A Case Study of a Therapeutic Day School's Implementation of Response to Intervention: The Implementation Process and Impact on Student Behavioral and Academic Functioning

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VITA

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CHAPTER I

INTRODUCTION

The U.S. Department of Education defines the term emotional disturbance as a “condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child’s educational performance:

a. An inability to learn that cannot be explained by intellectual, sensory, or health factors.

b. An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.

c. Inappropriate types of behavior or feelings under normal circumstances.

d. A general pervasive mood of unhappiness or depression.

e. A tendency to develop physical symptoms or fears associated with personal or school problems” (IDEIA, 2004).

Also noted in this definition is that emotional disturbance “includes schizophrenia, [but] does not apply to children who are socially maladjusted, unless it is determined that they have an emotional disturbance” (IDEIA, 2004).

Alternative school environments have been developed to provide students diagnosed with emotional disturbance with intensive, supportive and individualized mental health services in addition to an education. Therapeutic day
schools serve students for whom supports beyond those provided in the general education setting are needed in order to achieve emotional stability and academic success. The goal of therapeutic day schools is to provide mental health and academic supportive services to students identified as emotionally disturbed so that they may become functional in the least restrictive environment.

Therapeutic day schools are a nontraditional school setting and differ from traditional school settings in structure and services. For instance, as a routine part of students’ experiences at therapeutic day schools, students participate in various forms of therapy including individual, group and sometimes family. All students receive specialized education services under an Individualized Education Plan with an eligibility diagnosis of emotional disturbance in addition to any other existing diagnoses. Accommodations and modifications to the classroom environment and curricula as well as small classroom sizes are common to support the needs of students at therapeutic day schools. Therapeutic day schools allow for intensive and targeted supports and services, such as intensive therapies (psychological, physical, occupational, and speech), flexible school schedules, small student-to-teacher ratios, intensive academic and/or social supports, and transition resources. Although these differences exist, the goal of therapeutic day schools is similar to that of traditional school settings: to create educational environments that support and encourage the academic achievement of students such that students reach proficiency.

The Individuals with Disabilities Education Improvement Act of 2004 (IDEIA, 2004) includes language that gives educational agencies license to use
instructional processes that identify how well students respond to scientific, research-based instructional interventions. Response to Intervention (RtI) is an educational model of instruction that relies on research-based instruction and monitoring of student progress in order to provide students with the most appropriate educational experience. Because RtI aligns so well with the language of IDEIA 2004, an increase in the implementation of RtI has resulted. Originally RtI was defined as a process for identifying the presence of a learning disability after no significant changes in academic achievement pre- to post-implementation of validated interventions. Today, RtI’s purpose has expanded to more than simply identifying students with learning disabilities. Using a more holistic framework, RtI is also considered an educational model for providing research-based instruction tailored to meet the needs of all students in order to prevent school failure and promote student proficiency, regardless of special education eligibility (Jimerson, Burns, & VanDerHeyden, 2007).

Statewide development and implementation of RtI educational models are occurring at a rapid pace, such as in Illinois’ Flexible Service Delivery Model (Peterson, Prasse, Shinn, & Swerdlik, 2007), Iowa’s Heartland Area Education Agency 11 Problem-Solving Approach (Ikeda, Rahn-Blakeslee, Niebling, Gustafson, Allison, & Stumme, 2007), Ohio’s Integrated Systems Model (Graden, Stollar, & Poth, 2007), Minnesota’s St. Croix River Education District Model (Bollman, Silberglitt, & Gibbons, 2007), Pennsylvania’s Instructional Support Teams (Tucker & Sornson, 2007); Minneapolis’ Public School’s Problem-Solving Model (Marston, Lau, & Muyskens, 2007), Idaho’s Results-Based Model
(Callender, 2007), and Florida’s Problem-Solving/Response to Intervention Model (Batsche, Curtis, Dorman, Castillo & Porter, 2007). In some states, such as Illinois, all schools are required to implement Illinois’ RtI plan by the 2010-2011 academic school year (Illinois State Board of Education, 2010). Consequently, districts are implementing RtI programming with the goal of improving academic proficiency of students (Berkeley, Bender, Peaster, & Saunders, 2009; Brown-Chidsey & Steege, 2005). These implementations are occurring in both traditional and nontraditional school settings within districts.

An increase in the use of RtI has led to an increase in the demand for rigorous research on the effectiveness of various models of RtI (Burns, Appleton, & Stehouwer, 2005; Fuchs, Mock, Morgan, & Young, 2003). Given the widespread implementation of RtI across schools and districts, questions regarding its effectiveness in addressing student proficiency and preventing school failure are reasonably at the forefront of the research literature (Burns, Appleton, & Stehouwer, 2005; Jimerson, Burns, & VanDerHeyden, 2007; Kratochwill, Clements, & Kalymon, 2007). Moreover, questions regarding the successful and valid implementation of RtI, including individual school system changes, implementation fidelity, training and leadership, have also been raised (Daly, Kupzyk, Bossard, Street, & Dymacek, 2008). Research addressing these questions is necessary given the overwhelming growth in the implementation of RtI in both traditional and nontraditional school settings.

A number of studies have investigated the implementation process and effectiveness of RtI in traditional school settings, but research has not yet
examined these variables in nontraditional school settings serving special populations of students (Barnhardt, 2009; Burns, Appleton, Stehouwer, 2005; Burns & Ysseldyke, 2005; Kimmel, 2008; Lane, Gresham, & O’Shaughnessy, 2002; Mooney, Epstein, Reid, & Nelson, 2003; Wehby, Lane, & Falk, 2003). Specifically, there are no known published studies on the implementation or effectiveness of RtI at therapeutic day schools that serve students identified as emotionally disturbed, even though this school setting serves the most vulnerable student populations experiencing the most severe challenges in the educational setting. The proposed study will fill a gap in the RtI literature by exploring the implementation and effectiveness of RtI at a therapeutic day school.

Response to Intervention

Purpose

Three central purposes have been attached to RtI. The first is that RtI serves to ensure quality, research-based instruction and practices for all students (Daly, Kupzyk, Bossard, Street, & Dymacek, 2008; Barnhardt, 2009; Brown-Chidsey & Steege, 2005). This requires educators to provide instruction proven through research to effectively meet the learning needs of students. The second purpose attached to RtI is to serve as a systematic means of identifying students at-risk for learning difficulties and to provide appropriate intervention and prevention practices to eradicate future or further academic failures (Barnhardt, 2009; Brown-Chidsey & Steege, 2005; Daly, Kupzyk, Bossard, Street, & Dymacek, 2008; Speece, Case, & Molloy, 2003). Thus, appropriate levels of increasingly intensive instructional supports are provided for struggling students.
regardless of special education eligibility or special education needs (Daly, Kupzyk, Bossard, Street, & Dymacek, 2008; Brown-Chidsey & Steege, 2005). The third purpose attached to RtI is the establishment of a data-driven method of determining eligibility for special education services to address learning disabilities, replacing the existing cognitive function/academic achievement discrepancy model (Gresham, 2002; Fuchs, Mock, Morgan, & Young, 2003).

Within a traditional school setting in which general education and intensive, special education services are distinct, all three of the aforementioned purposes readily apply. However, in a nontraditional school setting, such as a therapeutic day school, where the intensive, individualized education services are the ‘general education curriculum, the purposes of RtI may look different. However, without existing investigations into the implementation of RtI in nontraditional school settings, it is unclear how these purposes may or may not fully apply in this different setting. For instance, at a therapeutic day school a student begins with intensive, supportive services; thus, the goal of a therapeutic day school may be to move students from very intensive to less intensive instructional supports in order to prepare them for transition to traditional school settings. This is in contrast to a traditional school setting where students typically move from less intensive services to more intensive services.

Core Elements

While RtI models are developed in schools and across districts with the aforementioned purposes in mind, RtI models may look slightly different across schools and/or districts. However, the current research on RtI indicates that there
are core elements of RtI service delivery that are present in virtually all RtI program models. These core RtI elements are: multitier program structure, student progress monitoring via ongoing assessments, and implementation of research-based interventions (Brown-Chidsey & Steege, 2005; Barnes & Harlacher, 2008; Berkeley, Bender, Peaster, & Saunders, 2009; Glover & DiPerna, 2007; Harr-robins, Shambaugh, & Parrish, 2009). These core elements are described in turn.

**Multitier**

As a multitier intervention, services are provided along a continuum with all students receiving universal supports and select individuals participating in need based services of varying intensity (Harr-Robins, Shambaugh, & Parrish, 2009; Barnes & Harlacher, 2008; Glover & DiPerna, 2007). Typically, RtI models include a three-tier system. Few are two- or four-tier systems, as most of the research shows evidence for the effectiveness of a three-tier model (Marston, 2005).

Universal or school-wide supports are considered primary prevention (tier 1) and typically address the learning needs of 80% of students (Harr-Robins, Shambaugh, & Parrish, 2009; Berkeley, Bender, Peaster, & Saunders, 2009; Glover & DiPerna, 2007). This tier includes a core, school-wide curriculum provided to all students designed to prepare students for achieving state-mandated performance standards (Brown-Chidsey & Steege, 2005; Hawken, Vincent, & Schumann, 2008). Targeted or group-based supplementary instruction is considered secondary prevention (tier 2) and typically addresses the learning
needs of about 15% of students (Brown-Chidsey & Steege, 2005; Berkeley, Bender, Peaster, & Saunders, 2009; Glover & DiPerna, 2007; Harr-Robins, Shambaugh, & Parrish, 2009). Students in this tier receive more intense instruction in small-group settings and may receive more instructional minutes in a particular academic domain in which the students are having difficulty (Hawken, Vincent, & Schumann, 2008). Intensive small group or one-on-one specialized instruction is the most intensive and considered tertiary prevention (tier 3) and typically address the learning needs of 5% of students (Brown-Chidsey & Steege, 2005; Berkeley, Bender, Peaster, & Saunders, 2009; Glover & DiPerna, 2007; Harr-Robins, Shambaugh, & Parrish, 2009).

