could target specific roles within the RtI process, such as data analysis teams, intervention teams, and protocol/processes teams. Research also indicated that sustainable systems change, related to RtI, was best achieved when systems moved at a planned pace, designing opportunities for success (Kovaleski, 2007; Kratochwill, 2007). Thus staff development requires careful planning, pacing, and diversity of learning

opportunities in order for staff to master concepts, implement them with fidelity, and achieve sustainable systems.

Implementation fidelity

Stollar, Poth, Curtis, and Cohen (2006) noted that while research outlines processes to maintain a high fidelity of implementation, there is currently a gap between research and practice. To achieve fidelity, the authors pointed to processes that included collaborative learning and reflection. Kovalesski (2007) found that much of the recent focus in RtI is given to core curricular programming and instructional support, while more emphasis must be placed on sustainable practices through emphasis on treatment fidelity and efficacy as well as the roles of leadership in evaluating systems to ensure treatment fidelity.

To achieve fidelity of implementation, an emphasis should be placed on preservice and inservice training, followed by clear definition of who will support, monitor, and facilitate implementation with fidelity (Kratochwill et al., 2007; Wanzek & Vaughn, 2007). Kratochwill et al. (2007) found a resistance among seasoned teachers to rely on research-based practices over personal experiences in teaching. They implied that leaders' needed to approach implementation fidelity with a clear understanding of staff readiness and related to implementation. A school-wide, systems thinking approach, supported through active leadership was highly effective in achieving fidelity of implementation.

The school principal should be accountable for assuring that program changes are implemented with fidelity, including the selection and administration of appropriate curriculum, interventions, and ongoing assessments (Kovaleski, 2007; O'Neill, 2008). Administrative leadership, through visible interaction and feedback has evidenced greater sustainable implementation that includes fidelity (Glover & DiPerna, 2007; Noell & Gansle, 2006). This included teacher observations, direct feedback, and identification of follow-up training.

Collaborative efforts

Schools must begin to think beyond traditional systems to identify supports and resources that sustain effective programs and that adjust according to systems needs while ensuring fidelity of implementation through a problem-solving and planning process (Cashman et al., 2004; Devlin, 2005). Stollar, Poth, Curtis, and Cohen (2006) studied the effects of collaboration on achieving systems change. They identified a collaborative strategic planning process of the following five steps: problem definition, problem analysis, goal setting, plan development and implementation, and plan evaluation. This collaborative process occurred at a variety of levels depending on the system size. When using this problem solving process, it should be a team-based approach that takes into account the culture of the specific school and district systems (Ringeisen, Henderson, & Hoagwood, 2003; Stollar, Poth, Curtis, & Cohen, 2006).

Blank and Cady (2004) provide evidence of greater collaboration at the community-level as another effective approach to sustainable systems change. Through

involving the entire community in taking ownership for student learning and supporting systems change, the school systems targeted in this study were able to achieve and sustain systems change that lead to significantly improved student performance academically and behaviorally. Through involving school personnel, parents, residents, and community businesses in a community-based environment, Blank and Cady (2004) identified an increased accountability among school, families, and communities who had vested interest in the school's success. The authors suggested that this type of community-level accountability would be most successful and sustaining beyond the tenures of current school staff and leadership.

Leadership Roles

School leaders play a large role in the functioning of a school system. Researchers addressed several areas of administrative leadership roles in supporting sustainable systems change, including characteristics that promote innovation (Hite et. al., 2006), leadership styles (Black, 2007; Frymier-Russel, 2008; Gurr, Drysdale, & Mulford, 2006; O'Donnell & White, 2005) and collaborative efforts (Brooks, Hughes, & Brooks, 2008) as well as teacher-leaders who support the roles of administrators.

Effective Leadership Traits

O'Donnell and White (2005), evaluated principal leadership behaviors and approaches to learning related to student achievement. The authors found that leaders who scored high on actively promoting effective instruction and positive learning environments were positively related to greater student achievement. The authors also

found that principals who felt they were able to clearly establish a collaborative mission, in schools with higher socioeconomic statuses, were more likely to achieve better student performance in reading. Hite et al. (2006) considered how administrative characteristics affect perceptions of school staff innovativeness. More specifically, they considered how administrative characteristics including demographics, specific position, and experience, affected perceptions of administrator innovativeness, staff innovativeness, and mutual innovativeness. The authors found that respondents perceived administrators who were older and who had more experience as more innovative or as more supportive of innovation. The authors explained this based on a perception of increased visible presence and stability, even through change. O'Donnell and White (2005) as well as the Hite et al. (2006) indicated that leaders who are more visible and demonstrate support of a systems change more effectively promoted sustainability. Furthermore, leaders who visibly supported systems change through collaborative avenues may sustain systems changes more effectively. In addition to this leaders who were more experienced tended to promote greater innovation among staff. Based on leadership trait research, leaders must be active, knowledgeable, and demonstrate positive support for systems change in a visible manner.

Frymier-Russel (2008) conducted a qualitative study to identify traits and effects of enthusiastic and engaging leaders within elementary, secondary, and post-secondary education systems. Through interviewing school leaders identified by others as strong, enthusiastic, and engaging, the author identified three underlying components that made

these leaders effective. The first component or trait identified was collaborative leadership style. Leaders who were enthusiastic and engaging encouraged collaborative working environments where teachers felt supported, informed, and active within the educational system. Elements identified by Frymier-Russel (2008) included leadership interaction with staff, active supervision that provides direction, encouragement of teamwork, implementation of team-based problem-solving and planning, and creating an environment where everyone is working to achieve a shared vision.

The next component was having a strong work ethic. Frymier-Russel (2008) identified 5 elements related to work ethic. First, it is easiest to establish a strong work ethic when there are daily opportunities to perform tasks one does best. Next, a strong work ethic can be sustained through consistent recognition and praise for good work. The third element related the importance of leadership that demonstrated genuine concern, recognizing employees as unique individuals. This lead to recognition of individual jobs as key to successfully achieving the organization's mission. Finally, work ethic was built by ongoing encouragement of both professional and personal growth.

The final component described in Frymier-Russel's (2008) research was mission alignment. This was defined as "the extent to which an individual feels his or her work matches or corresponds to his or her own values and purpose for being" (p 90). The author stated that it is important to establish pride in one's work to yield enthusiasm and engagement. This is best achieved through a combination of what Frymier-Russel (2008) referred to as "top-down" efforts to establish buy-in, and "grass roots" efforts in hiring

staff with a shared vision and developing an aligned mission through collaborative and evolving processes that include effective training and incentives.

Gurr, Drysdale, and Mulford (2006) researched and identified leadership values and beliefs associated with effective educational systems. The authors conducted a literature review and qualitative study of characteristics of successful principals within the Australian school system. They identified seven areas associated with successful principal leadership including context, values and beliefs, providing individual support and capacity building, building school capacity, working toward a shared vision, considering community outcomes, and implementing evidence-based monitoring and evaluation.

Context referred to a principals ability to understand the setting in which they worked and imbedding their leadership within the educational systems processes. Successful principals were able to employ their leadership in a way that made it a standard part of operations that fit within the context of local and larger community operating systems. This included management, discipline, delegation and communication styles.

Gurr, Drysdale, and Mulford (2006) divided values and beliefs into three general categories. The first was a possession of innate goodness and passion. This was described as being honest and forthright, showing empathy, being committed to students and staff, valuing equity, being open and flexible, and believing all students matter and can learn. This value also included the ability to delegate and recognize leadership roles among

staff. Next, good principals were recognized as being child-centered, promoting systems where individualization, differentiation, and focus on strengths and learning styles are imbedded in the instructional environment. Finally, successful principals were described as visionary or inspirational, motivating staff and students to succeed.

Brooks, Hughes, and Brooks (2008) conducted a qualitative case study considering the effects of a less collaborative school system model on teacher perceptions of fear and alienation in their careers. The authors found that teachers experienced five different types of alienation. Teachers expressed feelings of being powerless over the curriculum, discipline, and or school policies and procedures. They also related feeling that their work lacked meaning or direction. In addition to this, some teacher related that their teaching lacked norms for comparison or targets leading to unclear goals for achievements. Limited collaboration led to feelings of alienation through isolation to the degree that some teachers lacked collaboration within their own content areas. Finally, teachers identified division within the school system leading to poorer communication and fear about stability and job security. Based on this, the authors suggested comprehensive reform that would promote more collaborative systems to develop school-wide teams, buy-in, a clear vision, and on-going guidance and commitment to targeted goals and team development.

Leadership that Targets Sustainable Systems

Innovation and positive school change often begin with leaders who are willing to change their behaviors and approaches related to current operations and the ways they

view challenges within the systems they are a part of (Hoffman & Johnston, 2005). They studied the impact of leadership training and approaches to change, through the Union Pacific Leadership Foundation's Principal Partnerships program. This study specifically considered collaborative practices of principals through targeted training in collaborative leadership models. The authors found that principals who participated in collaborative leadership models through training and consulting with other leaders, experiencing similar challenges, felt better prepared to achieve positive change. They were more open-minded about others perceptions and options presented to affect change. They also found that principals who participated in collaborative leadership models were more optimistic about school possibilities. By collaborating, principals were able to consider situations from another viewpoint and were able to embrace change based on support and viewpoints of others who have experienced challenges and successes similar to theirs. The authors also described an increase in systems change and improved school performance outcomes that appeared to spread based on school leadership who participated in such collaborative programs. (Hoffman & Johnston, 2005).

Black (2007) conducted a literature review of 27 research articles in 2,714 school districts and surveys of 4,434 superintendents to more clearly define leadership roles that support student achievement and sustainable learning environments. The author identified five superintendent level actions that result in higher achievement and more effective sustainable school systems. The first essential action was setting comprehensive goals for district-wide achievement. Next, superintendents facilitated the development of non-

negotiable objectives for improving instruction. After this, effective superintendents work closely with district school boards to build strong levels of commitment and support of achievement initiatives. Once clear goals and objectives were established and supported, superintendents monitored progress and adjusted approaches as the district worked toward targeted achievement. Finally, effective superintendents focused on allocating and implementing resources that supported goals and objectives. Additionally, Black (2007) noted that superintendents should look to reduce instability by remaining in their leadership position for at least 5 years. The author cited findings that superintendents who stay in districts longer are more likely to tackle more pressing, long-term issues that they are able to see through to completions.

Black (2007) related findings that superintendents must cultivate school level leadership able to support district level initiatives through several key tasks. These tasks including setting direction for individual schools that support district initiatives and developing school level leadership and overall buy-in capable of sustaining change. Effective school systems promoted an organizational focus on change, a shift to intrinsic motivators, and the development of collaborative teams and a cooperative school culture.

Finally, Black (2007) emphasized the importance of both school and district level leadership being visible and active throughout educational systems. This included supporting district administrative duties and communications as well as participation in everyday operations of individual schools. More active leadership resulted in greater

building and district level commitment to achievement and greater sustainability during changed in leadership due to a more collaborative model of implementation.

Gurr, Drysdale, and Mulford (2006) focused on building-level capacity. They're research identified three stages to building capacity. First, leaders must encourage staff to take on various leadership roles within the school system. Next, staff should be encouraged to take ownership of their own personal and professional development beyond school. Finally, for schools to achieve effective and sustainable change, they should support and participate in group -level professional learning. Barker (2006) provided additional support for fostering building-level responsibility for school improvement. The author presented a reflective review of one large school districts collaborative leadership approach to improving school performance. In this case study, the principal of a large Washington school challenged staff to collaboratively seek solutions to their failing test scores, rising drop out rates, and poor overall school culture. The author credited the improvement across all fronts to dynamic leadership that challenged staff, sought research based improvements, and worked collaboratively to improve school climate that in turn affected overall teacher impact (Barker, 2006).

To build school capacity, Gurr et al. (2006) considered several different leadership styles and actions to identify behaviors leaders must implement to promote good communication of change and manage the change process. Sustainable change was achieved through promoting a culture of collegiality, collaboration, support, and trust. Successful leaders were also described as fostering a learning-driven culture that

promoted teaching without biases based in ability or student background or demographics. School structure supported by successful leaders included employing a shared decision making process, delegation of leadership roles and responsibilities, and implementing on-going school-wide professional development.

Gurr et al. (2006) identified four aspects of a school vision that successful leaders developed to build ownership and sustainability. First, shared visions must be focused on the individual learner. Next, learning environments must be safe and caring and lead to positive interpersonal relationships. Expectations must also be clear, including expectations for behavior and actions of students, staff, parents, and community members active within the school system. Finally, the scope of the vision must include lifelong learning and community social outcomes.

Leaders who promote sustainable systems change link processes to a variety of outcomes including teaching and learning outcomes, student outcomes, and community social and capital outcomes. Teaching and learning outcomes in sustainable systems promote student responsibility for their own learning including a focus on contexts that are student centered. Student outcomes included achieving individual potential, levels of engagement, promotion and evidence of self-engagement and direction in the learning process, development of individual identities, and an understanding of individual presence as part of a larger learning community (Gurr, Drysdale, & Mulford, 2006).

Gurr et al. (2006) noted that successful leaders addressed social and community based outcomes as part of the educational system. Successful leaders made use of

community resources and took opportunities to contribute to the community success as well.

Gurr et al (2006) found that successful leaders built sustainable systems through promoting reflective activities as well as on-going evaluation and adjustment. This success was achieved through monitoring and reflecting on activities, then making decisions surrounding staff development needs, policy enforcement and adjustments, and conducting critical reflection on school and leadership processes.

The Role of Evaluation by Leadership

The evaluation of teacher performance by leadership provided essential feedback targeted at improving teacher practices and student outcomes. Danielson (2001) identified the two purposes for teacher evaluations as accountability measures and the promotion of individual and systems professional growth. Furthermore, leadership assessments guided daily instruction practices through promoting ongoing reflection and adjustment of teaching (Feeney, 2007). Recent research indicates that traditional “drive by” observations are not effective in improving student outcomes based on instructional practices (Ellett & Teddlie, 2003; Kleinhenz & Ingalvart, 2004; Sinnema & Robinson, 2007). “Drive by” observations were described as observations where a principal conducts a brief unscheduled walk-through or a one-period planned observation where teachers have ample time to plan dynamic lessons. Understanding effective evaluation and feedback methods will assist leaders in more effectively supporting RtI.

With a focus on identifying leadership that supports improved student outcomes, Feeney (2007) sought to define what constitutes quality evaluation and feedback by school leadership. He focused on the quality of feedback provided in evaluations, citing key aspects of feedback including the use of observable data as a basis for constructive feedback, providing clear descriptors and examples of effective instructional practices, and providing opportunities for personal reflection and self-inquiry. Feeney (2007) described quality feedback as key to helping teachers move from average instruction to more skillful teaching evidenced by student outcomes. Quality feedback was more specifically guided by evaluations that encouraged teacher reflection, personal setting of meaningful goals, and a target for personal and professional growth. In other words, quality feedback became a product of both external feedback from leadership as well as the resulting internal feedback achieved through personal reflection and planning.