**Student progress monitoring via ongoing assessment**

Decision-making processes in RtI are heavily dependent on student assessment, as all decisions for tier placement and intervention implementation are driven by student data (Barnes & Harlacher, 2008; Barnett, Daly, Jones, & Lentz, 2004; Glover & DiPerna, 2007). Universal benchmark assessment takes place at the start of the academic year in order to initially screen students and again at mid-year to assess tier movement. In between these benchmark assessments, continued progress monitoring is conducted (with frequency dependent on tier) to assess student responsiveness to tier interventions (Glover & DiPerna, 2007). Ongoing assessment allows for educators to determine how a student is responding, or not responding, to evidence-based interventions and practices. A common form of assessment is empirically-validated, curriculum-based measurements (CBM), which are brief, timed measures of academic skills
that discriminate between typical and atypical student performance (Barnett, Daly, Jones, & Lentz, 2004). Curriculum-based measurements have been shown to be highly effective in improving instruction, instructional decision-making, and educators’ awareness and responsiveness to student progress (Deno, 2003; Fuchs, Deno, & Mirkin, 1984; Marsten, Mirkin & Deno, 1984).

**Research-based interventions and practices**

Curricula, interventions and practices implemented under the RtI model must be research-based; or, in other words, scientifically-proven to be effective in positively impacting relevant academic skills and proficiency (Barnes & Harlacher, 2008). An RtI framework assumes that by providing research-based interventions and practices, inadequate student progress is not the result of inadequate instruction; rather, inadequate progress can be conceptualized with more certainty as the possible result of a learning disability.

**Response to Intervention Approaches: Standard Treatment Protocol and Problem-Solving Model**

Schools and districts can choose to adopt the standard RtI treatment protocol, the problem-solving RtI model, or a mixture of these approaches (Fuchs, Mock, Morgan, & Young, 2003; Hollenbeck, 2007). Core RtI elements exist within each approach. Thus, in both approaches, or in the mixture of approaches, students undergo universal screenings periodically throughout the year to determine appropriate tier placements. Ongoing assessment at each tier occurs at various intensities to determine responsiveness to interventions within each tier. And, research-based interventions are used in each tier. What differs between
these approaches is how and what research-based interventions are chosen and how placement decisions are made (Fuchs, Mock, Morgan, & Young, 2003).

**Standard treatment protocol**

Within the standard treatment protocol standardized interventions are used at each tier level for all students with similar problems in a given domain (Fuchs, Mock, Morgan, & Young, 2003). For example, all students identified as struggling or at-risk in reading would receive a standardized reading intervention for a specified number of weeks in a specified setting, such as 10-weeks of small group instruction for 35 minutes outside the general education classroom (Hollenbeck, 2007). The most noted standard treatment RtI program was implemented by Vellutino and colleagues (1996). At the beginning of the academic school year, students identified as the poorest readers received 30 minute one-on-one tutoring five days a week for the majority of the school semester. At the end of the school semester, students who continued to be identified as poor readers received an additional 8-10 weeks of tutoring. As illustrated in this standard treatment protocol, a standardized intervention is implemented for all students experiencing difficulty in a particular area (Fuchs, Mock, Morgan, & Young, 2003). Some success has been found with this approach in positively impacting reading and mathematics academic achievement and proficiency (Ardoin, Witt, Connell, & Koeing, 2005; Torgesen, Wagner, Rashotte, Lindamood, Rose, Conway, et al., 1999; Vaughn, Linan-Thompson, & Hickman, 2003; Vellutino, Scanlon, Sipay, Small, Pratt, Chen, et al., 1996). Although positive findings have been reported, some have argued that the
standard protocol does not allow for individualization and makes an a priori judgment about students’ difficulties and support needs without assessment (Fuchs, Mock, Morgan, & Young, 2003).

**Problem-solving model**

The problem-solving approach is by far the more frequently used and highlighted of the two RtI approaches (Fuchs, Mock, Morgan, & Young, 2003). The problem-solving model allows for individualization of intervention supports to address specific student needs. The problem-solving model follows a four-stage process with the following problem-solving steps: problem identification, problem analysis, implementation of the intervention, and problem evaluation (Fuchs, Mock, Morgan, & Young, 2003). Problem identification occurs when a problem or difficulty is detected for a student either through observation or assessment. The problem is further defined by formal assessment measures to quantify frequency, intensity and duration. In the problem analysis stage, instructional and student variables that may contribute to the solution of the problem are identified. Intervention and instructional supports possibilities are explored and the appropriate plan is developed. In the implementation stage, implementation of the intervention includes monitoring of treatment fidelity as well as collection of student data. The last step examines whether student data has indicated that the identified achievement discrepancy has narrowed, widened or remained unchanged in response to the intervention. Should the identified problem remain the same or become larger, the intervention is evaluated for modifications and re-implemented. Use of a five stage problem-solving model
also exists, which simply conceptualizes the problem analysis step as two independent steps: problem definition and design of the intervention (Brown-Chidsey & Steege, 2005; Deno, 2005). The problem-solving steps outlined in this model are dynamic and situational, such that steps may be repeated depending on need and applicability (Brown-Chidsey & Steege, 2005; Deno, 2005; Fuchs, Mock, Morgan, & Young, 2003).

Response to Intervention Research

Because the problem-solving approach has a stronger research base and is more widely used, this approach will be the focus of the current study. There are several RtI models that rely on the problem-solving approach that have empirical studies assessing effectiveness and exploring implementation. Research on these RtI problem-solving models are used to illustrate the existing research on the effectiveness and implementation of RtI.

Effectiveness of Problem-Solving Model

A relatively recent meta-analysis was conducted that summarized the effectiveness of the four largest empirically studied RtI problem-solving models at that time (Burns, Appleton, & Stehouwer, 2005). This meta-analysis reviewed eleven empirical studies on the following RtI problem-solving models: Iowa’s Heartland Area Education Agency 11 Problem-Solving Approach (Heartland; Ikeda, Tilly, Stumme, Volmer, & Allison, 1996), Ohio’s Intervention Based Assessment (IBA; Telzrow, McNamara, & Hollinger, 2000), Pennsylvania’s Instructional Support Teams (IST; Kovaleski, Tucker, & Duffy, 1995), and Minneapolis’ Public School’s Problem-Solving Model (MPSM; Minneapolis
Public Schools, 2001). One of the main questions answered by this meta-analysis was whether these RtI models lead to improved systemic and student outcomes. In this meta-analysis, systemic outcomes were conceptualized as referrals to and placements in special education, student time in special education services, and the number of students retained in a grade (Burns, Appleton, & Stehouwer, 2005). Additionally, in this meta-analysis, student outcomes were conceptualized as academic skill, growth in a particular skill, and time on task and task completion related to academic interventions (Burns, Appleton, & Stehouwer, 2005).

Overall, Burns, Appleton, and Stehouwer (2005) found that these RtI models lead to improved systemic and student outcomes with large weighted effect size averages of 1.80 and 0.94, respectively. Burns, Appleton and Stehouwer’s (2005) meta-analysis also included an examination of empirical studies that evaluated RtI models that were implemented by university researchers for the purposes of research. These models also proved to have strong, positive effects on systemic outcomes with a weighted effect size average of 1.80, and medium, positive effects on student outcomes with a weighted effect size average of 0.47.

Other field studies not included in Burns, Appleton and Stehouwer’s (2005) meta-analysis have been conducted on one of the RtI problem-solving models included in the 2005 meta-analysis and on additional RtI problem-solving models. Field studies have continued to show effectiveness for the Pennsylvania’s Instructional Support Teams (IST) (Kovaleski, Gickling, Morrow, & Swank, 1999; Sornson, Frost, & Burns, 2005). For example, Pennsylvania’s
IST has been shown to improve academic achievement specifically reading achievement as measured by standardized norm-referenced measures of reading (Kovaleski, Gickling, Morrow, & Swank, 1999). Additionally, schools implementing Pennsylvania’s IST showed greater gains on time-on-task behavior, task completion, and task comprehension measures than in years prior to implementation (Kovaleski, Gickling, Morrow, & Swank, 1999). Pennsylvania’s IST implementation in schools also resulted in overall decreases in special education placement. These decreases in special education placement were interpreted to indicate that those students who in the past would have been placed in special education were now receiving the needed instructional support in their regular classrooms and, therefore, no longer needed special education services (Sornson, Frost, & Burns, 2005).

Field studies have also shown effectiveness for Minnesota’s St. Croix River Education District Model (SCRED) (Bollman, Silberglitt, & Gibbons, 2007) and Idaho’s Results-Based Model (RBM) (Callender, 2007) problem-solving models. The SCRED model has been associated with positive outcomes in academic achievement as measured by statewide assessments. Specifically, the school implementing the SCRED model showed reductions of students scoring in the lowest achievement level on statewide assessments from 20% in 1999 to 6% in 2005 (Bollman, Silberglitt, & Gibbons, 2007). Moreover, the overall percentage of students reaching grade-level standards as measured by statewide assessments dramatically increased from 51% in 1999 to 80% in 2005 (Bollman, Silberglitt, & Gibbons, 2007). The SCRED model was also associated with an
increase in the percentage of students passing curriculum-based measurement in literacy from 35% in 1996 to 70% in 2006 (Bollman, Silberglitt, & Gibbons, 2007). Using more summative data, schools implementing Idaho’s RBM also reported significant improvements in reading achievement with a strong, positive effect size of 1.10 (Callender, 2007).

In terms of special education placements, the school implementing the SCRED model reported a decrease in special education placement (4.5% in 1995-1996 to 2.5% in 2005-2006), greater than that reported at the state (4.1% to 3.8%) and regional levels (4.0% to 3.3%) (Bollman, Silberglitt, & Gibbons, 2007). The school implementing Idaho’s RBM also reported a decrease in special education placements. Compared to an overall 1% increase in special education placements in all Idaho schools from 2002-2005, districts with at least one school implementing Idaho’s RBM reported a decrease in special education placements of 3% with RBM schools accounting for the majority of the decrease (Callender, 2007).

In sum, findings from the existing research suggest that the effectiveness of RtI problem-solving models is consistent and strong. RtI has been shown to decrease special education placement, increase accuracy of special education referrals, positively impact student outcomes in academic domains and school functioning. However, the proven effectiveness of RtI models is limited to traditional school settings. While it may be expected that the RtI problem-solving model would have similar positive effects at a nontraditional school that already utilizes individualized instructional plans, without an evaluation of RtI within
nontraditional schools, effectiveness cannot be confirmed. Additionally, the specific student outcomes likely to be impacted by RtI are also unclear (e.g. specific impact on overall reading grades versus CBM assessment scores). Research on the impact of these educational models on academic achievement is severely lacking for students whose psychological and behavioral difficulties warrant placement in nontraditional school settings (Wehby, Lane, & Falk, 2003). Thus, an evaluation of the effectiveness of RtI on student outcomes at a therapeutic day school will fill an important gap in the literature.