Toch (2008) emphasized that constructive evaluations with feedback and progressive planning are imperative leadership responsibilities. His research identified three effective leadership evaluation practices including establishing explicit standards, conducting multiple observations, and conducting team observations. Teaching standards should be clearly presented with examples and nonexamples of expectations. Toch (2008) further suggested the use of evaluation rubrics or outlines of performance expectancies. Furthermore, evaluations should include instructional planning and the classroom environment as well as instruction. Linking compensation, career ladders, and improvement coaching were also cited as effective components of quality leadership

evaluation processes. Conducting well rounded evaluations with a focus on constructive feedback that provided opportunity for reflection and adjustment lead to greater useful evaluations for staff.

Multiple measures are a necessary part of effective leadership evaluations (Palazuelos & Conley, 2008; Toch, 2008). Palazuelos and Conley (2008) found that when teachers were given a choice among administrative evaluation, peer evaluation, or portfolio evaluation of instructional practices, they were more likely to implement practices consistently and provide more genuine reflection and adjustments based on selected evaluation style. Furthermore, leadership evaluations were less scripted and targeted specific teacher needs and goals based in school missions and visions. Toch (2008) described traditional evaluations as one-dimensional, focusing on one instance where the teacher is often well-prepared and the classroom environment is planned to be highly dynamic. Toch (2008) favored two-part evaluations that included observations as well as teacher portfolios. Portfolios evidenced lesson planning, instructional materials, student work samples, videos of instruction, and reflections on work experiences including parent, peer, and student interactions. Toch (2008) also emphasized the importance of sharing or expressing content knowledge through topical essays that relate concepts to current issues or phenomena. Using multiple measures afforded teachers the opportunity to demonstrate skills across several instances and strategies.

Employing teamwork to leadership evaluations promotes collaborative, more objective evaluations of teacher performance (Toch, 2008). Toch suggested at least three

formal observations per year, conducted by a collaborative team that may include administrators, “master” teachers, and mentors. Peer assistance and reviews, defined as coaching and evaluation by teachers recognized for excelling in a content area, also reduced leadership demands effectively (Goldstein & Noguera, 2006). It would be important to establish inter-rater reliability to ensure that evaluators were considering established standards consistently.

Leadership and Staff Development

Although school leaders play an imperative role in staff development (Fullan, 2005; Henderson, 2008; Moller & Pankake, 2007), planning school level staff training should be a collaborative process. Engstrom and Danielson (2006) suggested a collaborative approach through implementing a staff development committee consisting of a curriculum specialist, a school level administrator, teachers, and community members (numbers may vary based on school and community size). When designing effective professional development, a committee must base decisions in school specific data, taking curriculum, evaluation, and student performance into consideration (Engstrom & Danielson, 2006).

Teacher surveys revealed that schools that used collaborative processes reported staff development as more effective. Furthermore, school leadership who provided visible support through planning, encouraging collegiality among staff, and promoting teacher-leaders who can serve as school-level experts were viewed as more supportive of professional development (Engstrom & Danielson, 2006). Research by Hickey and Harris

(2005), indicated that leadership systems that promote teacher leadership in staff development, including professional partnerships across districts and within the community, resulted in greater implementation of staff development within rural school systems and greater collaboration within the school building as well as across school systems.

Leadership among School Staff

Teachers often serve in a variety of leadership roles that support or complement administrative roles, thus it is important to understand the meaning of leadership for all school staff members (Donaldson, 2007; Henderson, 2008; Moller & Pankake, 2007; Phelps, 2008). Moller and Pankake (2008) explored how school principals most effectively develop teacher leaders. They identified eight strategies to include establishing and action plan for identifying and developing school leaders, negotiating relationships and roles of teacher leaders, and being readily accessible for consultation with teacher leaders. Principals must also define and provide opportunities to practice and apply leadership skills, support for the development and maintenance of targeted content in which teachers are expected to lead, professional development in leadership skills, and support to prevent scheduling overloads for teachers serving in leadership positions. Finally, Moller and Pankake (2008) suggested that principals must clearly support and address continued positive peer interactions and rapport among all staff. Identifying and preparing school leaders strategically will support administrative leaders and school systems.

Lieberman and Miller (2004) identified three types of teacher-leaders as advocates, innovators, and stewards. Advocates were described as vocal about what they believe will best serve students and the school community. Innovators were those who actually took action and implemented programs to benefit student and the school community. Stewards were described as teacher-leaders who helped to form the entire process and advance the field of education overall. Stewards were active throughout the school and program development, including professional development, program awareness, and through serving as models, trainers, mentors, and/or consultants. Danielson (2006) more clearly defined the roles of teacher-leaders by outlining three common areas where teacher-leaders can have strong quality impacts including the development and implementation of policies and programs, school-wide practices impacting teaching and learning, and the development and encouragement of effective communications and community interactions. Considering types of leaders and where they can be most useful aided in the assignment of teacher-leaders.

Barth (2006) emphasized the importance for teachers to clearly identify their leadership skills and preferences early, during preservice development, to design a coursework history that develops desired leadership awareness as well as identify workplaces that incorporate such leadership. This pre-planning further supports the sharing and accomplishment of school-wide visions and sustainable systems (Barth, 2006).

Phelps (2008) highlighted the importance of understanding the value of teacher leaders, explaining that teachers may more readily influence coworkers on a daily basis, compared to administrative leadership who interact with staff on a more supervisory level. Research indicated that teachers often share a common desire for student and school success that include a desire to influence others to be more effective (Ackerman & Mackenzie, 2006; Hickey & Harris, 2005). Fullan (2001) would refer to this as part of his “moral leadership” theory as a necessary part of successful and sustainable systems.

To become effective leaders, teachers must develop a knowledge base beyond school processes, to include a stronger understanding of change within educational systems as well as an awareness of school climates and culture (Fullan, 2001). Teacher-leaders must understand the process and impact of effective vision statements, the actions that support them, and the thoughts and emotions that others might have toward school practices and systems change (Engstrom & Danielson, 2006; Fullan, 2001). Two other key characteristics of effective teacher-leaders, identified within the research, include decision-making related to risk-taking, and resiliency (Barth, 2006; Patterson & Patterson, 2004).

Application of Leadership Research to RtI

Leadership responsibilities have increased greatly over time, from a role that supports teacher practices and community partnerships to a business leader model that manages school operations, performance outcomes, increased regulations, and more (Gurr, Drysdale, & Mulford, 2006; Hite, 2006; O’Donnell & White, 2005). To effectively

support a RtI systems approach, effective leadership must start by establishing clear intentions through incorporating RtI into the schools mission and vision. Goals for implementation must align with the mission and vision to ensure implementation is effectively achieved (Black, 2007; Frymier-Russel, 2008). Furthermore, leadership who demonstrate shared values and beliefs regarding the importance of RtI as part of the schools educational systems, will achieve greater support and commitment to implementation (Gurr, Drysdale, & Mulford, 2006).

School leaders must demonstrate clear support of RtI as part of their operating systems (Frymier-Russel, 2008). O'Donnell and White (2005) indicated that more active participation throughout the RtI process. Leaders must demonstrate support of innovative practices (Hoffman & Johnston, 2005) such as collaborative intervention models, differentiated instruction, and effective use of progress monitoring to inform instruction. Leaders need to support collaborative school processes that promote interactive learning and implementation (Brooks, Hughes, & Brookes, 2008; Frymier-Russel, 2008). This support can be accomplished through planning and supporting staff development grounded in school needs, staff growth opportunities, and student outcomes (Engstrom & Danielson, 2006; Fullan, 2005; Henderson, 2008; Moller & Pankake, 2007). A system that supported leadership from among teaching staff, lead to greater ownership of building level operating systems (Donaldson, 2007; Henderson, 2008; Moller & Pankake, 2007). To develop effective teacher leaders, school administrative leadership should ensure that sufficient knowledge in RtI is developed among staff selected. These staff

members must then be given sufficient opportunities to apply and practice RtI leadership skills, and they must feel supported by administration in serving as leaders and in maintaining peer relationships (Moller & Pankake, 2007).

Evaluation of teachers is a necessary part of administrative leadership roles. If RtI is incorporated into this staff evaluation process, evaluations can serve as an effective tool for improving fidelity of implementation. A review of the literature indicated that professional evaluations that focused on student data and multiple methods for evaluating performance are most effective in improving teacher commitment, performance, and student outcomes (Ellett & Teddlie, 2003; Kleinhenz & Ingalvart, 2004; Palazuelos & Conley, 2008, Sinnema & Robinson, 2007; Toch, 2008). Research by Palazuelos and Conley (2008) would suggest that evaluations of the RtI process that included administrative and peer observations, supported through reflective and goal setting activities, as well as development of portfolio demonstrations of performance, are the most effective methods for establishing teacher commitment and accountability.

When considering the components of RtI implementation, the current research base would suggest that the greatest leadership impact on implementation of RtI would occur in comprehensive commitment and support, self-assessment, and progress monitoring. Comprehensive commitment and support is developed through effective planning, support of ongoing staff development, and visible support through awareness and evaluation of ongoing RtI processes. Self-assessments and progress monitoring would best be addressed through comprehensive and collaborative evaluations systems

that specifically include RtI as part of the evaluation process. While participation in all aspects of the RtI process can bolster comprehensive commitment and support, research would indicate that developing teacher-leaders who can support program development and implementation, including school-wide understanding and implementation of the three-tiered process, can effectively build sustainable systems with greater school-wide ownership of the process. Administrative leaders may best achieve sustainable RtI systems through careful planning, professional development support, promotion of innovative and research-based practices, clear communications, and targeted evaluations of implementation. In addition to this, administrative leaders should seek to develop and support teacher-leaders who can promote accountability throughout school staff to a degree that makes the systems change sustainable.

Staff Development Research

Effective staff development has become an imperative part of supporting educational practices in an environment where learning needs and teaching efforts may undergo regular changes (Gersten, Baker, & Chard, 2000; Senge, Cabron-McCabe, & Lucas, 2000). Simply participating in staff development does not consistently lead to effective implementation of the content learned. Gersten, Baker, and Chard (2000) found that staff development, much like school-based instruction, must take into account teacher interests, willingness to commit to the change, and personal beliefs about effective practices. Coleman (2000) indicated that professional development must emphasize collegiality, acknowledge teacher skillsets, and promote extension of effective

practices. When these aspects were emphasized in staff development, both studies yielded higher levels of teacher confidence in learned techniques and increased self-report of implementation with fidelity.

Staff Development Needs in RtI

RtI is, in essence, a dramatic paradigm shift from many of today's school operating systems. As a result, the roles of staff members will also change, requiring new staff development needs (Kratochwill et al. 2007; Richards et al., 2007). Bradley, Danielson, and Doolittle (2007) found that general education teachers were expected to play a larger role in screening and data-gathering processes and tier one interventions, calling for targeted staff development, in these specific areas, for a significant number of teaching staff. This evaluative and intervention role may also extend into tier two as school systems determine effective roles of general and special educators. In some instances, schools have opted to have special educators serve as co-teachers or consultants, reserving more direct intervention services for the third tier (Gerber, 2005; Richards et al., 2007). Bradley et al. (2007) indicated that teachers, including special education teachers, will also require training specific to research-based, tier-three intervention, progress-monitoring, and identification of disabilities using the RtI process.

Training may come from a variety of sources including school psychologists, special educators, speech therapists, behavior consultants, and pre-selected trained interventionists. It may be achieved through direct professional training as well as through consultation and coaching. Richards et al. (2007) found that, for teachers to be

effectively prepared for this systems change, both pre-service and ongoing in-service training must occur; and it must address both data-driven decision-making and intervention processes. More specifically, staff will require specialized training in developing and using valid progress monitoring tools, progress monitoring and evaluations, and research-based interventions (Bradley, Danielson, & Doolittle, 2007; Gerber, 2005; NRCLD, 2007).

In addition to targeted training, Richards (2007) found that opportunities for collaboration and communication between staff as well as between schools and school systems increased application of training in the classroom. He indicated that this collaboration can be achieved through coordinated planning times, clearly-established training focus calendars, and through developing partnered school observation and reflection opportunities (Fullan, 2005; Richards, 2007).

Models of Staff Development

Scanlon's et al. (2005) research identified five different models of staff development to include individually guided staff development, observational assessment, the development and improvement process, inquiry-based learning, and training. Each of these models can be seen during some part of the RtI process.

Individually guided learning occurs when an individual recognizes a personal need and conducts self-initiated learning to fill this deficit. This type of personal development assumes that individuals will self-direct learning and instructional processes and recognize the need for such personal development readily. Scanlon et al. (2005) did

note that when teachers do self-initiate professional development, they are more likely to follow-through and implement changes because they have a greater level of ownership for the learning. In RtI, this may occur as teachers adjust to student needs and implement a variety of tier one interventions to address student needs. Kratochwill et al. (2007) emphasized that this process needs to target research-based practices. Molseed (2000) approached individualized learning earlier in the teacher development process. The author worked with pre-service teachers as part of their preparation for teaching. College teaching students were asked to identify key areas and roles they anticipated as part of their teaching career path. They collaboratively developed a teachers' manual of best practices grounded in current research based on these identified roles, interests, and areas of teaching. Molseed (2000) found that teachers felt more confident and prepared, ready to implement a variety of practices based on situation and needs. This would suggest two opportunities for staff development: first, preservice development might promote greater teacher readiness immediately on hiring, second, more specific to this study, collaboration and consistent interaction with current literature on effective practices, may help teachers be more prepared for the instructional expectation in systems change.

Observational assessment was the next type of training identified by Scanlon et al. (2005). In observational assessment, learning occurs when teachers observe each other, or when teachers are observed by a content or instructional expert (Scanlon et al., 2005). This method is traditionally conducted as evaluations or clinical supervisions, with a target of improving or modifying instructional practices. However, with the growth of

professional learning communities, this method is emerging in professional development practices as an opportunity for teachers to interact and develop skills more collaboratively through cross-curricular or teacher-teams observations where both the observer and observed discuss what was learned, how to apply learning, and how to improve (Fullan, 2005). In RtI, observational assessments may take the form of data gathering, or intervention consultation.

The developmental improvement process style of learning is the next type of training identified by Scanlon et al. (2005). This type learning operates on the assumption that teachers will learn more effectively when they are working closely with others with strong content knowledge, and who have a clear understanding of what is needed to improve performance. The authors stated that teachers learn more effectively when they share a desire to understand, grow, and problem-solve (Scanlon et al., 2005). This model of learning relies heavily on the problem-solving process and clear planning for professional growth. This can occur at an individual or group level. Scanlon et al. (2005) emphasized that this process is most successful when supported by an administrative component and when a measure of successful learning is in place. Porter et al. (2000) found similar results when researching the effectiveness of collaborative staff development. When staff development took the form of building level studies through teacher networks, literature reviews, and study groups, teachers achieved greater understanding and improved implementation compared to traditional lecture and limited practice styles of professional development. RtI teams often use this model of

development when problem-solving and developing intervention plans for targeted students as well as when they develop school level processes and provide consultation in classrooms (Wright, 2007).

Inquiry-based learning, the next style presented by Scanlon (2005), occurs when teachers evaluate their own practices, formulate questions or areas to develop knowledge, and then pursue answers to those questions or pursuit of knowledge (Scanlon et al., 2005). In this learning style, a problem is identified, then data collection methods are chosen from a variety of media and sources. Once data has been gathered and evaluated for good fit, the new learning should be applied in the classroom and new data should be gathered to evaluate effectiveness of implementation. Inquiry-based learning is often pursued by classroom teachers looking for effective targeted solutions. It might also be seen as part of an RtI brainstorming process when identifying appropriate targeted interventions.

Training is the most commonly used approach to staff development, but Scanlon et al. (2005) noted that it is not perhaps the most effective model. Training is designed to target a specific new teaching method or instructional program, however, opportunities to practice realistic classroom implementation is often limited or difficult to generalize to a specific, unique student population. Furthermore, most training models are conducted in a lecture format with visual models, again with limited opportunities for application or reflection (Gersten, 2000). This model is often used in RtI to teach general overviews of

RtI and its guiding concepts as well as to teach targeted or global intervention methods to a large group of educators.

Based on the strengths of each of these types of training, Scanlon et al. (2005) developed an interactive model of staff development grounded in seven interactive instructional principals. First, training must activate the teacher's prior knowledge. Then new knowledge must be tied into this existing knowledge and any new concepts must tie in with each other to establish a flow of information that can be retained (Brown-Chidsey & Steege, 2005; Scanlon et al., 2005). From this, teachers should be able to develop predictable relationships of information through the use of cooperative learning and sharing of knowledge. Scanlon et al. (2005) emphasized that learned concepts must be related to the targeted context, and relationships among concepts must be justifiable. Finally, interactive staff development must target opportunities to confirm an understanding of what was learned and the ability to generalize it to classroom practices. Brown-Chidsey and Steege (2005) identified several effective interactive staff development methods through their study, to include role-playing, group discussions, case studies, collaborative problem-solving, coaching, mentoring, co-teaching, inter-staff observations, and self-evaluations. From this study, Scanlon et al. (2005) found that teachers demonstrated a deeper understanding of targeted learning through the interactive process and that teachers were able to more accurately implement what they learned with fidelity. Based on analysis of qualitative data, they further concluded that this new interactive approach to staff development lead to a greater commitment to learning

through staff development, more confidence in effective implementation, and improved collegiality and collaboration in general. Mihalic et al. (2004) found similar results, adding that the professional development process must be planned throughout, including research and design of a program specific to the school needs, encompassing an understanding of underlying philosophies and research. They identified administrative and community support as imperative to professional development success and implementation, as well as having a clear direction for implementation processes and targets.

Brown-Chidsey and Steege (2005) defined the learning process more specifically to RtI, stressing the importance of scheduling, identifying learning outcomes, and clarifying what indicates mastery of implementation of RtI processes. They evidenced stronger retention and implementation when training occurred over several sessions, each time building on prior knowledge and previously learned, training-specific concepts. This should begin with an overview, then followed by more specific concepts, with ample opportunities for review and interaction. Based on this information, all training should be explicit and clearly establish the targeted outcome and expectations of implementing an RtI framework. Training should present research-based interventions, including how to identify and select instructional methods. Specific selected curriculum and assessment and progress monitoring methods should all be taught in separate sessions, with the objectives of each session clearly stated at the beginning and end of each session. Finally, training must always conclude with opportunities to demonstrate mastery as well as the

establishment of a clear understanding of how on-going implementation fidelity will be measured.

Staff Development Impact in Rural Schools

Eady and Zepeda (2007) looked more closely at the impact of staff development requirements on rural school systems budget and teacher's perceptions, as well as the impact on school practices. They began by identifying the limited research targeting the impact of federal mandates on rural school systems. Chance (1993) considered the impact of educational reform movements on rural education systems citing that the cost of compliance often led to financial burdens as a result of school size (inability to gain discounted training), isolation impacting access to training, and limited available finances based on per pupil financing. Kannapel and DeYoung (1999) found that some mandated reforms were not even necessary across all educational systems, arguing that these mandated reforms often take the form of "cookie cutter" programs that may not be effective across all school systems. They found that reforms were implemented differently in all systems observed and that they were not necessarily implemented according to training. Furthermore, they did not achieve targeted outcomes in most rural systems. These findings must be interpreted with caution for several reasons included depleted implementation with fidelity and possible impact of personal beliefs on participation and implementation of change.

Eady and Zepeda (2007) found that, in the rural schools observed, effective implementation could only be measured by performance on standardized tests thus staff

development often focused on whether a practice would improve standardized tests. They also found that the most meaningful collaborative activities related to implementation occurred as administrative observations and supervisory activities. The authors concluded that rural isolation impacted delivery, implementation, and evaluation of staff development. Limited funding further impacted both the ability to implement mandated change and staff perceptions of these mandates.

Mujis (2008) looked more closely at opportunities to build collaboration among rural school systems and the impact on professional development and program implementation. The author conducted a literature review and qualitative study exploring the impact of rural schools cooperative learning practices on student performance outcomes and teacher perceptions of collaborative staff development. The focus of this study was on rural schools that evidenced low-performance and limited staff development with higher achieving schools. Staff development occurred in a collaborative model where schools partnered to evaluate low-performing schools' needs and develop appropriate developmental goals and activities including interschool observations, partnered study groups and targeted trainings. The author's reviews and qualitative feedback received indicated that, when collaborative staff learning took place, student performance improved, professional development activities increased and were viewed more positively, teacher knowledge and skills increased, and some schools indicated greater parental involvement in student learning.

Limitations to Staff Development

The primary limitation currently challenging RtI training is the limited research-base specific to this systems change (Brown-Chisdey, 2005; Cook et al. 2003, Kazdin, 2004; Kratochwill, 2007). While many of the components of RtI are present throughout educational research, such as curriculum-based measurement, targeted interventions, inclusion, differentiation, and systems change; research literature specific to RtI is not yet thorough. In addition to this, pre-service training and in-service preparation methods necessary to implementing research-based prevention and intervention are inconsistent (Kratochwill & Shernoff, 2004; Shernoff, Kratochwill, & Stoiber, 2003).

The need for preservice training extends to regular teacher preparation for diverse classrooms as well. Landrum and Kauffman (2006) found that preservice and in-service training specific to developing classroom management options was limited. This may be in part due to building-, instructor-based, or teacher-based preconceived notions or biases surrounding certain instructional or behavioral practices (Heward, 2004). Begeny and Martens (2006) considered the pre-service training and readiness of master's level general and special education teachers in terms of instructional practices to target diverse learners, behavioral supports, and progress monitoring processes. They indicated that respondents felt their training in instructional programs and practices such as differentiated and direct instruction, as well as curriculum-based assessments and progress monitoring, were insufficient to prepare them for their classrooms or for the larger system of RtI.

Hallfors and Godette (2002) looked more closely at implementation of best practices in systems change staff development across 104 schools in twelve different states. They specifically studied staff development practices targeting the implementation of systems change grounded in a research-based program. The authors found that implementation rates were extremely low, with only about one out of five schools actually implementing the adopted program with some degree of fidelity. Three reasons were presented for this: insufficient training materials for staff to learn with and refer to, limited preparation in a variety of teaching strategies, and insufficient preparation with age-specific instructional materials and processes. Access to high quality, applicable training materials lead to greater fidelity of implementation and sustainable systems.

A Synthesis of Professional Development Needs

Professional development, whether in the form of pre-service, in-service, or personally selected development, requires a well-planned, multi-faceted approach. This process should take planning, training, implementation, and follow-up into consideration as part of a cyclical staff development process. It begins with developing a strong background knowledge surrounding research and philosophies related to the process (Kratochwill et al., 2007; Milhalic et al., 2006; Scanlon et al., 2005). An evaluation of site readiness and organizational capacities should also be part of these preparatory practices (Kratochwill et al., 2007; Milhalic et al., 2006) Administrative and community support improve the likelihood that staff will see value in the training and also improve the likelihood that programs will be implemented with fidelity. This support must be

evident throughout the process from concept development to evaluation and adjustments in implementation (Eady & Zepeda, 2007; Mihalic et al. 2004). Having at least one strong leader who is knowledgeable and supportive throughout the process serves as motivation and quality assurance through promoting and supporting greater fidelity of implementation (Fullan, 2006; Kratochwill, 2007). Multi-faceted training with leadership and community support may aid in overcoming some training barriers.

To ensure systems change and implemented programs achieve a strong level of fidelity, staff development must be multi-faceted (Scanlon et al., 2005). It should be justified according to a specific need that participants are prepared to fill. New training must tie into previous knowledge to give meaning to newly learned concepts, and teachers must see a connection across the entire new process (Kratochwill et al. 2007; Scanlon et al., 2005). In addition to this, there must be sufficient access to training materials appropriate to the teachers instructional group (Hallfors & Godette, 2002), and ample opportunity for collaboration and improved collegiality (Coleman, 2000; Scanlon et al., 2005).

Finally, evaluation and adjustment of system processes must be part of the continual staff development and systems change process (Eady & Zepeda, 2007, Fullan, 2005; Kratochwill et al. 2007). Evaluations may take the form of supervisor observations and reflective activities, providing opportunities to identify continued staff development needs and to establish both building-level and teacher specific goals (Eady & Zepeda, 2007). Evaluating systems processes can also be achieved through collaborative teacher

observation and reflection activities where teachers participate in cross-curricular or cross-classroom/school observations, followed by opportunities to reflect on what was learned, how things may be done differently, and to ask any questions to further understanding (Porter, 2000; Scanlon et al., 2005).

Some areas of RtI must be addressed directly within the training model. Staff development must include research-based practices and interventions (Fuchs & Fuchs, 2007, Kratochwill et al. 2007), the understanding and implementation of a multi-tiered model (Fuchs & Fuchs, 2007) understanding and implementation of screening and progress monitoring using probes and curriculum-based assessments (Shinn, 2007), procedures for implementing with fidelity (Brown-Chisdey & Steege, 2005; Kratochwill et al. 2007), strong support across all systems levels, and an in-depth understanding of the RtI framework (Kratochwill et al. 2007).

Research Methods and Materials

Research methods and materials were considered in terms of the targeted population, research variable, and opportunities for significant social change. This included reviewing research design, tools and statistical analyses. Decisions were made based on current research, the purpose of the study, current state-recommended practices, pilot study outcomes, and, statistical guidance.

Study Design

This study followed a descriptive quantitative research design, seeking to identify possible relationships between RtI levels of implementation, and staff development and

leadership roles, both of which were identified by rural school leaders as high interest concerns. A descriptive model was selected as this study only gathers data in one instance rather than implementing a pre- and post-test. While this design calls for a larger sample size, it is assumed that this larger sample size will allow findings to be more easily generalized. Case studies provide a clear opportunity for smaller sample sizes as well as a sound starting point into areas where the current research is limited (Schloss & Smith, 1999). Case studies provide examples of successful implementation practices as well. Bernhardt (2009) conducted a case-study demonstrating how one school applied data-driven decision making practices to improve instruction and intervention practices, to progress monitor, and to track student progress. Mujis and Harris (2007) considered how administrators determined personal roles and delegated roles based on unique school dynamics, using a mixed-study design that provided quantitative role identification data and qualitative decision-making feedback based on the circumstances and demographics of each of the three schools studied. Although case studies are sound methods for contributing new information to a field, the descriptive quantitative design more efficiently addressed the research questions posed in my study.

The goals of this specific study were to develop an overall basic understanding of resources and roles, within rural schools, that are necessary to achieve improved levels of RtI. Case studies have provided valuable guidance regarding best practices, staff development, leadership, and measurement while providing a depth of insight as well (Johnson & Christensen, 2004). However, to achieve the degree of social change targeted

by this study, a larger sample size, indicative of the target population, was necessary to provide clearer guidance to, and representation of, rural school implementing RtI systems, leadership roles, and staff development needs.

Data Analysis

Data will be analyzed using a forward stepwise regression. A stepwise regression allows me to develop the best regression equation while also considering all of the predictor variables. The forward stepwise regression allows me to minimize the number of predictor variables to an amount that most closely accounts for most of the variance that is explained by the total set. This helps consider how important every predictor variable is (Tabachnick & Fidell, 2001).

Research Materials

For the purpose of this study, RtI level of implementation was measured using the Self-Assessment and Problem Solving Inventory (SAPSI), 2nd version, developed by Loyola University (Carrion, 2007). The SAPSI was developed to evaluate building level implementation of practices related to problem-solving and the RtI process. The inventory was designed to be administered up to three times per year to inform project evaluators of building level needs and progress based on an on-going source of data. A more in-depth description of the SAPSI is provided in Chapter 3. Initial reliability and validity data indicate that the SAPSI is a highly efficient tool for evaluating the problem solving process as related to RtI. Statistical reviews of the data gathered across 27 sites indicate that the tool as a whole, as well as the individual subscales reliably indicate

school levels of RtI implementation (Carrion, 2007). Furthermore, raters within each site demonstrated a high level of inter-rater reliability.

I designed the two additional survey measures (related hours of staff development and related leadership activities). Both scales targeted direct data related to each subset of the SAPSI and RtI processes and only require the respondent to provide ordinal or scaled data. The leadership roles survey provided a list of common activities school principals and superintendents may fill in rural school systems. Respondents simply marked all of the roles leaders (principals and/or superintendents) play within their RtI system. The hours of training measured hours of training across all six components of RtI, as identified in the SAPSI, v.2. Types of staff development considered included professional training, ongoing staff development, and follow-up training. Both surveys were developed using panels of school leaders and teachers and a pilot study was conducted in three rural school districts' schools. Further information regarding these scales can be found in Chapter 3.

Chapter 3: Research Method

To address the research questions proposed in this study, both staff training and leadership roles must be viewed beyond the current literature. I considered if there was a relationship between two predictor variables, leadership roles and staff training, and level of implementation based on a state-recognized tool. In chapter 3, I will revisit the purpose of the study, provide descriptions of instrumentation, population sampling and research methodology including recruiting participants, survey administration, and data analysis procedures.

Purpose of the Study

The purpose of this study was to consider staff development and leadership roles in relation to building level of implementation of the RtI model in a rural school setting. This study was developed to determine the relationship between areas of training, leadership roles, and RtI implementation levels in a rural school. Information from these assessments may help rural staff to implement RtI with fidelity, and inform school leaders to support implementation of RtI within their rural school systems.

Research Design

A descriptive quantitative design was selected to address the research questions for this study. Survey research was conducted to gather data and compare results using regression statistics. The survey design was the most efficient way to gather information from the targeted sample population selected from throughout the targeted state, spread out across rural areas. Regression research included the opportunity to compare the data

in a variety of ways to identify possible relationships between variables. In this study, regression analyses allowed the consideration of overall or specific leadership roles and staff development types related to overall level of implementation as well as implementation within specific aspects of RtI. Descriptive quantitative designs and regression designs call for larger sample sizes. This design was achievable through the survey data collection method.

One limitation considered was that large quantitative survey designs with targeted response selections limit depth in response, reducing the level of implied causality. However, in this study, I did not attempt to define or identify causality; rather I sought to identify relationships. This study may provide groundwork for future studies that deepen the information through case studies or qualitative designs.