**Implementation of Problem-Solving Model**

The implementation of any educational reform is likely to significantly impact student and school systems. RtI is no exception. In understanding the implementation process of RtI, it is also important to consider the system and structural changes likely to occur as a result of implementation. Described below are three changes likely to occur as a result of program implementation as cited by Fixsen and colleagues (2005) with examples of school changes likely to occur with the specific implementation of RtI:

1. Changes in professional behavior including knowledge and skills of members within an organization (e.g. teacher and staff training on RtI and the subsequent acquisition of skills and knowledge to implement and maintain a functional RtI program, such as assessment, evidence-based interventions, tracking data, team decision-making, etc.);

2. Changes in organizational structures and cultures to support changes in professional behaviors (e.g. mandatory RtI team meetings, required
documentation of student data, implementation of identified curricula and instructional supports, revised roles of staff and teachers, etc.);

3. Changes in relationships between consumers, change agents, and stakeholders (e.g. relationships between teachers and students, relationships between support staff and teachers, etc.)

In addition to these general changes likely to occur with RtI implementation, more specific aspects of the implementation process have been examined.

The four large scale RtI models that were reviewed in Burns, Appleton and Stehouwer’s (2005) meta-analysis were also reviewed by Burns and Ysseldyke (2005) in order to identify and answer questions about the implementation process of RtI. Implementation fidelity has been cited as an important aspect of RtI implementation (Burns & Ysseldyke, 2005; Fuchs & Fuchs, 2006). Training, the development of collaboration teams, and leadership were cited as important factors to the successful implementation of RtI models across sites. All four large-scale RtI model sites reported that sufficient training of staff in RtI theory and practice was a critical element contributing to their successful implementation (Burns & Ysseldyke, 2005). Relatedly, the development of multidisciplinary collaboration teams comprised of trained staff was an important aspect of the implementation process that had a direct correlation to the effectiveness of RtI (Burns & Ysseldyke, 2005). Specifically, better trained teams that made more productive and efficient decisions regarding student progress was reported to be a critical aspect of RtI implementation (Burn & Ysseldyke, 2005). Lastly, determining the leadership (e.g. who will lead
implementation) at each school site was reported to impact implementation (Burns & Ysseldyke, 2005).

Although some research does explore the implementation process of RtI models in traditional school settings, this research is not expansive and some researchers claim that there remains a scarce amount of research that critically evaluates how schools are successfully, or unsuccessfully, implementing RtI models (Fletcher & Vaughn, 2009). This study continues to expand this RtI research base while filling gaps in the literature by including an examination of RtI implementation in a setting that has not previously been explored (Burns & Ysseldyke, 2005). Examination of RtI implementation in a nontraditional school setting also fills a gap in the literature on RtI by allowing for a comparison of how RtI implementation may be the same or differ in various settings.

**Response to Intervention Implementation at a Therapeutic Day School**

The therapeutic day school being evaluated in this study adheres to the Illinois Flexible Service Delivery Model. The Illinois Northern Suburban Special Education District (NSSED) developed the Illinois Flexible Service Delivery Model (FSDM), which is the state of Illinois’ RtI model (Peterson, Prasse, Shinn & Swerdlik, 2007). Illinois FSDM was initially developed to provide a flexible service delivery system for students and has evolved into the model problem-solving RtI program for the state of Illinois (Peterson, Prasse, Shinn & Swerdlik, 2007). As a result of evaluations conducted at traditional school settings within the NSSED, the implementation process has been determined to be an integral
part of successful RtI implementation and effectiveness (Peterson, Prasse, Shinn & Swerdlik, 2007).

**Model for Investigating the Implementation Process**

While there are suggested models for exploring a school’s implementation process of RtI (Daly, Kupzyk, Bossard, Street, & Dymacek, 2008), these existing models tend to be narrow and aligned with specific RtI programs as opposed to providing a more global assessment tool applicable to diverse RtI models. Thus, to guide this study’s investigation of the RtI implementation process, this study uses Fixsen and colleagues’ (2005) conceptualized stages of program implementation. Fixsen and colleagues’ (2005) conceptualization is based on the broader implementation research thereby providing a more global model for exploring implementation processes across specific types of programs. Thus, this model can be used to replicate evaluations of RtI implementation processes in other educational settings. Fixsen and colleagues’ (2005) define implementation as “a specified set of activities designed to put into practice an activity or program of known dimensions” (pp. 5) and have summarized six discernable stages in the process of implementation.

**Stages of implementation.** The six stages in Fixsen and colleagues’ (2005) process of implementation are exploration and adoption, program installation, initial implementation, full operation, innovation and sustainability. This study is particularly focused on exploring the beginning stages of implementation of RtI because the therapeutic day school being studied is in the first year of its initial school-wide implementation. Therefore, the last three stages of implementation
(full operation, innovation and sustainability) do not yet apply to the therapeutic day school being studied. Thus, the first three stages (exploration and adoption, program installation and initial implementation) are the most relevant to this study and are described below.

*Exploration and adoption stage.* Exploration and adoption occur when an organization or individuals within an organization determine that there is a need for an intervention based on some acquired data or available information (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). Exploration serves to access potential programs or practices that match the needs of the organization and determine whether adoption of any of those interventions is indicated. Once a decision is made to proceed with the implementation of a program, the program is adopted based on a combination of the criteria developed by the organization and required by the program (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). The resulting outcome of this stage is a clear plan for implementation inclusive of tasks and timelines to facilitate the proceeding stages, program installation and initial implementation (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). With regards to RtI implementation, the exploration and adoption stage entails the exploration of an RtI model program, the commitment to a selected RtI model program, and plans for procedures to facilitate school implementation.

*Program installation stage.* Once a program is chosen and adopted, several activities must occur before the program is implemented. These activities together delineate the program installation stage (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). The program installation stage prepares an
organization for initial implementation by addressing the development of frameworks and practices, and determining outcome expectancies (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). The program installation stage addresses core components of the implementation process and core components of the program being implemented.

Core components are the most essential and indispensable components of a program and of an implementation process (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). Core program components are program elements operationally defined. The program installation stage of RtI implementation may include the school’s operationalization of the elements of the chosen RtI model (e.g., multi-tier structure, progress monitoring procedures, etc.).

Core implementation components are factors that facilitate program fidelity (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). Fixsen and colleagues’ (2005) identified core implementation components that drive what Fixsen and colleagues call “high-fidelity practitioner behavior.” These components are integrated and compensatory and include: staff selection, pre-service and in-service training, ongoing consulting and coaching, staff and program evaluation, facilitative administrative support, and systems interventions (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). An exploration of a school in the program installation stage of RtI implementation would also include an examination of how the school has conceptualized and addressed these core implementation components.
Initial implementation stage. Once the guidelines for implementation are determined in the program installation stage, the next stage is the actual initial implementation of the installation plan (Fixsen, Naom, Blasé, Friedman, & Wallace, 2005). Initial implementation is complex and requires many changes. Fixsen and colleagues (2005) assert that these changes do not occur evenly or simultaneously across all divisions of an organization or across all parts of a new practice. During initial implementation the applicability and feasibility of plans laid out in the program installation phase are tested. During this time the dynamic nature of the process of implementation becomes apparent as organizations may need to revisit the program installation stage in order to rectify aspects of the program implementation that do not work. The initial implementation stage may remain awkward and create a feeling of constant transitioning until full implementation occurs such that program practices have been fully integrated into the organization’s structure and culture (Fixsen, Naom, Blasé, Friedman, & Wallace, 2005).

Importance of multiple perspectives during the implementation process

Inclusion of multiple perspectives when exploring the implementation process is important. Fixsen and colleagues’ (2005) describe a conceptual framework of how the multiple subsystems within a system interact with one another when change occurs. Fixsen and colleagues’ (2005) conceptual framework includes five components: a source, a destination, a communication link, a feedback mechanism, and operation within a sphere of influence (Fixsen, Naom, Blasé, Friedman, & Wallace, 2005). Source is essentially the program or
practice being implemented (i.e. response to intervention) (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). Destination is the individual or organization that adopts, houses, supports and funds the source (i.e. therapeutic day school) (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). Communication link refers to the individual(s) that actively work to implement the program with fidelity (i.e. teachers, administrators, and students) (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). Feedback mechanism is the regular flow of information about the performance of individuals and/or the organization (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). Lastly, programs are implemented within a sphere of influence, or the social, economic, political, historical, and psychosocial factors that influence people and/or organizations (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). In the current study, RtI is being implemented at a therapeutic day school during a time when RtI programming is being required, which may impact how it is received and how the implementation process is experienced by individuals within a changing system (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005).

In understanding this conceptual model as it applies to RtI implementation, it is evident that the implementation process is likely to impact and be impacted by the various systems and subsystems operating within a school. Including perspectives of those systems and subsystems will provide a deeper understanding of the successes and barriers experienced by a school as it progresses through the stages of implementation. Therefore, this study includes
perspectives of teachers, administrators and students in its exploration of the RtI implementation process at a therapeutic day school.

Qualitative data exploring the implementation process provide part of the story of RtI implementation. Qualitative data allows for an exploration of the process of RtI while the addition of quantitative data allows for an exploration of the impact of RtI. Combining explorations of the process and the impact can provide a full picture of RtI implementation.

**Evaluating Effectiveness Using Quantitative Measures**

Thus, in addition to evaluating the implementation process, the proposed study will evaluate the impact RtI implementation has on student outcomes in order to understand RtI implementation in this setting holistically (Shapiro & Clemens, 2009). Standardized assessment data are helpful and useful in understanding the impact RtI may have on student achievement and functioning. Quantitative data allow for an examination of the magnitude of change that may occur as a result of RtI implementation (Creswell, 2003). Additionally, for students at therapeutic day schools, socio-emotional and behavioral functioning are as significant to educational success as academic knowledge. Thus, this study not only examines academic and standardized assessment data, it also includes an examination of behavioral functioning data.

Use of both Fixsen and colleagues’ (2005) model of implementation stages and student academic and behavioral data provide a strong framework for exploring and understanding the implementation process and effectiveness of RtI at a nontraditional school. Moreover, findings regarding the implementation
process may inform and/or provide preliminary explanations for findings regarding RtI impact on student outcomes. Vice versa may also be true in which findings regarding student outcomes may provide quantitative evidence for or against qualitative observations.