Population Sample

Target populations were selected using the Colorado Department of Education definition of a rural school. Schools meet the definition of rural when the district's average daily attendance is less than 600 students, or the district's county has a population density less than 10 persons per square mile, and which have a locale code (distance from a city) of 6 or 7 (U.S. Department of Education, 2008, and U.S. Department of Agriculture, 2004). Eighty-five school districts met the definition of a rural school district in 2007 (Colorado Department of Education, 2008). Within these school districts, there are a total of 38 elementary schools, 20 middle schools, 23 high schools, 5 combined elementary/middle schools, 21 combined middle/high school, and

29 K-12 schools. The target participants were identified as the RtI team members representative of each school level (elementary, middle, high, or some combination).

In determining sample size for this study, the data analyses were evaluated in terms of power, effect size, and alpha. Sample size was considered according to each analysis to determine the minimal sample size necessary to consider results significant. For a stepwise regression with 11 predictor variables, a medium effect size, and a .05 significance level, the appropriate sample size was set at 123 participants. RtI team members were sampled from all levels: elementary, middle school, high school, and combinations, as many of the rural school RtI teams serve all more than one level. Using multiple school levels and combinations was necessary to achieve a usable sample size.

Instrumentation

I attempted to consider possible relations between school levels of RtI implementation and two different predictor variables. Amounts of training and school leadership roles were considered separately, as they related to the overall level of implementation. Three separate surveys were combined into one omnibus survey to collect uniform data. Survey questions which addressed the variables, extent of staff training and leadership roles, were designed specific to this study and included basic questions related to training within the components of RtI implementation and the leadership roles targeted within each of these components. The Self Assessment Problem Solving Inventory, 2nd version (SAPSI v.2) served as the measure to determine level of implementation of RtI.

Hours of Training Survey

The survey of RtI hours of training was the first measure within the omnibus survey. The survey consisted of 6 items, with 3 imbedded questions in each, measuring the hours and types of training each respondent participated in. The purpose of this survey was to provide a measure of hours and types of training that may be associated with overall levels of implementation, indicative of where training focuses were currently directed within participating school systems. Questions specific to hours of training included continuous scale responses to hours of training within each element of RtI identified in the SAPSI v.2. These included comprehensive commitment and support, establishing and maintaining a team process, implementing a three-tiered system, conducting self-assessments, implementing evidence based practices, and monitoring and action planning. Respondents were asked to identify the number of hours of training they participated in within each target area, to include professional/expert training, school-based staff development, and follow-up activities.

Hours were totaled for each element so scores could be compared by type of training as well as training totals for each of the six elements. Professional training consisted of training by subject experts. Staff development was defined as training conducted within the school system, specific to school-level implementation. Follow-up training targeted a specific need to improve implementation of the specific component. These definitions were included within the survey to provide clear guidance to respondents. The survey design allowed the researcher to consider both type of training

(professional, school-based staff development, or follow-up training) as well as area of training in each of the six components as they relate to overall level of implementation. It did not consider quality of training; rather it measured where current training focus was placed.

This survey was piloted in three rural schools in one district using a test-retest model to establish reliability. Twenty respondents from rural elementary through high school RtI teams participated in the study. Results indicated high levels of test-retest reliability at the 95% confidence interval ($r = .969$). The survey was considered to have face validity as each item was a direct measure of the target data of hours of training within each of the six components. A panel of 13 persons, including RtI coordinators, consultants, and interventionists further rated items as essential or non-essential to measuring hours of training within the six components. The content validity formula, $CVR = (n_e - N/2)/(N/2)$, generated a content validity ratio score of 1. The survey of RtI hours of training questions can be viewed in Appendix A, within the first section of the omnibus survey.

Leadership Roles

The leadership roles survey consisted of a basic list of eleven leadership activities, identified within the SAPSI v.2 and associated with the leadership process to include planning training, scheduling training, participating in training, planning school level implementation, building school level knowledge and commitment, recruiting and selecting problem-solving teams, participating on problem-solving teams, promoting

parental involvement, including RtI criteria as part of the staff evaluations process, implementing follow-up training regularly, and implementing targeted follow-up training opportunities based on needs. Respondents were instructed to simply check those activities or roles that they observed school leadership (i.e. principal or assistant principal) participating in regularly. These items were scored as a 0 (zero), indicating non-participation, or a 1 (one), indicating regular participation. Regression data were considered for each item compared to overall level of implementation. Scores for each item were considered for relation to level of implementation to determine if specific leadership roles are related to overall level of implementation. I did not address quality of leadership participation in this survey, rather I identified which leadership roles were being filled by school level administrators, as part of the RtI process, to determine which, if any, roles were more closely related to higher levels of RtI implementation.

This survey was developed with a panel of 20 persons, including superintendents, principals, vice principals, and directors within one regional Board of Cooperating Education Systems (BOCES). Construct validity and inter-rater reliability were established based on the 20 panelists ratings of each item as essential or non-essential measures. The Fleiss' kappa formula for inter-rater reliability, $K_f = \frac{p_a - p_r}{1 - p_r}$, was applied to measure inter-rater reliability, using two categories (essential, nonessential), with the eleven survey items and twenty raters. Fleiss' kappa test of inter-rater reliability indicated strong inter-rater reliability ($\kappa = .838$). Using the construct validity ratio formula, $CVR = \frac{(n_e - N/2)}{(N/2)}$, all eleven items met a minimum cvr of .5 or higher (average cvr = .86).

The survey of leadership roles can be viewed within the second section of the omnibus survey located in Appendix A.

Level of Implementation

The Self Assessment Problem Solving Inventory (SAPSI v.2) was designed by Loyola University to specifically evaluate level of implementation of RtI in schools (Carrion, 2007). The inventory was designed to be administered up to three times per year to assess ongoing progress and to promote improved fidelity of implementation. The SAPSI is divided into six sections identical to those identified in the training survey: comprehensive commitment and support, establishing and maintaining a team process, implementing a three-tiered system, conducting self-assessments, implementing evidence based practices, and monitoring and action planning. Each item has descriptive information that clearly defines expectations within the targeted area. Each section also includes sub-items that more clearly define activities related to implementation within that area.

Each section, including sub-items, was scored according to a Likert scale scored as Not Started (N, scored as 0), In Progress (I, scored as 1), Achieved (A, scored as 2), or Maintaining (M, scored as 3). The survey consisted of a total of 32 items. Scores on each Likert item were added together to get a total score ranging from 0-96. A Chronbac's alpha of 0.9528 and an inter-item correlation of 0.3868 indicated that this is an effective and reliable tool for measuring problem-solving processes and implementation practices central to high levels of RtI implementation (Carrion, 2007).

Reliability and validity data were not gathered by item or according to each of the elements. Only the overall implementation score was analyzed. The SAPSI v.2 items can be viewed within the third section of the omnibus survey located in Appendix A.

Limitations to be Considered

While the two initial surveys require self-report, information requested was straightforward. Hours of training provided clear instruction by defining the area and type of training and requiring a precise response of number of hours. Guidance was provided for district or state trainings that did not identify specific hours. Leadership roles was intended to directly consider the respondents perception of leadership visible participation in each item. Although this design allowed personal interpretation of participation, I found that the pilot study revealed that raters within the same school presented high rates of inter-rater reliability. Finally, the SAPSI v.2 was also based on self-report. Error was controlled for by limiting participants to those who have participated in the RtI process for at least two years. The SAPSI v.2 has been used as an implementation evaluation tool across the State for this period of time.

Research Methodology

The omnibus quantitative survey was administered over a period of two weeks via electronic submission. Based on the identified sample size, participants were solicited in a top-down recruitment. School-level administration identified appropriate staff participants and provided opportunities for survey completion. Once the minimum sample size was achieved the raw data were analyzed using stepwise regression analyses.

Participant Solicitation

IRB approval was obtained for a period of one year beginning April 14, 2010. The IRB approval number was 04-14-10-0321549. Permissions to solicit participants within these rural school districts was assumed when superintendents forwarded the research link to building level administrators. Electing not to forward the link was identified as an option for not accepting research solicitation. Building level principals identified appropriate staff members for participation based on research participant criteria. Respondents were informed of the research intent and opportunity to discontinue participation at any time without ramifications.

Data Collection

Participants were then invited to participate in the study. The omnibus survey was preceded by a statement of participant rights, including the right to withdraw from participation any time during completion of the survey. Withdrawal from the study after submitting the survey was not possible as surveys were in no way affiliated with the individual respondent. Completion of the survey communicated consent to participate. This method of consent was identified within the electronic survey introduction to the study.

Instructions were presented in written format to ensure consistency of administration. Respondents were given 6 weeks from the date of original invitation to complete the survey, with a reminder email or phone message given after 2 and 4 weeks. This timeframe was not needed as the target sample size was achieved within 2 weeks. There

was no time limit to complete the survey once the respondent opened it. This allowed for respondents to gather staff development information if necessary, to gain more accurate data. Electronic data were immediately accessible by I.

Participant Confidentiality

Participant confidentiality was maintained through both survey actions and storage precautions. Survey participants were identified by school leadership and invited to participate based on leadership provision of survey access online or hand delivery of the survey. Neither school sites nor respondent names were associated with surveys. For this reason, respondents could not request that their survey be recalled after submission. On completion of the research, all raw data was stored on an electronic mass storage device or in sealed document envelopes and maintained in a locked cabinet in my residence. Steps to protect respondents' identity were provided at the start of the survey.

Data Analysis

Leadership roles for each item within the scale were scored as 0 (zero) if the role was not evident or 1 (one) if leadership evidenced the identified role regularly. Each item was considered separately. No total score applied to this survey. Staff development hours of training were presented as a continuous scale of training hours within each component of RtI and were considered individually as well as according to each component. The SAPSI v.2 was scored according to published scoring procedures, producing a scaled score of implementation from 0-96. Relationships between each component of the predictor variables and the overall criterion variable were considered.

Data were analyzed using SPSS version 15.0 for Windows. To examine hypotheses 1 and 2, a forward stepwise regression was conducted to assess if school leadership roles (planning training, scheduling training, participating training, planning implementation, building school commitment/knowledge, problem solving recruitment, problem solving participation, parental involvement, RTI evaluations, regular follow-ups and targeted follow-ups) and/or hours of training across the six RtI components predicted total intervention level. In this case, the predictor variables were the 11 school leadership roles taken from the Leadership Roles Survey and total hours of training within each of the 6 RtI categories. Implementation of RtI was the criterion variable. All data are presented in Chapter 4, and are explored and discussed in Chapter 5.

Chapter 4: Results

This study considered the possible relationships between the leadership roles that administrators play in the RtI process and overall RtI level of implementation within rural schools. It also considered possible relationships between types and hours of staff development among the components of RtI and overall RtI level of implementation in rural schools. The targeted sample population was rural school RtI teams throughout the State of Colorado who have participated in the RtI process for at least two years. This chapter was organized to address the specific research questions proposed in Chapter 1 by presented research tools, sample demographics, a presentation of descriptive, reliability, and correlative data, and a summary of findings.

Research Tools

Three separate surveys were combined into one omnibus survey to be presented in an online format. In the first section of the survey, Hours of Training Survey, respondents reported how many hours of training they participated in across 6 components of RtI. Reported hours of training included professional development, staff development, and follow-up training related to included comprehensive commitment and support, establishing and maintaining a team process, implementing a three-tiered system, conducting self-assessments, implementing evidence based practices, and monitoring and action planning. The second section of the survey, Leadership Roles Survey, consisted of 11 roles identified by leaders as part of their responsibilities within the RtI framework. Respondents rated each item as yes or no, whether an administrative filled the role within their RtI framework. The final section of the survey consisted of the Self-Assessment

Problem Solving Inventory, 2nd Version. Respondents identified how well their school currently implemented practices across the 6 components of RtI. Items were rated as Not Started, In Progress, Achieved, or Maintaining.

Sample Demographics and Descriptive Data

Demographics considered included participant age, gender, and years experience. Criteria for exclusion were also addressed in this section. Descriptive data were presented for each of the three surveys: Hours of Training, Leadership Roles, and SAPSI v.2. Descriptive data included percent of respondents rating each item for leadership roles, as well as means and standard deviations for each type of training and the overall level of implementation scores. Finally, reliability is presented for the predictor variables using Cronbach's alpha.

Participant Demographics

One hundred and forty-eight individuals participated in the study. Eleven participants were eliminated due to incomplete surveys. An additional seven participants were eliminated due to reporting less than two years experience on an RtI team. One hundred and thirty-one respondents met criteria for this study, and of these 100 (76.9%) were female and 29 (22.3%) were male (two participants did not respond to the gender item). The average age of respondents was 34.35 years. For the number of years participants had been involved in the RtI model, the majority of participants endorsed two years (72, 55%), followed by three years (53, 40.5%). Few participants endorsed the longer time category; four participants (3.1%) endorsed four years and two participants

(1.5%) endorsed five or more years. The frequencies and percentages for gender and years of RtI involvement are presented in Table 2.

Table 2

Demographic Characteristics of Participants

Characteristic	<i>n</i>	%
Gender		
Male	29	22.3
Female	100	76.9
Number of Years in RtI		
Two years	72	55.0
Three years	53	40.5
Four years	4	3.1
Five or more years	2	1.5

Survey Descriptive Data

The RtI level of implementation total score (obtained from the SAPSI-v2) ranged from a minimum of 20 points to a maximum of 96 points ($M = 63.17$, $SD = 25.87$).

The *Leadership Roles Survey* requested that participants select all the roles an administrator within the building plays related to a school-wide model of Response to Intervention. Eleven roles were included in this survey (see Table 4). Five roles were endorsed by a majority of participants, including participating in training ($n = 94$, 71.8%), planning school level implementation ($n = 66$, 50.4%); building school level knowledge and commitment ($n = 79$, 60.3%); promotes parental involvement ($n = 90$, 68.7%); and

includes RtI criteria as part of the staff evaluation process ($n = 69, 52.7\%$). The remaining six roles were endorsed by some participants, but not the majority, including: planning training ($n = 55, 42\%$); scheduling training ($n = 42, 32.1\%$); recruiting and selecting problem solving teams ($n = 53, 40.5\%$); participating on problem-solving teams ($n = 51, 38.9\%$); and implements follow-up training regularly ($n = 32, 24.4\%$). Only three participants (2.4%) identified implements targeted follow-up training opportunities based on needs as a role an administrator plays related to a school-wide model of RtI. The frequencies and percentages for each administrator role and its identification status are presented in Table 3.

Table 3

School Leadership Roles within the Response to Intervention Model (N = 131)

Leadership Role	Identified as a Role		Not Identified as a Role	
	<i>n</i>	%	<i>N</i>	%
Planning Training	55	42.0	76	58.0
Scheduling Training	42	32.1	89	67.9
Participating in Training	94	71.8	37	28.2
Planning School Level	66	50.4	65	49.6
Building School Level Knowledge	79	60.3	52	39.7
Recruiting and Selecting Problem-	53	40.5	78	59.5
Participating on Problem-Solving	51	38.9	80	61.1
Promotes Parental Involvement	90	68.7	41	31.3
Includes RtI criteria as part of the staff	69	52.7	62	47.3
Implements follow-up training	32	24.4	99	75.6
Implements targeted follow-up	3	2.3	128	97.7

The *Survey of Training Hours* requested that participants endorse the number of hours of formal training, staff development, and follow-up/refresher training they had participated in within the last two years. Eighteen items were included in the survey. Areas where participants had received the greatest number of training hours included: implementing evidence-based practice-professional development ($M = 11.05$, $SD = 7.13$), implementing evidence-based practice-staff development ($M = 10.70$, $SD = 6.85$) and implementing a 3-tiered system-staff development ($M = 11.05$, $SD = 7.13$).

Areas where participants had received the least number of training hours (less than two hours during the past two years) included: comprehensive commitment and support-professional development ($M = 1.45$, $SD = 2.13$); comprehensive commitment and support-follow-up/refresher training ($M = 0.82$, $SD = 1.05$); establishing and maintaining a team process- follow-up/refresher training ($M = 1.66$, $SD = 1.63$); conducting self-assessments-professional development ($M = 1.86$, $SD = 2.39$); conducting self-assessments-follow-up/refresher training ($M = 1.12$, $SD = 1.35$), and monitoring and action-planning-follow-up/refresher training ($M = 1.78$, $SD = 1.82$).

Table 4 presents the means, standard deviations, and minimum and maximum hours for each of the 18 survey items.

Table 4

Survey of Training Hours within the Response to Intervention Model

RtI Training Hours	<i>N</i>	Minimum	Maximum	<i>M</i>	<i>SD</i>
Comprehensive commitment & support					
Professional development	131	0.0	12.0	1.45	2.13
Staff development	131	0.0	8.0	2.34	2.24
Follow-up/refresher training	131	0.0	4.0	0.82	1.05
Establishing and maintaining a team process					
Professional development	131	0.0	24.0	4.43	3.24
Staff development	131	0.0	18.0	6.89	4.59
Follow-up/refresher training	131	0.0	8.0	1.66	1.63
Implementing a 3-tiered system					
Professional development	131	0.0	25.0	6.36	3.88
Staff development	131	0.0	25.0	11.05	7.13
Follow-up/refresher training	131	0.0	8.0	2.07	1.93
Conducting self-assessment					
Professional development	131	0.0	8.0	1.86	2.39
Staff development	130	0.0	25.0	2.78	4.18
Follow-up/refresher training	130	0.0	9.0	1.12	1.35
Implementing evidence-based practices					
Professional development	131	0.0	25.0	10.69	6.85
Staff development	131	0.0	25.0	16.04	9.46
Follow-up/refresher training	131	0.0	16.0	4.20	3.75
Monitoring and action-planning					
Professional development	131	0.0	12.0	4.18	3.01
Staff development	131	0.0	25.0	8.79	6.28
Follow-up/refresher training	131	0.0	9.0	1.78	1.82

Reliability

Cronbach's alpha's for the research variables are presented in Table 5. The alpha coefficients include: Leadership Roles ($\alpha = .961$) and Hours of Training ($\alpha = .862$).

George and Mallery (2003) suggest the following rules of thumb for evaluating alpha coefficients, $> .9$ Excellent, $> .8$ Good, $> .7$ Acceptable, $> .6$ Questionable, $> .5$ Poor, $< .5$ Unacceptable. The alpha results indicate the internal consistency of the scales ranged from good to excellent. Good internal consistency was found for Hours of Training, and the internal consistency reliability for Leadership Roles was in the excellent range.

Table 5

Cronbach's Alpha's for Research Variables

Research Variables	α	Items
Leadership Roles	.961	11
Hours of Training	.862	18

Correlation Results

Forward stepwise regressions were run to address each of the research questions. This type of regression was used to consider which items in each of the predictor surveys worked together to create a model that accounts for the largest amount of correlation between predictor variables (Hours of Training and Leadership Roles) and the overall level of implementation according to the SAPSI v.2. Data is presented for both ANOVA and stepwise regression results.

Research Question 1

To investigate research question 1, a forward stepwise regression was conducted to assess which, if any, of the eleven leadership roles from the Leadership Roles Survey impact the overall level of implementation of Response to Intervention (RtI). In preliminary analysis, the assumptions of normality and linearity were evaluated through examination of the residual scatter plot. The data were normally distributed and the assumptions were met. There were no outliers in the data set or composite scores.

The eleven leadership roles were entered into the regression in a forward stepwise method to determine the best model of predictors for the implementation of RtI. The statistical analysis resulted in an optimal four-variable regression model. Includes RtI criteria as part of the staff evaluations process was entered in the first step of the regression and was a significant predictor, $F(1, 129) = 249.549, p < 0.01$; the variable (includes RtI criteria as part of the staff evaluations process) accounted for 65.7% of the variance in overall level of implementation of RtI. Building school level knowledge was entered into the second step of the regression and was a significant predictor, $F(2, 128) = 148.16, p < 0.01$; building school level knowledge accounted for an additional 3.9% increase of the variance in overall level of implementation of RtI. Recruiting and selecting problem solving teams was entered into the third step of the regression and was significant predictor, $F(3, 127) = 109.07, p < 0.01$; recruiting and selecting problem solving teams accounted for 2.2% increase of the variance in overall level of implementation of RtI. Promotes parental involvement was entered into the fourth step of the regression and was significant, $F(4, 126) = 85.47, p < 0.01$; promotes parental

involvement accounted for 1% increase in the variance of overall level of implementation of RtI. The remaining seven predictor variables did not add anything significant to the variance in the outcome variable. Planning training, scheduling training, participating in training, planning school level implementation, participating on problem solving teams, implements follow-up training regularly, and implements targeted follow-up training opportunities were not the best predictors for overall level of implementation of RtI.

The null hypothesis is partially rejected and alternative hypothesis four is found to be true; leadership across certain components of the Response to Intervention framework are more significantly related to level of implementation than others. Of the 11 school leadership roles, four roles (building school level knowledge and commitment, recruiting and selecting problem solving teams, promotes parental involvement and includes RtI criteria as part of the staff evaluations process) were the best predictors of the overall level of implementation of RtI. Those four roles impact the overall level of implementation of Response to Intervention. The results of the ANOVAs are presented in Table 6. The results of the regression are presented in Table 7.

Table 6

ANOVA on Overall Level of Implementation of RtI by leadership roles variables identified to account for variance of level of RtI implementation

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P</i>
Includes RtI criteria as part of the staff evaluation process					
Regression	1	57340.89	57340.89	249.55	.000
Residual	129	29641.42	229.78		
Building school level knowledge					
Regression	2	60743.53	30371.76	148.16	.000
Residual	128	26238.78	204.99		
Recruiting and selecting problem solving teams					
Regression	3	62661.93	20887.31	109.07	.000
Residual	127	24320.38	191.50		
Promotes parent involvement					
Regression	4	63557.90	15889.48	85.47	.000
Residual	126	23424.41	185.91		

Table 7

Stepwise Regression Summary for leadership roles, ordered by amount of variation account for of RtI level of implementation

Step and predictor variable	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>R</i> ²	ΔR^2
Step 1:				.66***	.66***
Includes RtI criteria as part of the staff evaluation process	41.90	2.65	.81		
Step 2:				.70***	.04***
Includes RtI criteria as part of the staff evaluation process	28.60	4.12	.55		
Building school level knowledge	17.11	4.20	.33		
Step 3:				.72***	.02**
Includes RtI criteria as part of the staff evaluation process	25.53	4.10	.50		
Building school level knowledge	14.86	4.12	.28		
Recruiting and selecting problem solving teams	-9.31	2.94	-.18		
Step 4:				.73*	.01*
Includes RtI criteria as part of the staff evaluation process	23.48	4.14	.46		
Building school level knowledge	12.17	4.24	.23		
Recruiting and selecting problem solving teams	-9.06	2.90	-.17		
Promotes parent involvement	7.49	3.41	.14		

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Research Question 2

To investigate research question 2, a forward stepwise regression was conducted to assess which, if any, of the hours of training in the components of RtI impact overall level of implementation of RtI. In preliminary analysis, the assumptions of normality and linearity were evaluated through examination of the residual scatter plot. The data were normally distributed and the assumptions were met. There were no outliers in the data set or composite scores.

Eighteen components related to hours of training were included in the analysis. This included three types of training (professional development, in-school staff development and follow-up/refresher training) for each of the six areas of RtI (comprehensive commitment and support, establishing and maintaining a team process, implementing a three-tiered system, conducting self-assessments, implementing evidence based practices, and monitoring and action planning) The 18 hours of training components were entered into the regression in a forward stepwise method to determine the best model of predictors for the implementation of RtI.

The statistical analysis resulted in a three-variable regression model. Implementing evidence based practices (staff development) was entered in the first step of the regression and was a significant predictor, $F(1, 128) = 285.86, p < 0.01$; implementing evidence based practices (staff development) accounted for 69.1% of the variance in overall level of implementation of RtI. Monitoring and action planning (staff development) was entered into the second step of the regression and was a significant predictor, $F(2, 127) = 183.56, p < 0.01$; monitoring and action planning (staff

development) accounted for an additional 5.2% increase of the variance in overall level of implementation of RtI. Conducting self-assessment (professional development) was entered into the third step of the regression and was significant predictor, $F(3, 126) = 131.80, p < 0.01$; conducting self-assessment (professional development) accounted for 1.5% increase of the variance in overall level of implementation of RtI.

The remaining 15 predictor variables did not add anything significant to the variance in the outcome variable. Of the six RtI training areas, none of the training types for comprehensive commitment and support, establishing and maintaining a team process, or implementing a 3-tiered system were the best predictors for overall level of implementation of RtI. And, of the three areas where training hours were significant predictors of overall level of implementation of RtI, only professional training and in-school staff development training types were the best predictors; follow-up refresher training was not a model predictor for overall level of implementation of RtI in any training area.

The null hypothesis is partially rejected and alternative hypothesis two is found to be true; training in certain components of the Response to Intervention framework are more significantly related to level of implementation than others. Of the 18 types of training hours within the RtI model, three types (implementing evidenced-based practices-staff development, monitoring and action planning-staff development and conducting self-assessments-professional development) were the best predictors of the overall level of implementation of RtI. Those three training type hours impact the overall

level of implementation of Response to Intervention. The results of the ANOVAs are presented in Table 8. The results of the regression are presented in Table 9.

Table 8

ANOVA on Overall Level of Implementation of RtI by staff training variables that account for variation of level of RtI implementation

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P</i>
Implementing Evidence-Based Practices (staff development)					
Regression	1	59501.86	59501.86	285.87	.001
Residual	128	26642.77	208.15		
Monitoring and Action Planning (staff development)					
Regression	2	64003.40	32001.70	183.56	.001
Residual	127	22141.23	174.34		
Conducting Self-Assessment (professional development)					
Regression	3	65327.34	21775.78	131.80	.001
Residual	126	20817.29	165.22		

Table 9

Stepwise Regression Summary for staff training, ordered by amount of variation accounted for in variation of level of RtI implementation

Step and predictor variable	<i>B</i>	<i>SE B</i>	β	R^2	ΔR^2
Step 1:				.83***	.69***
Implementing evidence- based practices (staff development)	2.27	.13	.83***		
Step 2:				.74***	.05***
Implementing evidence-based practices (staff development)	1.52	.19	.56***		
Monitoring and action planning (staff development)	1.48	.29	.36***		
Step 3:				.76***	.02**
Implementing evidence-based practices (staff development)	1.64	.19	.60***		
Monitoring and action planning (staff development)	1.29	.29	.31***		
Conducting self-assessment (professional development)	1.41	.50	.13**		

Note. ** $p < .01$, *** $p < .001$

Summary

To assess whether or not certain variables associated with leadership roles and staff development impact Response to Intervention levels of implementation statistical analyses using forward stepwise multiple regression were conducted. Preliminary examination was conducted on the research variables. The predictor variables included 11 school leadership roles and the hours of RtI training for 18 types. Examination of the 11 leadership roles showed that five roles were endorsed by the majority of participants, including: participating in training, planning school level implementation, building school level knowledge and commitment, promotes parental involvement, and includes

RtI criteria as part of the staff evaluation process. Examination of the hours of RtI training showed that participants had received the greatest number of training hours in implementing evidence-based practice-professional development and staff development and implementing a 3-tiered system-staff development. The criterion variable in each analysis was the Response to Intervention levels of implementation total score obtained from the Self-Assessment Problem Solving Inventory, volume 2 (SAPSI-v2). The SAPSI-v2 score ranges from 20-96, and for the research sample, the mean score was 63.17 (SD = 25.87). In preliminary analysis, Cronbach's alpha's were conducted on the survey subscales. Good internal consistency was found for Hours of Training ($\alpha = .862$) and the internal consistency reliability for Leadership Roles was in the excellent range ($\alpha = .961$).

To examine research question 1, a forward stepwise regression was conducted to assess which, if any, of the eleven leadership roles from the Leadership Roles Survey impact the overall level of implementation of Response to Intervention (RtI). The null hypothesis is partially rejected. Of the 11 school leadership roles, four roles (building school level knowledge and commitment, recruiting and selecting problems solving teams, promotes parental involvement and includes RtI criteria as part of the staff evaluations process) were the best predictors of the overall level of implementation of RtI. Those four roles impact the overall level of implementation of Response to Intervention.

To examine research question 2, a forward stepwise regression was conducted to assess which, if any, of the hours of training in the components of RtI impact overall

level of implementation of RtI. The null hypothesis is partially rejected. Of the 18 types of training hours within the RtI model, three types (implementing evidenced-based practices-staff development, monitoring and action planning-staff development and conducting self-assessments-professional development) were the best predictors of the overall level of implementation of RtI. Those three training type hours impact the overall level of implementation of RtI.

In summary, the null hypotheses were partially rejected for each research question. A model of four school leadership roles (building school level knowledge and commitment, recruiting and selecting problems solving teams, promotes parental involvement and includes RtI criteria as part of the staff evaluations process) and a model of three RtI hours of training components (implementing evidenced-based practices-staff development, monitoring and action planning-staff development and conducting self-assessments-professional development) impact the overall level of implementation of RtI. Interpretation of results will be discussed in more detail in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

In this chapter, the author will review the overall content of the study and apply findings to theoretical frameworks and current literature. Results will be interpreted in terms of overall findings and possible implications. Based on this, recommendations will be made for both action and further studies. General conclusions and a summary will be presented.

Overview of the Study

Rural schools face great challenges in implementing systems change requirements such as RtI. Part of this difficulty has been attributed to lower levels of staff development based on cost and rural isolation (Barton, 2003; Burdette, 2007). In addition to limited staff development, leaders in rural schools often face challenges in how best to prioritize their time commitments. This study considered these two specific areas, training and leadership roles, to explore their relationships with RtI levels of implementation and identify ways to reduce costs and better allocate training time.

Review of the Purpose and Research Questions

The purpose of this study was to identify possible strengths of relationship between how well rural schools implement RtI and the amount and types of training staff participate in, as well as the strengths of relationships between implementation and the roles that rural school leaders play in support of RtI. More specifically, the following research questions were presented:

Research Question 1: Are individual school leadership roles: planning training, scheduling training, participating training, planning implementation, building school

commitment/knowledge, problem solving recruitment, problem solving participation, parental involvement, RTI evaluations, regular follow-ups and targeted follow-ups, related to total implementation level? If so, are certain roles more closely related to higher levels of implementation than others?