**Summary of Study Rationale**

Response to Intervention is being implemented across traditional and nontraditional school settings and has been established as an effective educational model in traditional school settings. It is unclear whether this effectiveness translates to nontraditional school settings. Moreover, due to the unique structure and services characteristics of therapeutic day schools, it is important to understand how RtI is being implemented in a therapeutic day school setting. Although therapeutic day schools serve the most vulnerable student populations, nontraditional school settings such as therapeutic day schools are often left out of best practice research. This trend continues in the RtI research base with no research addressing the unique needs, challenges and outcomes therapeutic day schools may encounter and experience when implementing RtI.

To fill this gap in the literature, this study uses a global model of implementation processes and components to explore the process of RtI implementation at a therapeutic day school. Further, this study uses standardized academic data in addition to behavioral functioning data to evaluate the impact of RtI on student achievement and behavioral functioning at a therapeutic day school. Results of this study will add to the research literature in a number of ways. First, this study will provide information about the effects of RtI on the
academic achievement and behavioral functioning of those students for whom school success has not been a reality; thus, informing the general research literature on instruction and academic achievement and behavioral functioning for youth identified as emotionally disturbed and the general literature on the effects of RtI. Second, this study will provide information on how RtI development and implementation may differ in nontraditional settings, which can inform the implementation process for diverse school settings. Third, by using well-defined models for evaluating implementation and standardized data to evaluate effectiveness, this study will provide a standardized framework for evaluating RtI implementation and effectiveness that can be applied and replicated across settings.

Research Questions

To facilitate the exploration of this school’s RtI implementation process, the following guiding questions will be addressed using qualitative research methods:

Guiding Question 1. Using Fixsen and colleagues’ (2005) stages of implementation, how has this school progressed through the first three implementation stages?

A. How has this school progressed through the exploration and adoption stage, the program installation phase, and the initial implementation stage?

B. What barriers has this school encountered throughout each stage and how has the school addressed these barriers?
C. How do students, teachers and administrators’ perspectives on the school’s progression through the implementation stages converge and diverge?

Guiding Question 2. How does the school plan on sustaining its implementation of RtI?

To facilitate the evaluation of RtI implementation effectiveness at this school, the following research questions will be addressed using quantitative research methods:

Research Question 1. What impact has RtI implementation had on student scores on standardized assessments and academic grades?

Research Question 2. What impact has RtI implementation had on student behavioral functioning?
CHAPTER II

METHODS

The current study has two complementary goals. First, the current study seeks to better understand the implementation process of RtI at a therapeutic day school whose systemic structures and systems differ greatly from those seen in traditional school settings. Furthermore, this study seeks to determine what impact RtI has on the academic achievement and behavioral functioning of students whose socio-emotional and learning difficulties have resulted in placement outside the traditional school setting. Because very little research exists in this area and because this study seeks to explore a specific setting in depth, a case study approach is appropriate.

Case Study Approach

A case study explores in depth a program, an event, or a process using a variety of data collection procedures that converge in a triangulation fashion (Creswell, 2003; Stake, 1995). Case study methodology is most appropriate for this study’s goals for a number of reasons. First, employment of a case study design is appropriate when the questions being posed are how and what questions, when the investigator has little control over the situation and/or events being studied, and when the focus is on a contemporary phenomenon within a real-life context (Yin, 1994; Berg, 1994; Patton, 2002). Second, qualitative case study allows for in-depth exploration of processes that are dynamic and fluid in nature
(Creswell, 2003; Patton, 2002). And, finally, case study allows for interaction with the data in order to capture the nuances and complexities of a single case (Creswell, 2003). Thus, it is the appropriate method for understanding the implementation of RtI at a therapeutic day school as it allows for the capturing of nuances and complexities experienced by this school as it progresses through the dynamic and fluid process of systemic change. Moreover, this study is concerned with questions of “how” a particular school setting is progressing through the stages of RtI implementation and questions of “what” impact this implementation has on student achievement and behavioral functioning.

**Mixed Methods Design within a Case Study**

Moreover, in order to facilitate the complementary goals of this study, a mixed method approach which combines qualitative and quantitative research methodologies is used (Creswell, 2003). In particular, this study uses concurrent procedures as described by Creswell (2003). Concurrent procedures converge qualitative and quantitative data; and both text analysis and statistical results are integrated for interpretation in order to conduct a comprehensive analysis of the research problem or phenomenon. The RtI implementation process is qualitatively explored through interviews with staff and teachers and focus groups with students. The effectiveness and impact of RtI is explored quantitatively through student academic and behavioral data. In sum, qualitative methods are used to explore one level, the school’s implementation process, while quantitative methods are used to explore another level, individual student achievement and behavioral functioning.
The following model illustrates procedures of the concurrent strategy:

**Phase 1**

**QUAL ANALYSIS**
Descriptive coding to develop codebook and pattern coding

**QUANT ANALYSIS**
Preliminary analysis, demographics, frequency distribution

**Phase 2**

**QUAL DATA REDUCTION**
Consensus coding and thematic coding to answer qualitative research questions

**QUANT DATA REDUCTION**
Growth model analyses to test growth patterns over time

**Phase 3**

**DATA INTEGRATION**
Combine quantitative and qualitative data reductions to summarize findings

Figure 1. Steps of concurrent strategy, adopted from Creswell and Clark (2007)

In phase one both qualitative and quantitative data are analyzed separately. In phase two data reduction, the qualitative data are reduced to thematic categories and applied to guiding questions and the quantitative data are reduced to statistical results to answer research questions. In the final stage, the data from both qualitative and quantitative analyses and deductions are integrated to create holistic perspective of the case study.

**Researcher’s Perspective**

When using qualitative methodology it is important to identify the role of the researcher in order to acknowledge the researcher’s biases and perspectives and the role such biases and perspectives may play in the collection and
interpretation of the research (Creswell, 2003). I have a deep and direct connection to educating youth with emotional and behavioral difficulties.

After graduating from an undergraduate program in psychology, I committed to teaching for two years in a failing, urban middle school located in a socio-economically disadvantaged, predominately ethnic minority community. I taught special education for students with mild to moderate disabilities. Although many of my students had recorded diagnoses of various learning disorders, behavioral and socio-emotional difficulties appeared to significantly impact their learning as much as, if not more so than, documented learning disorders. Management of skills deficits in socio-emotional functioning soon became my primary job and educational goal attainment became secondary. As a teacher, I struggled with finding the right balance between the educational enrichment and socio-emotional support of my students. As I taught, I also worked towards attaining a Masters of Arts degree in special education. Within this master’s program, I still felt a struggle to access the necessary resources, knowledge and support to effectively reach my students emotionally and academically. I felt discontent with the disconnection between emotional and behavioral functioning and academic achievement that was apparent in my training. After my two year commitment in the classroom, I came to believe that I could have a deeper and more profound impact on my students in therapeutic role rather than an educator role. I, therefore, entered a clinical psychology doctoral program with the hopes of mastering the necessary skills and gaining the appropriate knowledge that would ultimately help students similar to those I attempted to teach.
In graduate school I have been able to connect emotional and academic aspects of student functioning that I always felt went hand-in-hand. As a graduate student, I have sought training experiences that combine education and psychology, such as working consultatively with my clients’ educators as I worked with my clients and their families. In my experience, I have found that addressing academic difficulties in isolation is ineffective and incomplete for students whose socio-emotional and behavioral functioning are significantly limiting their abilities to learn. My current training at a therapeutic day school for students with serious emotional disturbances is an outgrowth of this sentiment. And, through my work at a therapeutic day school, I have fine-tuned my interests in education and psychology by taking on a research project that explores how educational reform and policy can combine with therapeutic techniques to effectively support and teach students with serious emotional disturbances so that they may find success in the academic setting.

Given my professional relationship with the school principal’s wife, she is my doctoral advisor, I have been certain to be cautious of any biases this may produce. I believe that I have explored all potential biases, e.g. wanting to provide my advisor’s spouse with ‘good news,’ and am confident that I have resolved them prior to conducting this research.

**Context**

The unit of analysis is a therapeutic day school located in the northern suburbs of Chicago. This school serves about 150 students in middle (6-8) and high school (9-12) from various northern school districts. This therapeutic day
school services students from various school districts. Students can attend this therapeutic day school at various points in their educational career. For example, a student may enter this therapeutic day school in the 7th grade after his neighborhood school has determined it is unable to meet the student’s needs. That student may stay at this therapeutic day school for any period of time deemed appropriate for stabilization and to ensure success when back at neighborhood school. Equally possible is for a student to enter at earlier or later grades and continue at the therapeutic day school until graduation from the 12th grade. Students’ trajectories in terms of length of stay may vary depending on the student. Moreover, a student may leave this therapeutic day school for a number of reasons, including graduation, transition back to neighborhood school, school dropout, or enrollment in other educational programming, among others.

This school was purposefully selected for the following reasons in order to create an information rich case study (Creswell, 2003; Patton, 2002): 1. It is an established therapeutic day school where all students have been identified as having a serious emotional disturbance; and 2. At the time of data collection, it was in its second year of RtI development and in its first year of RtI implementation. Thus, this school is able to provide valuable information on the initial stages of RtI development and implementation.

Participants

For qualitative analyses, participants in this case study included school administrators directly involved in curriculum and instruction development, special education teachers, the school principal, and students representing each
grade level (6-12) for qualitative analyses. For quantitative analyses, data was obtained from student academic and behavioral records for the entire student body.

**Recruitment**

**Staff.** Administrators and teachers were recruited via flyers and personal contact from this researcher. Three administrators, including the school principal, and all teachers (10 total) were given information about the current study and recruited to participate in individual interviews. All three administrators and eight teachers agreed to participate in interviews. Interviews were scheduled either before school, after school or during teacher preparatory hours.

**Students.** Original student sampling intended to select students based on frequency of participation in curriculum-based measurements (CBM) assessments, such that two students would have been randomly selected from each grade level group of students who have participated in 75% or more CBM assessments. However, for minimal disruption of the normal school day and for school personnel convenience, recruitment scripts and flyers were given to teachers to announce and advertise to students at convenient times. Student volunteers were given parental permission forms and those that returned forms prior to or on the day of focus groups were welcomed to participate in focus groups. Attempts were made to recruit students from each grade level; however, not all student volunteers returned parent permission forms. Thus, the resulting student sample for participation in focus groups was smaller and less representative of the total student population than expected.
Measures

Demographic Questionnaire

A demographic questionnaire was used to obtain basic demographic information from participants (Appendix A).

Qualitative Measure.