Research Question 2: Are amounts of training in the six components of RtI, including comprehensive commitment, team process, 3-tiered system, self-assessment, evidenced based practice and action planning, related to overall level of implementation? If so, does training in certain components evidence higher relation to level of implementation than others?

Review of Materials and Methods

An omnibus survey was compiled to address the research questions and hypotheses. This survey consisted of 3 smaller surveys: a leadership roles survey, an hours of training survey, and a survey measuring level of RtI implementation (SAPSI v.2). In-depth descriptions of these surveys are provided in the Chapter 3. Demographic data including age, gender, and years in RtI were gathered from participants. Chronbach's alpha was used to determine survey reliability and stepwise forward regressions were used to analyze possible relationships between levels of RtI implementation and staff development and leadership roles. One hundred thirty one respondents, recruited from rural schools across the State of Colorado, completed the omnibus survey.

Interpretation of Findings

The findings of this study indicate that only certain types of training and leadership roles demonstrated significant relationship to overall level of RtI implementation. For this reason both null hypotheses were only partially rejected. More specifically, among the 18 types of training, 3 areas of training, implementing evidenced-based practices-staff development, monitoring and action planning-staff development, and conducting self-assessments-professional development served as the best predictors of level of RtI implementation. In terms of leadership roles, 4 items were identified as best predictors for overall level of implementation. These included building school level knowledge and commitment, recruiting and selecting problems solving teams, promotes parental involvement, and includes RtI criteria as part of the staff evaluations process.

Hours of Training Findings

Results of the hours of training survey indicate that schools that have achieved high levels of implementation have focused sufficient levels of training in evidence-based practices, monitoring and action planning, and conducting self-assessments. The first two areas of training were conducted within a staff development setting as part of regular in-school training processes, while training on conducting self-assessments occurred in a professional development setting outside of the school.

Evidence-based practices refer to the RtI interventions put into action with fidelity to remediate learning or behavioral deficits. Monitoring and action-planning refers to the process of gathering data on student performance, planning hypothesis-driven interventions, and reporting of performance data. The data regarding the first two

components indicate that well-planned and organized training can be conducted within school systems, thus reducing the barrier of geographic isolation. Schools should focus more intense training in these areas as part of their regular staff development (Brown-Chidsey & Steege, 2005). These findings would support a model of professional development that includes professional learning communities where knowledgeable members of the team can support learning of others, and where professional literature reviews and opportunities to collaborate could appropriately develop intervention practices (Glovers & DiPerna, 2007). Conducting self-assessments is the process of evaluating team procedures and performance data to determine which practices are effective in implementing RtI and which practices should be modified. The predictive aspect of training within this component was within the professional development area, indicating that training conducted by a professional with specialized knowledge in self-assessment will best support higher levels of implementation.

Leadership Roles Findings

The 4 leadership roles identified as good predictors of level of implementation were building school level knowledge and commitment, recruiting and selecting problems solving teams, promotes parental involvement and includes RtI criteria as part of the staff evaluations process. These roles are considered highly visible roles that often do not require daily participation in RtI processes, but still require a strong understanding of the RtI process. Although it can be interpreted that school administrators need not attend staff development in RtI, to achieve the identified 4 roles, it is imperative that the administrator have a strong understanding of RtI.

Building school level knowledge and commitment includes setting RtI as a priority and being able to relate the importance of sound implementation practices (Carion, 2007). The administrator must be visible to establish RtI as a building-wide priority. By recruiting and selecting the problem solving team, school administrators establish a trust in selected members to become leaders within the school system. Keeping parents informed is an integral part of the RtI process. As such, administrative involvement in this process may encourage greater parental participation. Finally, including RtI as part of the staff evaluation process encourages staff to actively seek ways to incorporate RtI strategies into instructional and intervention practices, thus improving overall staff performance and student outcomes.

By recruiting and selecting the problem solving team, school administrators establish a trust in selected members to become leaders within the school system (Carion, 2007; Fullan, 2006). Leaders are, in essence, bestowing a level of confidence on staff members by actively selecting them, thus building stronger levels of commitment to the systems change. This leadership role is the beginning of the delegative process that leaders will use for leadership roles that were not strong predictors of implementation level.

Encouraging parental participation includes notifying parents and the community of systems change processes and how it will affect students, families, and staff. Leaders communicate with parents to encourage active involvement in RtI processes that involve their children as well as attending informative presentations on school processes and progress.

Finally, including RtI in the evaluation process ensures that staff demonstrate research-based practices learned in staff development. Evaluating RtI also places emphasis on valuing the systems change and encouraging ownership of the process through direct demonstration of skills. Administrative roles that tie RtI into staff evaluation place a greater priority on RtI.

Some precautions must be taken when interpreting the results. This study does not indicate that training in the other 3 components is not merited. Nor does it indicate that leaders need not fill the remaining 7 leadership roles. While this study does identify components of training and leadership that account for the greatest levels of implementation, a well rounded understanding of RtI, achieved through training and supportive leadership is still necessary (Barton, 2003; Burdette, 2007, Mellard & Johnson, 2008; Wright 2007). Active leadership and engagement is supported by the theory of systems thinking where all parties are engaged in active learning and support of the systems change (Fuchs & Fuchs, 2006; Senge, 2006). There is still a need to fully understand how the system functions as a whole, including all six components, as well as to support systems functioning through leadership actions that may be delegated (Fuchs & Fuchs, 2006; Mellard & Johnson, 2008; Glovers & DiPerna, 2007).

These findings are consistent with Fullan's (2005) feedback on leadership roles in systems change, noting that leaders must understand the process as well as visibly promote the systems change for staff to embrace systems change and promote sustainability beyond leadership. Furthermore, leaders serve as communication brokers

among staff and between school and community by building knowledge and commitment and encouraging greater levels of participation in staff and parents (Fullan, 2006).

Implications for Social Change

Rural schools are faced with unique challenges in achieving training requirements due to high costs for low staff numbers and due to geographic isolation, which makes accessing training difficult. In addition to this, administrative leadership can become over-tasked with additional duties, making systems change difficult to support effectively. This study has positive implications for social change through the identification of cost-saving training practices and time-saving leadership practices that will support high levels of RtI implementation within rural schools.

More specifically, the findings of this study provide rural schools the information necessary to approach RtI systems change from a more focused standpoint. The data presented allow RtI teams to focus their training intensity in areas with the greatest impact while allowing leadership to delegate some roles to members of the team while maintaining roles that support the RtI system. Most training can occur within the school setting through staff development with a focus in areas that revealed significant correlations to high levels of implementation (conducting self-assessment, progress-monitoring and action planning, and implementing evidence-based practices. Targeting training in areas with the greatest impact on overall implementation will result in carefully planned-for training expenditures supported by an initial research base.

This study also identifies areas of focus for leaders. Using this information, administrative leaders can focus their participation in the RtI process on building school

level knowledge and commitment, recruiting and selecting problems solving teams, promoting parental involvement, and including RtI criteria as part of the staff evaluations process. Other leadership roles can be delegated to members of the RtI team.

Finally, significant positive social changes may also come about as a secondary result of high levels of implementations. These include improved student outcomes and improved staff perceptions of systems change. As schools implement RtI more efficiently, student performance should improve through effective evaluation, intervention, and follow-up. As staff members feel more supported and better trained, they may become more confident in the new system, leading to improved morale and improved implementation resulting from confidence in the process.

Recommendations for Action

Based on findings, several recommendations can be made. These recommendations for planning, filling, and delegating staff development.

Recommendations for Staff Development

In terms of staff training, this study indicated that the majority of training hours should focus on three areas, two of which are more intensive in hours but can be accomplished within a school setting, and one that requires fewer hours of training, but which yields higher predicted outcomes when completed in a professional development setting. The first two, which require greater hours within a staff development setting, were implementing evidence-based practices (23.83+ hours) and monitor and action-planning (13.46 hours). Conducting self-assessments only revealed an average of 2 hours of professional development training to effectively evaluate systems success.

When conducting staff development in the school setting, staff should select members with subject matter knowledge to present training or consult with professionals to identify appropriate materials. Data from this study indicated that, although staff development may meet the needs of training, at least some of the staff members completed some form of professional development training to develop a conceptual knowledge of RtI systems (implementing evidence-based practices, 14.25 hours average, and monitoring and action-planning, 4.95 hours average). Staff development should be multidimensional, including literature reviews, application activities, collaborative learning activities, and report-back and follow-up activities. Staff development should be multidisciplinary (across curricular disciplines) as well. Senge (2006) promoted staff development models that built greater understanding of how the system operates as a whole so that collaboration can occur on a greater level and across disciplines.

Current research supports collaborative models where teachers take ownership of the staff development process through participating in teacher networks, implementing study groups, conducting site visits, and participating in literature studies (Glovers & DiPerna, 2007; Kovaleski, 2007; Mujis, 2008). Brown-Chidsey and Steege (2005) further emphasized that staff development should occur over several sessions with increasing intensity and application of knowledge. If these concepts were applied to implementing evidence-based practices and monitoring and action planning, the first step would be to clearly identify targeted research practices, followed by identifying the roles and focus for each consecutive level of training. Next, training should be varied in form and with increasing intensity to build on previous knowledge.

Training in conducting self-assessment should be conducted through professional development. Through consulting with the state-level department of education, team members may be able to locate state-sponsored trainings using research-based self-assessments approved by the department of education. These trainings are often offered through regional cooperatives and are free of charge. As the hours of training for this study averaged 2 hours for teams evidencing high levels of implementation, a half-day training should be sufficient. Training should be reviewed three times a year before completing the self-evaluation, to ensure appropriate rating of performance and processes.

Recommendations for Leadership Roles

Four leadership roles were identified as strong predictors of level of RtI implementation. These included building school-level knowledge and commitment, recruiting problem-solving teams, promoting parental involvement, and including RtI implementation in the staff evaluation process. Based on the results of this study, it would be appropriate for administrative leaders to delegate the other seven roles to members of the RtI team when they recruit these members.

These results indicate that leaders must actively participate in visible RtI support activities. Building school level knowledge and commitment involves placing RtI as one of the top three priorities on the school action plan (Carion, 2007). It also involves promoting active participation in training and informing staff and community of progress in the process. Leaders who visibly support RtI systems change in a positive manner, are more likely to achieve sustainable systems change than those who emphasize it as a

mandate but lack follow-through with support (Fuchs & Fuchs, year of pub; Fullan, 2006).

When recruiting the problem-solving teams, leaders in rural schools should consider several factors. First, leaders should look to who already has a knowledge base in RtI through training, prior employment, or individual learning. In rural school settings, it is important to consider itinerants as well, who may bring knowledge with them from the other school they serve. Next, leaders must also consider what roles staff members are already playing. Based on research in rural schools, staff members already assume a variety of additional duties, which can lead to increased burnout rates. Leaders should consider staff roles and readiness carefully to prevent burnout (Donaldson, 2007; Henderson, 2008; Moller & Pankake, 2007; Phelps, 2008).

Administrative leaders can promote parental involvement in several ways. First, leaders can inform parents within the community of the priority of RtI systems change within the school system through informative presentations that not only summarize the purpose and processes of RtI, but also identify opportunities for parents to become actively involved in the process. Leaders should also encourage parents to be actively involved in their individual children's participation in the RtI process through informative letters, invitations to participate in meetings, and varied check-ins with report back to parents. These should be kept short and simple with contact information available for the individual's assigned RtI consultant. These basic contacts will let parents know that leaders are actively involved in the process and that parents are encouraged to ask questions and stay involved as well. Improved parental involvement often leads to both

greater fidelity of implementation and improved student outcomes (Englund, Lucker, Whaley, & Egeland, 2004).

Including RtI implementation in the classroom as part of the staff evaluation process encourages several classroom commitments. First, classroom teachers are encouraged to actively participate in staff development and implement what they have learned (Feeney, 2007; Toch, 2008). Furthermore, if staff members know that RtI is part of the evaluation process, they will be more driven to implement with fidelity. It will be imperative that supports be in place to offer retraining of skills for staff not confident in RtI classroom practices. In addition to this, leaders may opt to use varied staff evaluation processes including classroom observations, video recorded lessons, and team evaluations where staff members collaborate with the leader in a model that promotes skills improvement rather than direct evaluation (Feeney, 2007; Palazuelos & Conley, 2008; Toch, 2008).

Recommendations for Further Study

There is ample room for continued research in RtI specific to rural school settings. This study provides the initial groundwork for future studies in staff development, leadership, and general RtI practices. A variety of research options including generalization of findings to larger samples, qualitative measures of leadership, measures of fidelity in predictive staff training components, and the relationship between school model and level of implementation.

Increasing the Research Population

For preliminary research purposes, this study was conducted across one state, using a medium effect size. To support the findings of this study, it would be beneficial to repeat this study requiring a larger effect size or expanding the study to rural populations across several states or regions. Using a larger sample across a larger geographic area will lead to more generalizable results and yield better control for possible confounding variables.

Additional Research in Leadership Roles

One limitation of this study was that it only addressed types of leadership roles that predict high levels of RtI implementation. It did not consider quality of leadership or leadership style. Additional research considering leadership styles or quality of participation, particularly related to the four leadership roles evidencing high correlation, would further clarify the roles administrative leaders fill in supporting RtI systems change. This research could address not only what administrative leaders do, but also how they do it.

Additional Research in Staff Development

Another key area for continued research is staff development. This study identified specific components of RtI where staff development or professional development are strong predictors of RtI level of implementation. Models of staff development that support fidelity of implementation and sustainable implementation would provide greater understanding in the ways to effectively incorporate staff development programming in rural schools. Based on this study and current research,

further studies should address a variety of staff development styles including literature reviews conducted by school staff for professional learning, application activities, collaborative learning activities, cross-curricular learning, and report-back and follow-up activities specific to RtI.

Considering School Composition

Rural school districts often combine school levels within one facility based on number of students. As a result, rural school RtI teams may serve more than one level. Common combinations in Colorado include elementary, middle, high, elementary/middle, middle/high, and all three combined. The final recommendation for research is to consider possible differences in systems practices based on the rural school model.

Conclusion

The results of this study indicate that there are specific leadership roles and staff training practices that support high levels of RtI implementation in rural schools. More specifically, administrative leaders should fill roles in building knowledge and program support, selecting members of the problem-solving RtI team, promoting parental involvement, and including RtI as part of the staff evaluation process. Staff training should focus on implementing evidence-based practices, monitoring and action planning, and conducting self-evaluations. The first two trainings can be conducted within a staff development model in a school setting. Training in conducting self-evaluations should be addressed through professional development. These findings do not negate the need for

other leadership roles or training. They only provide guidance for where to focus school system resources.

Based on the findings of this study and existing research, recommendations for further study were made in areas of quality of leadership, leadership style, types of staff development, and school models. Research recommendations also considered the exploration of leadership roles and staff development in non-rural schools to determine if differences exist between rural and non-rural programs. Additional research not only presents opportunity to verify or generalize findings of this study, but it also provides the opportunity to add depth to the knowledge base provided in this study.

The results of this study provide significant insight into practices that empower rural schools to achieve sustainable response to intervention systems change. Using the preliminary findings of this study, rural school districts can allocate time and funding more effectively. Staff development can focus on developing a base of knowledge across all 6 RtI components while implementing targeted, more intense staff development in evidence-based practices and monitoring and action-planning. Leaders can focus their support of RtI in building support, selecting team members, encouraging parents, and evaluating staff implementation, while delegating other leadership roles to the RtI team. By focusing resources using more direct and informed means, rural schools can achieve sustainable, high levels of RtI implementation without depleting financial resources or staff morale.

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Appendix A: Level of Implementation Measure

**Self-Assessment of Problem Solving Implementation
(SAPSI v2.1)**

Checklist #1: Startup Activity		
Date Completed: _____	Status:	
	<p>(M)aintaining = All components of definition implemented consistently for 2 or more school years.</p> <p>(A)chieved = All components of definition implemented consistently for at least one school year.</p> <p>(I)n Progress = At least one of the components of definition implemented consistently for at least 3 months.</p> <p>(N)ot Started = No components of definition have been implemented.</p>	
Comprehensive Commitment and Support		
	Components of Definition:	STATUS
1. DISTRICT LEVEL LEADERSHIP PROVIDES ACTIVE COMMITMENT AND SUPPORT.	<ul style="list-style-type: none"> ➤ Team meets regularly (e.g., weekly, monthly, quarterly) ➤ Data is discussed at each meeting ➤ Leadership member(s) visit schools/classrooms at least twice a month 	
2. THE BUILDING LEADERSHIP PROVIDES SUPPORT AND ACTIVE INVOLVEMENT (I.E. PRINCIPAL ACTIVELY INVOLVED IN LEADERSHIP TEAM	<ul style="list-style-type: none"> ➤ Standing agenda item for all staff meetings has established communication process to share information with staff ➤ Professional development is listed on school calendar ➤ Response to Intervention is one of the top 3 goals on 	

Checklist #1: Startup Activity		
MEETINGS).	School Improvement Plan (SIP)	
FACULTY/STAFF SUPPORT AND ARE ACTIVELY INVOLVED WITH PROBLEM SOLVING.	<ul style="list-style-type: none"> ➤ Staff development and awareness is one of top goals of the SIP ➤ 80% of faculty document support ➤ A three year timeline has been established and published 	
3. A SCHOOL LEADERSHIP TEAM IS ESTABLISHED.	<ul style="list-style-type: none"> ➤ School leadership represents the roles of an administrator, facilitator, data mentor, content specialist, parent, and representative teachers 	

Checklist #1: Startup Activity		
<p>This survey is designed to allow assessment up to three times per year. Please only complete responses for the column labeled Benchmark Dates Date 1</p>	Status:	
	<p>(M)aintaining = All components of definition implemented consistently for 2 or more school years.</p> <p>(A)chieved = All components of definition implemented consistently at least one school year.</p> <p>(I)n Progress = At least one of the components of definition implemented consistently for at least 3 months.</p> <p>(N)ot Started = No components of definition have been completed.</p>	
Establish and Maintain Team Process		
	<i>Components of Definition:</i>	STATUS
<p>5. BUILDING HAS ESTABLISHED A THREE-TIERED SYSTEM OF SERVICE DELIVERY.</p>	<ul style="list-style-type: none"> ➤ Instructional Planning Form (IPF) (or similar form that provides implementation guidance) for all targeted grade levels ➤ Data collection for Tiers according to Three-Tiered Model (Tier 1 three times a year; Tier 2 twice monthly; Tier 3 weekly) ➤ Graphs with evidence of program change when inadequate progress (sufficient data below aim-line) 	
<p>6. SCHOOL-WIDE DATA ARE COLLECTED THROUGH AN EFFICIENT AND EFFECTIVE SYSTEMATIC PROCESS.</p>	<ul style="list-style-type: none"> ➤ Testing calendar for benchmark windows ➤ Data collected within established collection windows ➤ Data are entered in the data system by the end of the testing window 	

Checklist #1: Startup Activity		
<p>7. SCHOOL-WIDE DATA ARE PRESENTED TO STAFF AFTER EACH BENCHMARKING SESSION.</p>	<ul style="list-style-type: none"> ➤ Benchmark data presented after data collection ➤ Student placement revisited at benchmarks ➤ Grade level teams discuss data at least monthly 	
<p>8. CURRICULUM-BASED MEASURES (CBM) AND/OR OFFICE DISCIPLINARY REFERRAL (ODR) DATA ARE USED IN CONJUNCTION WITH OTHER DATA SOURCES TO IDENTIFY STUDENTS NEEDING TARGETED GROUP INTERVENTIONS AND INDIVIDUALIZED INTERVENTIONS.</p>	<ul style="list-style-type: none"> ➤ All students at the Tier 3 level (e.g., determined by scores verified below the 10th percentile, Below Basic, or with 6 or more Office Disciplinary Referrals - ODRs) receive Tier 3 intervention ➤ All students at the Tier 2 level (e.g., determined by scores verified between the 11th and 25th percentile, At-Risk, or 2 ODRs) receive Tier 2 intervention 	

Checklist #1: Startup Activity		
<p>This survey is designed to allow assessment up to three times per year. Please only complete responses for the column labeled Benchmark Dates Date 1</p>	<p>Status: (M)aintaining = All components of definition implemented consistently for 2 or more school years. (A)chieved = All components of definition implemented consistently for at least one school year. (I)n Progress = At least one of the components of definition implemented consistently for at least 3 months. (N)ot Started = No components of definition have been implemented.</p>	
Establish and Maintain Team Process		
	<i>Components of Definition:</i>	STATUS
<p>9. THE BUILDING STAFF / DISTRICT HAS A PROCESS TO SELECT EVIDENCE-BASED PRACTICES.</p>	<ul style="list-style-type: none"> ➤ Procedures for selection of practices and programs based on Scientifically-Based Research (SBR) are clearly stated ➤ All programs in use are based on SBR 	
<p>10. COMPREHENSIVE AND ON-GOING TRAINING IS PROVIDED TO ALL KEY PEOPLE INCLUDING PARENTS.</p>	<ul style="list-style-type: none"> ➤ Building Administration attends all trainings ➤ 95% of teachers attend all trainings ➤ All paraprofessionals who provide direct services attend all trainings ➤ Regular parent participation 	

<p>11. AN EFFECTIVE PROBLEM SOLVING TEAM IS ESTABLISHED</p>	<ul style="list-style-type: none"> ➤ Team members include representatives from the following groups: <ul style="list-style-type: none"> ○ General education, special education, administration, and related services personnel, including at least one person who is skilled in: <ul style="list-style-type: none"> ▪ Reading ▪ Behavior ▪ Assessment ○ Parents 	
<p>12. TEAM HAS REGULAR MEETING SCHEDULE</p>	<ul style="list-style-type: none"> ➤ Regular meeting times are scheduled in calendar ➤ Evidence of parent attendance ➤ Team meets on 100% of student referrals within 10 school days 	

<p align="center">Checklist #1: Startup Activity</p>		
<p>This survey is designed to allow assessment up to three times per year. Please only complete responses for the column labeled Benchmark Dates Date 1</p>	<p><u>Status:</u> <u>(M)</u>aintaining = All components of definition implemented consistently for 2 or more school years. <u>(A)</u>chieved = All components of definition implemented consistently for at least one school year. <u>(I)</u>n Progress = At least one of the components of definition implemented consistently for at least 3 months. <u>(N)</u>ot Started = No components of definition have been implemented.</p>	
<p>Three-Tiered System</p>		
<p align="center"><i>Components of Definition:</i></p>		<p align="center">STATUS</p>
<p>13. TEAMS IMPLEMENT EFFECTIVE PROBLEM SOLVING PROCEDURES INCLUDING:</p>		
<p>a. PROBLEM IS DEFINED IN MEASURABLE</p>	<p>➤ “Problem” defined as a discrepancy between what is expected and what is occurring</p>	

Checklist #1: Startup Activity		
<p>This survey is designed to allow assessment up to three times per year. Please only complete responses for the column labeled Benchmark Dates Date 1</p>	<p>Status: (M)aintaining = All components of definition implemented consistently for 2 or more school years. (A)chieved = All components of definition implemented consistently for at least one school year. (I)n Progress = At least one of the components of definition implemented consistently for at least 3 months. (N)ot Started = No components of definition have been implemented.</p>	
<p>AND OBSERVABLE TERMS</p>	<p>➤ Examples: student is performing below 25th percentile, more than two ODRs, etc.</p>	
<p>b. GOALS FOR EACH TIER/TARGET BEHAVIOR ARE CLEARLY DEFINED</p>	<p>➤ Specific conditions, observable and measurable targets, action specified (e.g., orally read), time bound</p>	
<p>c. HYPOTHESES ARE DETERMINED</p>	<p>➤ Examples: attention, avoidance</p>	
<p>d. HYPOTHESES ARE TESTED, IF NEEDED</p>	<p>➤ Examples: intervention probe, functional analysis</p>	
<p>e. EVIDENCE-BASED INTERVENTIONS ARE IMPLEMENTED</p>	<p>➤ According to treatment plan (e.g., at least 30 minutes daily)</p>	
<p>f. RESPONSE TO INTERVENTION IS EVALUATED THROUGH SYSTEMATIC DATA COLLECTION</p>	<p>➤ Individual student graphs for all students receiving Tier 2 and 3 interventions</p>	

Checklist #1: Startup Activity		
<p>This survey is designed to allow assessment up to three times per year. Please only complete responses for the column labeled Benchmark Dates Date 1</p>	<p><u>Status:</u> <u>(M)</u>aintaining = All components of definition implemented consistently for 2 or more school years. <u>(A)</u>chieved = All components of definition implemented consistently for at least one school year. <u>(I)</u>n Progress = At least one of the components of definition implemented consistently for at least 3 months. <u>(N)</u>ot Started = No components of definition have been implemented.</p>	
<p>g. CHANGES ARE MADE TO INTERVENTION BASED ON STUDENT RESPONSE</p>	<p>➤ Example: Rate of Improvement (ROI) less than 50% of target for more than 3 weeks should trigger a change in intervention shown on individual student graphs.</p>	

Checklist #1: Startup Activity		
<p>This survey is designed to allow assessment up to three times per year. Please only complete responses for the column labeled Benchmark Dates Date 1</p>	Status:	
	<p>(M)aintaining = All components of definition implemented consistently for 2 or more school years.</p> <p>(A)chieved = All components of definition implemented consistently for at least one school year.</p> <p>(I)n Progress = At least one of the components of definition implemented consistently for at least 3 months.</p> <p>(N)ot Started = No components of definition have been implemented.</p>	
Self – Assessment		
	Components of Definition:	STATUS
14. SCHOOL-WIDE TEAM/FACULTY COMPLETES SELF-ASSESSMENT OF RTI PROCESSES	<ul style="list-style-type: none"> ➤ Self assessment completed at benchmarking 	
15. SCHOOL-WIDE TEAM SUMMARIZES EXISTING SCHOOL SCHOOL-WIDE ASSESSMENT DATA FOR DECISION-MAKING.	<ul style="list-style-type: none"> ➤ Rules for making decisions are explicitly stated in procedures 	
16. STRENGTHS, AREAS OF IMMEDIATE FOCUS AND ACTION PLAN ARE IDENTIFIED.	<ul style="list-style-type: none"> ➤ Action items based on self-evaluation of RtI Implementation ➤ Evidence of group and individual level goals for Tier 2 and 3 	
17. A SCHOOL SCHOOL-WIDE ASSESSMENT SYSTEM FOR IDENTIFYING AND MONITORING PROGRESS OF ALL STUDENTS IS IMPLEMENTED.	<ul style="list-style-type: none"> ➤ Benchmark assessment for all students, twice-monthly monitoring for students at Tier 2, weekly progress monitoring for Tier 3 	

Checklist #1: Startup Activity		
<p>This survey is designed to allow assessment up to three times per year. Please only complete responses for the column labeled Benchmark Dates Date 1</p>	Status:	
	<p>(M)aintaining = All components of definition implemented consistently for 2 or more school years.</p> <p>(A)chieved = All components of definition implemented consistently for at least one school year.</p> <p>(I)n Progress = At least one of the components of definition implemented consistently for at least 3 months.</p> <p>(N)ot Started = No components of definition have been implemented.</p>	
18. ALL BUILDING LEVEL RESOURCES ARE UTILIZED IN THE DEVELOPMENT OF INSTRUCTION/ INTERVENTIONS.	<ul style="list-style-type: none"> ➤ Interventions evident for all tiers at all targeted grade levels 	
19. PARENTS ARE ROUTINELY INVOLVED IN IMPLEMENTATION OF INTERVENTIONS.	<ul style="list-style-type: none"> ➤ Evidence of three or more parent contacts for all students receiving Tier 2 and 3 interventions 	
20. PERSONNEL WITH PROBLEM-SOLVING INTERVENTION EXPERTISE ARE IDENTIFIED AND INVOLVED.	<ul style="list-style-type: none"> ➤ For all tiers at all targeted grade levels 	

Checklist #2: Ongoing Activity Monitoring	
This survey is	Status:

<p>designed to allow assessment up to three times per year. Please only complete responses for the column labeled Benchmark Dates Date 1</p>	<p>(M)aintaining = All components of definition implemented consistently for 2 or more school years. (A)chieved = All components of definition implemented consistently for at least one school year. (I)n Progress = At least one of the components of definition implemented consistently for at least 3 months. (N)ot Started = No components of definition have been implemented.</p>	
Monitoring and Action Planning		
	Components of Definition:	STATUS
<p>21. THE PROBLEM SOLVING TEAM (E.G., THE TEAM WORKING WITH INDIVIDUAL STUDENTS) MEETS AT LEAST MONTHLY TO FOLLOW DECISION-RULES AND MAKE NECESSARY INSTRUCTIONAL CHANGES.</p>	<ul style="list-style-type: none"> ➤ Regular meeting times are scheduled in calendar ➤ Team meets on 100% of student referrals within 10 school days 	
<p>22. THE PROBLEM SOLVING TEAM PROVIDES A STATUS REPORT TO FACULTY.</p>	<ul style="list-style-type: none"> ➤ Standing agenda item for all possible staff meetings ➤ Successes delineated ➤ Continuing needs delineated 	
<p>23. ACTION PLAN, CONSISTENT WITH OR BASED ON, THE EVALUATION OF LEVEL OF IMPLEMENTATION IS IN PLACE.</p>	<ul style="list-style-type: none"> ➤ Policies and procedures for RtI are explicit in the SIP ➤ Professional development plan listed on the calendar 	

Checklist #2: Ongoing Activity Monitoring		
<p>This survey is designed to allow assessment up to three times per year. Please only complete responses for the column labeled Benchmark Dates Date 1</p>	<p>Status: (M)aintaining = All components of definition implemented consistently for 2 or more school years. (A)chieved = All components of definition implemented consistently for at least one school year. (I)n Progress = At least one of the components of definition implemented consistently for at least 3 months. (N)ot Started = No components of definition have been implemented.</p>	
<p>24. THE ACTION PLAN IS CONTINUALLY MONITORED FOR INTEGRITY OF IMPLEMENTATION</p>	<ul style="list-style-type: none"> ➤ Evidence of "walkthrough" data ➤ At least two times per year 	
<p>25. EFFECTIVENESS OF THE ACTION PLAN IMPLEMENTATION IS ASSESSED.</p>	<ul style="list-style-type: none"> ➤ Program changes shown on student level graphs reflect inadequate progress (e.g., 3 data points, or when ROI is less than 50% of target or other data decision rule is applied) 	
<p>26. PROBLEM SOLVING DATA ARE ANALYZED.</p>	<ul style="list-style-type: none"> ➤ Evidence that movement through the tiers is dynamic based on data rather than based only on Fall status/benchmarking ➤ Evidence of changes in interventions on student graphs 	

Appendix B: Leadership Roles Survey

***School Leadership Roles
within the Response to Intervention Model***

Directions: Please check all roles an administrator within your building plays related to a school-wide model of Response to Intervention.