A semi-structured interview protocol was used to gather perspective information from participants. Fixsen and colleagues’ (2005) model of the implementation process was used to guide the development of the interview protocol. Two versions of the interview protocol were created to match the type of participant, such that unique teacher and administrator protocols were developed. Open-ended questions formulated a priori were reviewed by experts (e.g. school psychologists and teachers) for clarity, flow and neutrality. Flexibility to modify and/or create new open-ended questions as the qualitative data collection proceeds was permitted as recommended in qualitative research (Creswell, 2003; Patton, 2002).

The semi-structured interview protocol is divided into four sections and mostly corresponds with Fixsen and colleagues’ (2005) implementation stages (Appendix B). The first section asks questions related to activities and processes likely to occur during the exploration and adoption stage. The second section asks questions related to activities and processes likely to occur during the program installation stage. The third section asks questions related to activities and processes likely to occur during the initial implementation stage. And, finally, the fourth section asks questions addressing sustainability and was included only
on the interview protocol for administrators. The interview protocol included for all participants an open-ended invitation to add any comments or general opinions the participants deem appropriate. The interview protocol was piloted with one teacher, one administrator and one student in another school setting prior to interviewing participants to ensure clarity, flow and neutrality. Minor revisions to all protocols were made.

Originally, individual student interviews were intended to be conducted in addition to teacher and administrator interviews. However, after conducting two student interviews, it became apparent to this researcher that students had difficulty reflecting on specific RtI activities and concepts as they impacted their academic achievement and behavioral functioning. Students’ difficulty stemmed from a lack of knowledge regarding RtI vocabulary and interventions as well as students having difficulty with insight-oriented reflections. Thus, it was determined that focus groups organized by academic program (6-8, 9-10, and 11-12 grades) comprised of 4-6 students that focused on overall educational experiences would better allow students to express and reflect on experience at this school since RtI implementation. Focus group protocols were developed to include less specific RtI language and identification of concepts and include more open-ended questions regarding general opinions on class structures, assistance from teachers, helpfulness of teacher interventions, and assessment tools and procedures.

Related RtI documents were also intended to be included in this case study (e.g. RtI team meeting minutes, RtI procedures and protocols, and RtI team
problem-solving documentation (e.g. interventions plans, functional behavior analyses, etc.)); however, these documents were either nonexistent in this setting (e.g. RtI procedure and protocols, RtI team meeting minutes), did not exist in any uniform or consistent way across teachers (e.g. intervention plans), or were inaccessible or unavailable to this researcher (e.g. RtI team problem-solving documentation). Therefore, RtI document analysis was not conducted or included in final qualitative analyses.

Quantitative Measures

Student academic and behavioral functioning data were collected as quantitative measures. These data include scores on benchmark measures, academic grades, and daily behavioral functioning data. Ongoing (weekly) curriculum-based measurement scores were intended to be collected and included in quantitative analyses; however, these data were not included because 1. weekly curriculum-based measurement data for 2009-2010 academic school year was not systematically conducted and organized across all classrooms; and, 2. any existing weekly curriculum-based measurement data for the 2009-2010 and 2010-2011 academic school year were not made available to the researcher as they were not readily accessible to the administrator providing quantitative data. Quarterly assessments using curriculum-based measurements were systematically conducted for benchmarking purposes and thus were included as benchmark measures described below. Progress made towards Individual Education Plan (IEP) goals was also intended to be collected and included in quantitative analyses; however, per administrator advisement, IEP goal data were deemed unreliable and varied
remarkably from student to student. Moreover, IEP data availability was dependent on length of time students attended this school; and because length of stay varied widely from student to student, comparable IEP goal data for all students were not available. Each of the other quantitative data sources are described below.

**Standardized measures of academic progress.** Benchmark assessment are administered quarterly (fall, winter, spring) of each academic year and include Measures of Academic Progress (MAP) and curriculum-based measurements (CBMs), which are both assessments of grade-level academic skills. MAP and CBM assessment scores administered in the fall are used to place students in tiers and winter and spring benchmark periods are used to determine whether students are making standardized grade level progress. At this phase of RtI implementation at this school, MAP and CBM assessments for benchmarking purposes were only being conducted and systemically documented for the academic domain of reading. This included the following MAP assessments: Overall Reading and Language Usage, and the following CBM assessments: Reading Comprehension and Reading Fluency.

**Grades.** Academic grades are calculated four times a year: October, December, March and June. Students are graded on a letter system: A, B, C, D and F. Students receive grades in all subjects. For the purposes of this study, academic grades in reading and mathematics were used as those are the subjects for which RtI programming has been implemented.
Behavioral functioning. Student behavioral functioning was accessed via student behavioral point data. Behavioral point sheets are completed by all students on a daily basis. Students can earn up to 100 points per day with 10 points per academic period. Students may earn points on a number of behavioral dimensions, such as following directions, work productivity and respect for others. Higher amounts of points indicate better behavioral functioning. Week ending averages across all dimensions (resulting in one average score per week per student) were used in this study.

Procedures

Institutional Review Board Approval

Approvals from DePaul University’s and NSSED’s Institutional Review Boards (IRB) were obtained. In congruence with IRB protocol, consent from administrators and teachers were obtained prior to interviews and assent from students with consent from legal guardians were also obtained prior to the start of focus groups. In consent and assent forms, participants were informed that all information collected will be kept confidential and in a locked file, and that only aggregate information, excluding any identifying information, will be summarized in the final report. Additionally, the consent and assent forms included information regarding the purpose of the study, and risks of, benefits to, and procedures for participating in the study.

Data Collection

After IRB approvals were received, qualitative data was collected over a three month time period in the summer and fall of the 2011-2012 academic school
year (summer and fall of 2011). This time point provided the most valuable and rich information as students, teachers and administrators had one complete year of RtI implementation on which to reflect and report. Moreover, this time frame allowed time for the researcher to engage in one form of the data validation process, member checking, in which participants’ responses were summarized and reviewed by the participants for accuracy.

Interviews were conducted in a private room in order to maintain confidentiality. Participants were reminded of confidentiality and anonymity (de-identified data). Consent was collected at the time of the interview for staff, while parent consent for students was collected in advance as described in student recruitment and sampling section above. Interviews with administrators and teachers took place during non-instructional times before and after school and/or during preparatory periods. Focus groups with students took place during student lunch periods and students were served pizza. In addition to interviews and focus groups being digitally recorded, the researcher took notes and documented nonverbal observations during the interview process. The average interview was approximately 35 minutes in length. All interview data has been kept in a locked cabinet, only accessible to the researcher and research team.

Student academic achievement and behavioral functioning were collected directly from school administrators via student records. All information was de-identified by use of participant numbers in place of names.
Qualitative Data Analysis

A research team consisting of the primary researcher and two research assistants prepared and coded the qualitative data. Prior to involvement, research assistants explored biases by stating their perspectives and experiences relevant to this project. The researcher discussed statements with research assistants until biases were explored and addressed. All interview data was transcribed verbatim by the primary researcher and the resulting transcripts were verified against the audio recordings to ensure accuracy. Coding occurred with hard copies of transcribed interviews for descriptive coding. Pattern coding was completed with electronic versions of transcribed interviews. Theme coding and organization were also conducted with electronic versions of transcribed interviews.

Coding. A three-step coding process was used as recommended by Creswell (2003). The three-step coding process includes descriptive, pattern and thematic coding. Two teacher interviews and one administrator interview were selected for descriptive coding which provided a basis for the development of a coding manual. Interviews were purposefully selected to include diverse perspectives and themes. All sentences of each interview were coded during this initial descriptive coding stage in order to ensure no novel thematic issues were overlooked. The unit of analysis in this study was each participant’s response to a specific question. Thus, it is possible for participants to express more than one belief, idea or theme within a single response; and, it is possible for more than one descriptive code to be applied to a single participant response. Descriptive coding of each selected interview continued in this fashion. Throughout the coding
process new descriptive codes was created as novel concepts and ideas emerge. Existing descriptive codes created from one interview were applied where applicable to segments of data in proceeding interviews. Minimal interpretation is used during the descriptive coding stage as participants’ perspectives are neutrally identified and labeled by descriptive codes. For example, a student response “They’re always there for me and that’s important” may receive the descriptive code ‘students value support from teachers’ in order to describe student’s main point.

Once all descriptive codes were identified from the initial three interviews, the next step conducted was pattern coding. Pattern coding groups descriptive codes into categories. An example of this may be grouping the following sample descriptive codes: ‘students value support from teachers,’ ‘students think it is important for teachers to get to know them,’ and ‘for students, liking their teachers helps learning.” The pattern code that groups these descriptive codes might be ‘Student and teacher relationship important for students.’ A coding manual was then created using these categories created from grouping descriptive codes. Definitions and boundary conditions of each category code was created to ensure mutual exclusiveness and to ensure that any coded portion of participants’ responses (i.e. specific phrases) received no more than one pattern code. A final step in the pattern coding process was a second pattern coding to allow for interviews that were coded descriptively earlier in analysis to be reanalyzed using the refined and possibly new categories created in later coding. Interviews were pattern coded by the research team members individually and then pattern codes
were discussed until a consensus was reached by all members of the team. The final stage in the coding process was thematic coding. Thematic coding entails comparing categories to identify connections between pattern codes to create major themes. An example of this might be grouping the following sample pattern codes: ‘Student and teacher relationship is important for students’ and ‘Students on task and work completion improved in classes with teachers they liked.’ A theme from combining these pattern codes could be, ‘When students have a good relationship with teachers, they perform better in the classroom.’ Major themes were used to address the guiding research questions.

**Credibility of findings.** To ensure accuracy of information gathered from participants, transcribed interviews and focus groups were made available to participants for review. In addition to this member checking validation procedure described, triangulation was used to validate the credibility of the findings. Triangulation involves the integration of different data sources of information and using the integration to build a coherent justification for themes (Creswell, 2003). In this study, different data sources were represented by different types of participants (teachers, students and administrators).

**Descriptives.**

*Teacher and administrator participants.* Eight of ten teachers were individually interviewed. Two of ten teachers opted to not participate in individual interviews. Of the eight teachers who were interviewed, data from seven of those teachers were used in qualitative analyses. One of the eight teachers was not included in data analyses due to the teacher’s substitute teacher
position, which meant that this teacher was not consistently or concretely involved or responsible for RtI implementation. Of the remaining seven teachers three were teachers in the middle school (grades 6-8), two were teachers in the 9/10 high school program and two were teachers in the 11/12 high school program. The average range of the length of stay at this school in the role of a teacher was 8-10 years. Five of the seven teachers held a master’s degree in special education or an education related field. The remaining teachers held bachelor degrees in specific academic subjects. The length of teachers’ careers, i.e. how long they have been in the profession of teaching, ranged from 10 to 15 years.

Three administrators were interviewed and included the school principal, a program supervisor and the school’s education consultant. All administrators interviewed held advanced degrees (master’s level or higher) in education and/or leadership. All three of the administrators interviewed had been in their respective roles at this school for at least 7 years and had been in their respective profession for at least 10 years, with two administrators in the profession for more than 15 years.

Student participants. Ten students participated in three focus groups. Half of the ten students were in the 12th grade while one was in the 7th, three in the 8th and one in the 9th. The average age of students was 16.1 years. Fifty percent of students were female. Four of the ten students were in their first episode of placement while the remaining six were in their second or third episode. Students reported on the reasons for enrollment at this school with some students reporting
more than once reason. Seven students reported referral to this school for behavioral and/or emotional problems. Three students reported referral due to grades and two students reported referral due to substance abuse.

**Quantitative Data Analysis**

Quantitative data analyses are a first step in understanding the potential impact of RtI on student academic achievement and behavioral functioning. Although not based on an experimental design, these analyses provide some insight into the potential effectiveness of RtI on outcomes of students with severe emotional disturbances. Multilevel growth modeling analyses were used to test and illustrate trends in student achievement and behavioral functioning from pre-RtI implementation to post-RtI implementation. Multilevel modeling was chosen as the ideal analyses due to the non-independent nature of the longitudinal data collected from students over multiple time points. Independent multilevel growth models for each outcome were tested in which repeated behavioral or academic observations from each student represented level 1 variables, and the grade level of each student represented the level 2 variable. The model comparison approach as recommended by Bliese and Ployhart (2002) and Bliese (2009) was used here. The model comparison approach begins with a model representing simple relationships and then additional model characteristics are added one at a time and tested against the previous model. Should the additional model characteristic significantly fit the data better than a model without the additional characteristic, the model is updated to include that additional characteristic. Should a model with the additional characteristic not significantly fit the data better, that
characteristic is dropped from the model. Statistical programming R (R Core Team, 2012) was used for all quantitative analyses.

Step 1. The first step in conducting growth modeling analyses was to organize data in a manner that is amenable to these analyses and then to visually examine this data (Bliese, 2009). Therefore, individual data sets were created for each outcome variable, and each data set was transformed from multivariate form to univariate form, also known as “stacking” the data set (Bliese, 2009). In “stacking” the data set, several columns are created to include the following: participant number, an index of time, outcome variable, and participant grade at time 1. In stacked data sets, some variables may be repeated, such as participant number and grade, for as many time points as the outcome variable is collected.

The following example illustrates this transformation:

<table>
<thead>
<tr>
<th>Multivariate Form</th>
<th>“Stacked” Univariate Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant Number</td>
<td>Behavior Time 1</td>
</tr>
<tr>
<td>1</td>
<td>80</td>
</tr>
<tr>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>70</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
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In the stacked form, “Behavior” is the multivariate dependent variable used in level 1 analyses and “Grade” is now in the correct format to be used as a level 2 predictor variable.

Once the data has been transformed into the correct format for growth model analyses, a visual inspection of the data is conducted by creating individual plots of outcome variable by time for all participants. In this case, this is a plot of academic or behavioral data across various time points for each student. The
visual inspection should include observations of the variability in the outcome variable generally and in how the outcome variable changes over time across participants (Bliese, 2009). The visual inspection gives reason for conducting growth model analyses to better understand and specify the visually seen relationship between the outcome and time. To further ensure the data is suitable for analysis, students who had less than 2 data points for a specific outcome were excluded from that outcome variable’s database. For example, if a student had less than 2 behavioral outcome data points while having 2 or more data points for all academic outcomes, that student was excluded from behavioral outcome data analysis while remaining included in academic outcome data analyses. Additionally, all data sets for each outcome were evaluated for outlier data points. Outlier data points were excluded from data analyses.

Step 2. Step 2 is to examine the outcome variable and determine if the variance in the outcome variable can be explained by properties of the participant providing the data point. To do this, one estimates a null model and uses it to calculate the intra-class correlation (ICC) (Bliese, 2009). In this study, the ICC indicates how much of the variance in academic or behavioral outcomes is explained by characteristics of the student who provided the data, and indicates whether there are differences among students.

Step 3. The next step is to model the fixed relationship between the dependent variable and time, typically beginning with a test of a linear relationship followed by tests of more complex relationships, such as quadratic and cubic (Bliese, 2009). ANOVAs are conducted to test significant differences
between the various relationships. In this study, data points across two academic school years were used to create one series of data points. The first academic year was prior to RtI implementation while RtI implementation occurred during the second academic year. A positive quadratic relationship would indicate a significant positive increase in the second half outcomes, which in turn would indicate a significant increase in academic or behavioral outcomes during the second year of data collection which was during RtI implementation. Thus, a quadric relationship would indicate a significant positive increase in outcomes after RtI implementation.

Step 4. The next step is to determine if the significant relationship found in step 3 between the dependent variable and time is constant for all individuals. To test for this, one adds to the existing significant relationship between the dependent variable and time a model that allows for slopes of individuals to vary (Bliese, 2009).

Step 5. The time-series data collected in this study violates assumptions of independence among data points. The next step is to account for the fact that this study’s time-series data violate classical linear regression assumption that the correlation of the sum of all error terms is equal to zero and that error terms are independently distributed across observations. Serial correlation occurs when the correlation of the sum of all error terms is not equal to zero and there is a pattern across error terms. Furthermore, in time series data, such as that collected in this study, an error term is dependent on the previous error term. When the pattern across error terms is that error terms are dependent on previous error terms, this is
called an autoregressive process. Thus, to account for these violated assumptions (e.g. serial correlation and autoregressive process just described), an autoregressive structure with serial correlations is added to the model to determine if the modeled relationship is improved (Bliese, 2009).

Step 6. The final step is to tests for the predictive value of level-2 variables, such that one tests for whether a sample characteristic predicts the dependent variable, which is a main effect, and/or predicts the slope between the dependent variable and time, which is a moderator effect (Bliese, 2009). To test for the predictive value of a sample characteristic in predicting the dependent variable, a new fixed effect is added to the model and a significance test is conducted to determine if the addition of the fixed effect adds significance to the model (Bliese, 2009). To test for the predictive value of a sample characteristic in predicting slope an interaction term is added to the model that includes time and the sample characteristic (Bliese, 2009). A model including this interaction term is significance tested against the most up to date significant model to determine if the addition of the interaction term adds significantly to the model (Bliese, 2009).

**Descriptives.**

*English grades.* Data from 147 students were used in English grades analyses. Students ranged from the 6th grade to the 12th grade with 6.8% in the 6th grade, 6.8% in the 7th, 10.2% in the 8th, 21.8% in the 9th, 15.6% in the 10th, 19.7% in the 11th and 19% in the 12th grade. English grades were categorized on a scale of 0-4 with 0 =F, 1 = D, 2 = C, 3 = B and 4 = A. Twenty-one and a half percent of all grades were Fs, 19.6% were Ds, 25.6% were Cs, 24.5% were Bs and 8.8%
were As. The median grade for students in the 6th, 7th, 8th, 10th, and 11th grades was a D while the median grade for students in the 9th and 12th grades was a F. The total number of data points included in data analysis was 8 with the first 4 points comprising the 2009-2010 academic school year (Fall 1st and 2nd quarter grades and Spring 1st and 2nd quarter grades) and the second 4 points comprising the 2010-2011 academic school year.

Mathematics grades. Data from 150 students was used in Mathematics grades analyses. In these analyses, students ranged from the 6th grade to the 12th grade with 7.3% in the 6th grade, 6.7% in the 7th, 10.7% in the 8th, 20.7% in the 9th, 15.3% in the 10th, 20.7% in the 11th and 18.7% in the 12th grade. Mathematics grades were categorized on the same scale as English grades of 0-4 with 0 = F, 1 = D, 2 = C, 3 = B and 4 = A. Seventeen and a half percent of all grades were a F, 22.8% were Ds, 25.8% were Cs, 23.4% were Bs and 10.5% were As. The median grade for students in all grades was a D. Identical to English grades, the total number of data points included in data analysis was 8 with the first 4 points comprising the 2009-2010 academic school year and the second 4 points comprising the 2010-2011 academic school year.

Curriculum-based measurement assessment: Overall reading. Data from 79 students was used in CBM overall reading outcome data analyses. Students ranged from the 6th grade to the 12th grade with 8.9% in the 6th grade, 12.1% in the 7th, 16.7% in the 8th, 12.1% in the 9th, 13.6% in the 10th, 21.2% in the 11th and 13.6% in the 12th grade. The average CBM overall reading data score was 25.35. The average scores for each grade level were as follows: $M = 23.74$ ($SD = 9.91$)
for 6th, $M = 20.46$ ($SD = 13.16$) for 7th, $M = 30.56$ ($SD = 6.15$) for 8th, $M = 27.72$ ($SD = 11.19$) for 9th, $M = 29.04$ ($SD = 10.21$) for 10th, $M = 26.70$ ($SD = 9.64$) for 11th, and $M = 23.67$ ($SD = 8.90$) for 12th grade.

**Curriculum-based measurement assessment: Reading fluency.** Data from 84 students was used in CBM reading fluency outcome data analyses. Students ranged from the 6th grade to the 11th grade with 13.3% in the 6th grade, 17.8% in the 7th, 26.7% in the 8th, 28.9% in the 9th, 6.7% in the 10th, and 6.7% in the 11th. There was no data reported for students in the 12th grade. The average CBM reading fluency data score was 132.83. The average score per grade level was as follows: $M = 126.00$ ($SD = 43.41$) for 6th, $M = 107.61$ ($SD = 43.89$) for 7th, $M = 147.28$ ($SD = 32.53$) for 8th, $M = 142.29$ ($SD = 28.30$) for 9th, $M = 173.67$ ($SD = 30.24$) for 10th, and $M = 140.17$ ($SD = 18.10$) for 11th grade. Four data points were used for these analyses and comprised scores from the fall and spring of the 2009-2010 and the 2010-2011 academic school years.