___ Planning Training

___ Scheduling Training

___ Participating in Training

___ Planning School Level Implementation

___ Building School Level Knowledge and Commitment

___ Recruiting and Selecting Problem-Solving Teams

___ Participating on Problem-Solving Teams

___ Promotes Parental Involvement

___ Includes RtI criteria as part of the staff evaluations process

___ Implements follow-up training regularly

___ Implements targeted follow-up training opportunities based on needs

Appendix C: Survey of Training Hours

***Hours of Response to Intervention/
Problem Solving Team Training***

The following information will not be associated with the respondent in any manner. The first two items only serve the purpose of identifying population diversity. The third item establishes qualification to participate in this study.

1) Please check the appropriate line for gender:

Male___ Female___ Prefer not to say___

2) Please indicate your age: _____

3) Please indicate the number of years you have participated on the RtI team: _____

Instructions: Training has been broken down into six areas of Response to Intervention and the Problem Solving Model. Within each area, please indicate the total number of hours of formal training, staff development, and follow-up/refresher training you have participated in within the last two years. This can be achieved through reviewing training certificates. For general guidance, a half day of training is usually recorded as 4 hours, while a full day training is 8 hours. Building level staff development and followup training may be more varied.

Comprehensive commitment and support

How many hours of training have **you** participated in related to building a school wide system, raising building and/or district level awareness, and improving staff understanding and support of an RtI model?

Professional Training	_____	
In-school Staff Development	_____	Total:_____
Follow-up/Refresher Training	_____	

Establishing and maintaining a team process

How many hours of training have **you** participated in related to team meeting and consulting procedures including parent meetings and problem-solving team meetings

Professional Training	_____	
In-school Staff Development	_____	Total:_____
Follow-up/Refresher Training	_____	

Implementing a 3-tiered system

How many hours of training have **you** participated in related to the theory and process of implementing a three-tiered response to intervention model including general background, policies, and procedures for supporting RtI as a school-wide initiative.

Professional Training	_____	
In-school Staff Development	_____	Total:_____
Follow-up/Refresher Training	_____	

Conducting self-assessments

How many hours of training have **you** participated in related to assessing school levels of implementation, problem-solving team effectiveness, and fidelity of interventions?

Professional Training	_____	
In-school Staff Development	_____	Total:_____
Follow-up/Refresher Training	_____	

Implementing evidence based practices

How many hours of training have **you** participated in related to targeted, observable, research-based interventions across all three tiers?

Professional Training	_____	
In-school Staff Development	_____	Total:_____
Follow-up/Refresher Training	_____	

Monitoring and action-planning

How many hours of training have you participated in related to targeted progress monitoring including selecting and monitor interventions, when to change interventions and tiers, and when to make referrals for Special Education services. Note: This does not include training related to implementing specific interventions.

Professional Training	_____	
In-school Staff Development	_____	Total:_____
Follow-up/Refresher Training	_____	

QuickTime™ and a
decompressor
are needed to see this picture.

Curriculum Vitae
Karin A. Strohmyer
 7070 Creekfront Drive
 Fountain, CO 80817
kstroh22@me.com

Summary

I am a well-rounded professional with a focus on faith, family, and career. As a leader in special education, I have ensured that my education, career path, research, and leadership represent a focus on successful instruction and mentoring as evidenced by student, District, and mentee success. I am a doctoral candidate at the All But Dissertation (ABD) level, preparing to defend my proposal on Response to Intervention in rural school systems. I am endorsed in three areas of special education instruction, K-21. I consult with and train rural and urban school districts, as well as private agencies, on effective IEP authoring and services for optimal compliance and student outcomes. I have conducted research on RtI methods, proximity control, transitions, and paraprofessional learning. I mentor teachers and paraprofessionals through active online professional learning communities, direct observations, and targeted support, instruction, and co-teaching. I have a sound understanding of multiple intelligences, differentiated instruction, direct instruction, and transition systems. I continually seek opportunities to further my knowledge and advance the learning of those around me.

Objective

It is my objective to create positive social change within the educational community through instructing and mentoring existing teachers, special programs implementers, and teacher candidates to be successful teachers and lifelong learners. By remaining current in educational practices and research, conducting various workshops, and consulting with a variety of institutions, I am able to develop competent teachers and service providers who are on the cutting edge of education. Through my passion for the success of all students, I create an environment where students, and those who serve them, are highly motivated to succeed.

Work History

Fountain-Fort Carson School District 8

Fountain, CO, USA

Transitions Coordinator

August 2008-

Current

The Transitions Coordinator is an administrative position overseeing services for young adults with disabilities, ages 16-21, with a focus on increasing individual levels of independence. This includes development and implementation of programming, understanding of local, state, and federal resources appropriate to individual needs, and maintaining partnerships with appropriate private and public sector agencies and providers. As a Transitions Coordinator, I oversee a team of professional service providers as well as supervise contracted facilities. I am also responsible for District level compliance with State and Federal special education mandates. This involves regular training and consultation with School, District, and State level personnel. Compliance roles also include regular auditing of District level documentation, systems, and practices related to transitions.

As an RtI consultant, I collaborate with school-level RtI teams and district level coordinators to develop and maintain effective RtI systems based on school needs. This includes the identification and implementation of interventions, maintenance of data, and RtI team processes. I also serve as an interventionist and data analyst.

Within this position I also conduct a paraprofessional PLC (professional learning community) through an online collaborative community. In this capacity, I lead discussions, assign and evaluate independent projects, and provide direct training in disability awareness, progress monitoring, interventions, collaboration, and workplace responsibilities.

Finally, I provide training both in and out of district on effective IEP mapping, authoring, progress monitoring, and facilitating to promote greater student outcomes evidenced by clear data.

Pikes Peak BOCES and Member Districts

Colorado Springs, CO, USA

Special Educator/ RtI Team Leader/ Transitions Coordinator
2008

August 2003-August

As the Transitions Coordinator I developed initial programming to establish transitions procedures throughout the eight primary rural school districts served by the PPBOCES. This included evaluation of systems, program development based on compliance needs and school-level demographics, and direct training and follow-up with staff.

As the RtI team leader, I facilitated development of the RtI operating manual, policies, and procedures for the PPBOCES. I consulted with rural schools leaders and the Charter School Institute to develop building level programs and allocate training resources.

As a special educator for the PPBOCES, I served students preschool through age 21 with a variety of disabilities including cognitive, physical, multiple, learning, and behavioral disabilities.

Giberson Elementary

Colorado Springs, CO, USA

Special Educator
2003

December 2001-August

U.S. Army

Various, USA

Nuclear, Biological, Chemical Specialist / Training NCO
2001

November 1997-December

Education

Walden University

Minneapolis, MN, United States

Ph.D. ABD, School Leadership and Special Education

I combined requirements from the School Leadership and Special Education doctoral studies to create a more

well-rounded and in-depth educational and professional experience. Coursework included extensive studies in general and special education law and ethics; leadership roles in education administration, mentoring, and evaluations; human resources, school budgets, education system models, and support systems. In depth literature reviews and syntheses were conducted surrounding cognitive development, social development, and the development of professional systems. My dissertation topic, currently underway, considers the roles of rural school leadership and levels of staff training on the level of implementation of a Response to Intervention framework.

University of Colorado at Colorado Springs

Master of Arts, Special Education

While attending the graduate program at UCCS, I studied to receive endorsements in Learning Disabilities, Severe Cognitive Disabilities, and Severe Affective Disabilities. My thesis was a case study on the effects of proximity control on a 4th grader with significant identifiable emotional disabilities. I graduated with a 4.0 and was awarded outstanding graduate student of the year by the Education Department.

University of Nebraska at Kearney

Kearney, NE, United States

Bachelor of Science, Psychology

My undergraduate work consisted of a traditional liberal arts education with a strong focus in the sciences. I was an active member of Psi Chi and assisted in, and presented research on, spina bifida related to maternal seizure disorder medications. I graduated Cum Laude and participated in the Honors Program.

Skills

Effective IEP Authoring and Facilitating Trainer

3-4 Years Experience

I provide one to two day seminars on writing effective IEPs through a mapping process that promotes flow and consistency of information that will optimally identify strengths and needs and carry these throughout the IEP. Specific focus is given to consistency throughout the IEP, use of common vocabulary, measurable and achievable goals and objectives that are future oriented, and appropriate identification and implementation of services, accommodations, and modifications.

Training related to facilitating the IEP include the use of a variety of low and high tech visual aids, maintaining flow and focus, encouraging full-team participation, and ensuring key compliance points are addressed.

Finally, trainings also address moving from compliance on paper to implementation in the classroom.

Response to Intervention Consultant

3-4 Years Experience

As an RtI Team Leader, I coordinate team members in appropriate assessments, identification, intervention and progress monitoring practices. I maintain open communication regarding best practices with school staff and administration. I also provide program supports and updates to families participating in a variety of level of the RtI model.

As a consultant I work with staff to identify students eligible for the RtI process, to determine type and level of intervention, and to gather and rely on data to inform practices. I also work with staff and families to document and communicate progress.

Community Based Instruction

3-4 Years Experience

Instruction of students with disabilities within a community based setting requires careful individualized planning, but yields outstanding results in preparing students for greater levels of independence in a real-world, post-educational setting. This includes using transitional assessments to determine needs, identification of community resources, training of community partners for a co-teaching experience, and scaffolded instruction and coaching in genuine settings.

Applied Behavior Analysis

5-6 Years Experience

I am skilled in the use of a variety of tools and techniques to assess and remediate behavioral concerns including ABC analyses, functional behavior assessments, behavioral contracts, extrinsic and intrinsic motivators, and positive behavior support systems. This includes the use of replacement behavior training effective in working with persons with more significant cognitive or behavioral disabilities.

Administrative Level Instructional Planning

1-2 Years Experience

Instructional planning for the classroom includes evaluating learning styles and individual ability levels to coordinate comprehensive, differentiated instruction that reaches students performing at a variety of levels. It takes State standards, curriculum maps, and school vision and mission into account on a regular basis.

At the administrative level it includes planning course offerings and schedules to meet the needs of all students with teaching resources available. This includes the selection of courses and curriculum that support competitive post-school outcomes as well as teachers best equipped to deliver the targeted instruction.

Supervision and Evaluation

3-4 Years Experience

I am skilled in supervising staff working with and under me including teachers, paraprofessionals, and additional support staff and itinerants. This includes career, annual, and quarterly goals planning, summative evaluations, and formative evaluations. I incorporate a portfolio evaluation that includes planning documents, pre-evaluation meeting records, evaluation reports, and staff work samples. This may include professional development feedback and reports, staff presentations, instructional videos, variety in presentation and demonstration options and literature reviews, including classroom applications.

Differentiated Instruction

3-4 Years Experience

Differentiated instruction is key to the true success of all students. Differentiated instruction incorporates learning styles, abilities, and personal preferences as part of the instructional and evaluations process. Through differentiated instruction, I can learn more about how individual students learn and communicate what they know, by removing hidden barriers presented by learning styles, abilities, or life circumstances.

Technology Integration

1-2 Years Experience

I have a strong working knowledge of a variety of technology based instructional tools including authoring and editing written work, a variety of visual and auditory presentation methods (photo editing, movie making software, cartooning, basic graphic design), data management and presentation systems, and performance evaluation models.

Research Statistics

5-6 Years Experience, (Currently in use)

I am skilled in data coding, identifying and applying a variety of research models, evaluating data with SPSS, and reporting results based on statistical outcomes.

Interests

My professional interests include:

- teacher readiness for the differentiated classroom,
- self-advocacy and self-determination
- transitions
- paraprofessional development
- Response to Intervention

My personal interests include:

- Mission work
- Family-based activities
- Outdoor activities
- Cooking
- Reading

Certifications

Severe Cognitive Disabilities Teacher (Colorado Department of Education)

This is the equivalent of a significant support needs, or a moderate to significantly mentally retarded instructional endorsement.

Severe Needs Affective Teacher (Colorado Department of Education)

This is equivalent to an endorsement in teaching of students with significant emotional and behavioral disabilities.

Moderate Needs Teacher (Colorado Department of Education)

This is equivalent to a specific learning disability endorsement.

AIMSweb trainer certified (Pearson)

AIMSweb is a comprehensive progress-monitoring tool used at the elementary and middle school levels as part of a benchmarking, targeted, and intensive intervention and assessment system. It targets reading decoding, reading comprehension, math computation, spelling, and writing through brief one to three minute probes. It is an effective tool in monitoring student progress within an RtI framework.

Written Works/Publications

The Importance of Early and On-going Interventions for Early Elementary Children Identified as At-Risk for Learning or Emotional Difficulties

An in-depth review of cognitive development theories and current peer-reviewed literature, culminating in one district's reflection and development of procedures for the identification of at-risk students and the ongoing interventions necessary to develop skills necessary to promote learning and reduce risks of regression.

Effective Inclusion Practice that Support Positive Social Development in Rural Schools

Social learning theories were applied to current peer-reviewed literature to evaluate rural school systems models of inclusion for rigor and relevance for all students in a setting that closely mirrors society.

Achieving Sustainable Systems Change within a Response to Intervention Framework

Systems change theories were evaluated based on current, peer-reviewed literature and applied in the evaluation of leadership, resources, planning, and implementation of an RtI framework.

BOCES Response to Intervention Handbook

A handbook defining RtI key concepts, imperative roles, and school, district, and State level resources based on State level expectations of RtI implementation

**Fountain Fort Carson School District Paraprofessional PLC**

An ongoing website providing self-directed, and leader-directed guidance in developing professional knowledge, intervention skills, progress monitoring skills, teamwork, and problem-solving strategies. As a group participants respond to focus concepts. Individually participants are guided through self-selected skills development. Interactions and training culminate in the development of a personal portfolio of skills that is regularly updated.

Fountain Fort Carson Transitions Handbook

A publication that provides assessment and planning resources to teachers; planning, support, and resources to families; and a compilation of current research, State publications, and transitions focuses on continuing education, employment, and independent living. It is frequently updated based on newsletters, calendars, and community resources.

Awards

2008, Outstanding Teacher, Black Forest League

2004, Teacher of the Year, Special Education, Troops to Teachers, Midwest Region

2003, Outstanding Graduate of the Year, Education Department, University of Colorado, Colorado Springs

2000, Distinguished Honor Graduate, Primary Leadership Development Course, US Army

1998, Honor Graduate, Basic Training, Delta Company, Chemical Corps, US Army

1995, Cum Laude Graduate with Honors for Bachelors Degree Studies