**Measure of academic progress assessments: Overall reading.** Data from 93 students was used in MAP overall reading outcome data analyses. Students ranged from the 6th grade to the 12th grade with 7.2% in the 6th grade, 9.6% in the 7th, 15.7% in the 8th, 20.5% in the 9th, 18.1% in the 10th, 18.1% in the 11th, and 10.8% in the 12th. The average MAP overall reading data score was 209.29 with a $SD$ of 21.54. The average score per grade level was as follows: $M = 203.82$ ($SD = 19.37$) for 6th, $M = 206.84$ ($SD = 18.77$) for 7th, $M = 220.72$ ($SD = 12.34$) for 8th, $M = 209.80$ ($SD = 18.59$) for 9th, $M = 204.48$ ($SD = 23.71$) for 10th, $M = 210.98$ ($SD = 20.81$) for 11th and $M = 213.64$ ($SD = 26.73$) for the 12th grade. Six data
points were used for these analyses and comprised scores from the fall, winter and spring of the 2009-2010 and the 2010-2011 academic school years.

*Measures of academic progress assessments: Language usage.* Data from 85 students was used in MAP language usage outcome data analyses. Students ranged from the 6th grade to the 12th grade with 9.1% in the 6th grade, 9.1% in the 7th, 14.3% in the 8th, 22.1% in the 9th, 16.9% in the 10th, 19.5% in the 11th, and 9.1% in the 12th. The average MAP language usage data score was 208.58 with a $SD$ of 18.81. The average score per grade level was as follows: $M = 208.41 \ (SD = 17.63)$ for 6th, $M = 205.45 \ (SD = 20.50)$ for 7th, $M = 220.75 \ (SD = 8.85)$ for 8th, $M = 207.49 \ (SD = 15.75)$ for 9th, $M = 205.17 \ (SD = 21.73)$ for 10th, $M = 210.80 \ (SD = 17.25)$ for 11th and $M = 211.86 \ (SD = 15.12)$ for the 12th grade. Six data points were used for these analyses and comprised scores from the fall, winter and spring of the 2009-2010 and the 2010-2011 academic school years.

*Behavioral functioning.* Data from 196 students was used in behavioral outcome data analyses. Students ranged from the 6th grade to the 12th grade with 7.3% in the 6th grade, 6.1% in the 7th, 11% in the 8th, 20.7% in the 9th, 15.9% in the 10th, 20.1% in the 11th and 18.9% in the 12th grade. The average weekly behavioral point data score was 74.45 points with the minimum number of weekly points being 0 and the maximum being 100. The total number of weeks included in data analysis was 74 weeks with the first 37 weeks comprising the 2009-2010 academic school year and the second 37 weeks comprising the 2010-2011 academic school year.
CHAPTER III

RESULTS

Results of this study are presented in two sections. The first section describes qualitative results and the second section describes quantitative results.

Qualitative results

Qualitative analyses sought to answer the following guiding question: How has this school progressed through the first three Fixsen and colleagues’ (2005) stages of implementation, which include the exploration and adoption stage, the program installation stage and the initial implementation stage? Thematic findings are organized by implementation stage. The names of all persons identified by participants during interviews were changed to maintain privacy and confidentiality.

Exploration and Adoption Stage.

The exploration and adoption stage includes the following components: exploration of the program, selection and adoption of the program, and plans for procedures to facilitate program implementation. The following themes captured from this school’s journey through this phase are presented below.

Theme 1: Another mandate in which we have no voice. An overall consensus emerged among teachers and administrators regarding the process through which RtI was selected for implementation at this school. Administrators expressed that the school district, to which this school belongs, was primarily
responsible for exploring and adopting RtI. Additionally, teachers and administrators appeared to share an understanding that the school district was responding to a higher systemic entity mandating the exploration and adoption of RtI. The following administrator comment illustrates these sentiments:

Well I think that NSSED is sort of on the cutting edge, so the administrators over in the administration building, Sue Smith and Joe Thomas and Jane Johnson and all of them, they pretty much saw it coming down the pipe so I think they started pretty much before.

Administrators reported being notified that RtI would be implemented at this school from district level administrators:

We were informed that it was an initiative from NSSED that we would all be required to follow and NSSED had some people in place that came around and gave us an overview of what that would look like and in so many years, we’d have to be here or here or have a program in place or process in place.

While administrators did not express positive or negative responses to the adoption of RtI at this school, teachers appeared to have stronger, more well-defined reactions.

Overall, teachers expressed an observably negative sentiment that the selection and adoption of RtI was a process in which they had no role and no voice, as expressed by the following teachers:

And it just seemed more like RtI was sprung on us. Like we have to do this now because it’s the law.

...That this is what we have to do because this is what the government says we have to do.

This sentiment held by teachers, that RtI was simply “another mandate,” was observable and recognized by some administrators, as illustrated in the following
reflection by an administrator on initial teacher response to being informed of RtI implementation:

*How it was received...here’s another, here’s another initiative we have to go through, it’s more work. I think people have so much to do any way that it seems like another hoop to jump through.*

Following the directive to implement RtI, teachers and administrators moved to examining procedures for implementation. During this creation of a plan of action for RtI implementation, teachers’ reactions appeared to evolve into more accepting and positive sentiments, as described in the next theme of this stage.

**Theme 2: We are already doing this.** This school appeared to have autonomy from the district in the creation of a plan of action for implementing RtI at this school, as described by the following administrator:

*...Where we sat down and really talked about the whole process, how do we...just even starting, where do we want to start, what do we want to look at, what is it all about and that was a big part of running those committees and presenting information that I had, back from either NSSED or some of the coaching conferences or whatever that I went to.*

In discussing the procedures for the implementation of RtI and learning more about core RtI concepts, teachers expressed the sentiment that RtI appeared to them to not be vastly different from their current teacher practices.

*And when I heard it it’s like well okay we’re already kinda doing that. We’ve been doing that, we always do that, you know.*

*I think part of it made sense to people because that’s what we do anyway and I think people received it as well that’s what we’re doing.*

*Some of it seems like stuff we were already doing when we were differentiating the curriculum for other kids or doing one on one or the direct instruction for whatever the kids need.*

*But I think here, we kinda do a lot of those things already. So, it really kind of framed what we were already doing. So we kind of had an idea, oh okay so we’re*
doing some things right. And they will always problem-solve if there’s something that needs to be problem-solved during the week, during the meetings because that’s the way they’ve always done things anyway. It’s not anything new. A lot of the process or the thinking with RtI isn’t something new for us at all.

As illustrated in some of teachers’ responses quoted above, teachers’ understanding of RtI as strongly resembling existing practices appeared to positively impact their reactions, expanding initial sentiments of being mandated to finding some comfort and validation in the perceived similarities.

Theme 3: Not everyone is involved in planning. Through the qualitative data, differences in program involvement in the plan for implementing RtI emerged, creating a sense of unequal footing between the programs. Specifically, administrators and teachers reported significant inclusion of the middle school program in the pre-implementation planning and problem-solving process for determining how RtI would be adopted in this school.

We started out with a pilot group, which was the middle school, and we started with the middle school and they worked really hard to really implement it with John Adam and myself and Julie Julian and Lucy Smith and Sue Gonzalez and Steven.

...What I do know is that we developed program-based RTI teams in the middle school for it to be able to roll this out in...and troubleshoot before and have those teams be the ones to work with their colleagues to implement this at more of a program-based level. Because getting everybody up to speed didn’t seem the best way to do it...we began to develop RTI teams and then Sue would help guide those teams to make sure we were beginning to introduce this with some level of fidelity.

Teachers and administrators expressed that the middle school’s early and more intensive involvement in the adoption of RtI at this school positively impacted their receptiveness, such that they were more receptive than other programs:
The middle school was extremely receptive to it and because I think we did it in a slow enough process that they really bought into it and this was going to be helpful.

The seemingly unequal initial involvement of programs in the overall RtI implementation process appeared to have residual effects expressed in reflections on the later stages of implementation.

**Program Installation Stage**

The overarching goal of the program installation stage is to develop all components needed for initial implementation, which includes a definitive understanding of the program, and the development of the program framework, practices, core components and outcome expectancies. An evaluation of this school’s progress through this stage is presented below.

**Theme 1: Poor theoretical and practical understanding of RtI.** A definitive understanding of RtI is a significant first step in entering this stage. Many teachers and administrators expressed that some teachers’ knowledge of RtI, theoretically and in practice, may be lacking.

*How well versed are we, I would say...this is a learning curve and we are on the early part of the learning curve so I think people are starting to understand it theoretically better. I think we are not putting into practice yet in the way that it needs to be put into practice. So that would be my answer how well-versed are we. I would say not very well-versed. And that’s how I would expect us to be given how what a new, how new this initiative is.*

*And I really had no...and still doing that didn’t really understand what it was. And really thought it was more for kids who were LD. I didn’t really understand that this was for everybody. This was for kids in general ed. This was for everybody who needed remediation. And so, I think that a lot of people still feel that way. They still think that this is a special ed issue. And so I started to learn then....Misunderstanding about what RtI is. I think that not really knowing that RtI is not an LD issue. That it’s an overall remediation issue. It’s a kid remediation issue.*
In one response, it is highlighted that teachers are where they should be given the newness of RtI implementation. However, the other response carries the sentiment that teachers should be more knowledgeable and are perhaps stuck in a naive phase of understanding of RtI. One administrator expressed the danger in teachers not progressing beyond a naïve and/or superficial understanding of RtI.

At this point, I don’t think they, I think that there’s a piece of RTI that is intuitive and dangerous in that everybody says, “Oh.” There’s something comforting about saying “Well we do RTI all the time anyways.” There’s something comfortable about that because that’s any problem-solving process is an RTI process in its own distinct way. So I think people say, “This is familiar.” I think that can be dangerous as well. The “this is familiar piece” can quickly become “this is a problem” because we are just redoing what we’ve been doing all along and calling it RTI.

It is evident that without a clear theoretical and practical understanding of RtI, it could be relatively easy for those implementing RtI to become comfortable with RtI seeming familiar. However, as expressed by some teachers and administrators, such misunderstanding and settling could negatively impact the fidelity of RtI implementation.

Theme 2: Flexibility within vaguely defined framework and practices.

Teachers and administrators acknowledged an overall framework that was developed collaboratively. Teachers and administrators reported that while there is an overall framework, each program is permitted flexibility to adapt to their students’ needs. Each program appears to function independently of one another, adapting the established framework in unique ways. This flexibility is two-fold, however. In some instances teachers expressed appreciation of this flexibility, as illustrated in the following teacher responses:
Well you can tailor things to the group that you have. If you have the group of teachers and therapist that want to do this and can all agree on this then it’s great.

I think in our program, for who we are, having that flexibility and freedom is really important. Just having that flexibility to different programs, different ideas, is helpful.

However, in other instances teachers expressed a preference for more concrete direction, particularly for how and when to move a student from one tier to another. Additionally, with each program given such flexibility, there appears to be potential for some programs to establish more comprehensive and well-functioning frameworks than others. Differences in the functionality of frameworks were particularly highlighted between middle school programs and other programs as the following middle school teacher reflected:

We are a team that talks a lot. And that’s kind of by our design a little bit more because we feel it’s important to be really cohesive and really have a solid framework of how we are going to do it. So, I think that we do it, probably, as a really good model for other programs. But to my understanding the other programs do it similarly but maybe not as intensely. I don’t know. They, I think, once they have made a decision in their program I think they all kind of go to their own corners and work their own thing in their own way; whereas we are a bit more collaborative about it. I think that’s a successful model for us, anyway.

Here the residual effects of the middle school’s early involvement in pre-planning appear with the middle school continuing to have more structure and functionality than the other programs. Overall, however, the development of program frameworks, whether the school’s overarching framework or program level adapted frameworks, was vague and nondescript.

Development of program practices appeared to be similar to the development of program framework in its vagueness. The process of developing program practices differed from the process of developing the program
framework in who was the identified responsible party. In developing program practices, administrators appeared to have the primary responsibility; however, details regarding how practices were developed were not discussed by teachers or administrators. In fact some teachers commented that there has not been an intentional creation of defined practices and that there is a great need for defined practices as well as a defined framework.

*But then, I feel like, we should have an RtI mission statement that we don’t have. It’s a little bit embarrassing. You know I go to...I go to the committee meetings and people are saying here’s what we’re going, here’s our RtI curriculum, here’s our intervention curriculum. We don’t have an intervention curriculum. We don’t have anything that’s separate from our core that we are using for RtI. We need to at least have what we’ve said, here’s what we’re doing in our RtI time, here’s our RtI intervention curriculum that’s separate from our core curriculum,. here’s when we are going to implement it, here’s how...kind of our plan...our model.*

Teachers and administrators did express a desire for the development of practices to address behavioral functioning in addition to academic functioning, as expressed by the following administrator:

*Expanding it I really think we need to get the behavior component in there somehow. We probably have a lot of data already but we haven’t matched it up or tried to see, how is that, if there’s any way we can figure out how that’s affecting their academics, what really if we change this, what happens with reading. If we change...you know, behavior-wise.*

**Theme 3: Outcome expectancies are unclear and difficult to define.**

Similar to the vagueness in details regarding the development of program framework and program practices, outcome expectancies for RtI, i.e. what ultimately RtI was intended to look like once fully implemented, were unclear. One administrator provided the only potential indication for successful RtI implementation:
If the program itself is resulting in 80% of the kids being able to manage school effectively.

However, a comprehensive outline of what would indicate successful RtI implementation was not reported to exist, as illustrated in the following responses:

An ultimate vision. No I don’t. I don’t think across the board that there is one yet.

And even just people understanding exactly where we’re going because we don’t have a clear vision and I think when you don’t, it’s hard to get people to follow or come aboard and really be part of the process if it looks like it’s just something else we’re doing.

One administrator commented on the challenges of having to create unique school level outcome expectancies:

The way that I’ve always been told is that every school does this stuff their own way, which is...at first, maddeningly vague and then later on, becomes empowering and then later on becomes maddeningly vague.

The preceding administrator comment also highlights the challenges of developing a unique school vision when the expectations from higher systems that have mandated RtI implementation, i.e. the school district, are too flexible and vague.

Theme 4: Traditional RtI components need adapting and reconsideration at a therapeutic day school. Vagueness was not the challenge with developing core components of RtI programming; rather, the challenge lay in adhering to the clearly indicated specifications of two of the three major RtI components: a tiered system and research-based curricula and interventions. Teachers and administrators expressed significant challenges with the development of research-based curricula and interventions for a therapeutic school environment. All
teachers and administrators reported significant difficulty establishing what constitutes research-based curricula and interventions, as illustrated in the proceeding administrator reflections:

*Well that’s the dilemma. There’s a lot of flexibility—and again, this is double-edged sword—how you see evidence-based. I can say, that George Rhodes English class, students made progress. That would be evidence-based curriculum. I could use that as an evidence-based curriculum and say that we need to replicate this. Or is evidence-based curriculum something that is standardized and made it through the editorial review process of typical research and publication? So I think that’s another place where RTI’s vagueness can be hard. It can sometimes be self-serving. I think that is the essence, of I think, our biggest challenge with RTI is can we actually find and then implement appropriate research-based intervention. And when you talk to people, it’s hard to find that. And so we use Second Step for our social skills for our middle school, we use Read 180 for our tier 3 readers in the high school. There’s another program...for reading for our middle school. We’ve got all those things so I think we can use those but then the question is do they really work for our population*

Moreover, as alluded to in the final sentence of the above administrator’s reflections, teachers and administrators reported a struggle to find appropriate research-based instructional material for therapeutic school populations in which many students were two or more grade levels behind in core academic subjects.

Teachers reflected that it is challenging to find age-appropriate, research-based instructional material for very low performing students, specifically those placed in tier 3. Moreover, students who are functioning at a lower emotional level, teachers report tend to be more susceptible to acting out or shutting down behaviors when struggling academically.

*Um, in terms of math we have, um, I know we have like the algebra books, pre-algebra, algebra, you know, that kind of thing. You know when it gets really low, we haven’t had much curriculum, you know. So the tier 3 interventions, the math interventions we haven’t had a lot of the research based curriculums yet, that we have access to. And, we aren’t necessarily the most trained on them. So then it makes it really difficult.*
No no [not enough resources]. There are places that say that they do it—Sprit publishing, there’s a lot of places, the high low stuff—but it’s kind of, I don’t know, it patronizes the kids so I don’t like it.

So I think that more programs that are like functional but not insulting to other kids are really helpful that include the life skills because some materials—I would bring in math or whatever and I’d have to retype and adapt because there’s little pictures of teddy bears on them and then that’s insulting. And everyone is going to shut down, as I probably would to if I were put in that position. So I think just more materials for older kids that are lower functioning would be really helpful.

...it’s impossible to find high school math for kids who are doing second and third grade level math, but at a high school age appropriate look. But don’t have the skills...So when I ask for them, the research based interventions I get things like...what was it called...everyday math. I get things that are very young, very childish. So it’s very hard.

So I think that our struggle has always been finding that research based curriculum for ED/BD kids that’s going to be stimulating and useful

Equally challenging for teachers was balancing foci between core academic skills and core functional or vocational skills, and, furthermore, accessing research-based curricula that addressed both:

And we also need to, like in math, we needed to temper it with, um, with counting and money. We needed to temper it with telling time. So, you know, because they couldn’t do those skill either, it’s a lot of life skills.

Teachers and administrators further noted the difficulty of implementing interventions with fidelity. Teachers specifically explained that “buy in” from students in this community is particularly important, and, at times, to address and adapt to behavioral or emotional problems teachers may need flexibility in intervention implementation. The following teacher explains this concern:

And I think the hard thing for this group, um, I know, like, being able to implement the interventions the way the interventions are written can get really tricky with children with behaviors and stuff like that. And so then you are looking for the consistency and that kind of thing and it’s kind of like you want to go with the way the program is written and doing it exactly the way the program
is written. But the kids don’t always buy in and so then it’s like, okay, we’ve got to do it this way...we’ve got science rewards and it’s got to go this way, we’ve got RtI but what if they’re in la la land.

As will be discussed in the implementation stage, teachers report student responsiveness to interventions relies heavily on their social-emotional functioning. Teachers expressed concern regarding the struggle between doing what is necessary to meet students’ needs versus maintaining intervention fidelity.

Teachers and administrators also expressed significant challenges with adopting a three tiered structure, in which the 80% of student population comprised the tier 1 group and 15% and 5% comprised the tier 2 and tier 1, respectively, groups. The following administrator illustrates this point:

*And then, the goal is to get them out and like I know we want to do like the 85% of the population can be, you know, getting most the instruction. And then there’s, you know, the 10% who gets tier 2 and then there’s the 5%. And you want to be able to all kind of flow and go back and forth. Um, but, sometimes it doesn’t feel like maybe they kids who need a tier 3 intervention, the numbers don’t necessarily equal 5%, you know, so then it’s like well they really need a double period and it’s 15 kids or 20 kids out of the middle school. So, then you’re looking at two thirds of the middle school. So I don’t feel like the numbers necessarily work, in this population.*

Teachers commented that the difficulty in tiering students according to standard RtI tier structure stems from being a school that solely educates the most challenging students with the most severe emotional and behavioral problems. Thus, many teachers expressed uncertainty in how to “tier” students who are already “tier 3” by normative standards.

A related concern that combines the difficulty in tiering students as well as establishing appropriate curricula is establishing a core curriculum that reaches 80% of students. One teacher shared:
I think the school is grappling to understand and really be able to apply RTI. I think there’s a learning curve with that and I think it’s a natural learning curve. I think that one of the main things that we are struggling with at this point is the fact that I believe that where RTI programs should start is with a strong core curriculum and I think that we, as a district we struggle with this and as [a school] we struggle with this, which is making sure our core curriculum is hitting 80% of our students. I think without that that we are...that everything gets distorted, if that makes sense. And so my worry is that our core curriculum isn’t strong enough or consistent enough to provide the base to support the RTI triangle.

The combination of difficulty finding and implementing research based interventions with fidelity and of creating a tiered system that aligns to standard RtI practices, set the stage for significant difficulties in the implementation stage of RtI.

Theme 5: Need for more teacher and team development. Core RtI implementation components include training of teachers, administrator guidance and support, and the coordination of implementation. In all of these areas, there appeared to be differences in teacher versus administrator perspectives. Administrators described opportunities for teacher training in RtI implementation and, more specifically, curricula and intervention implementation.

So to have them have some structure and some training, it makes them feel more comfortable and that really helps.

But we do make sure that they get the training.

Well, we send all our teachers to whatever program it is so that they do know what they’re doing.

Most teachers, however, expressed a desire for more training and specified training needs. Teachers indicated that while there are opportunities for few and select teachers to attend regional or national trainings on specific curricula or
subjects related to RtI, there was an absence of ongoing, school level training for teachers.

*I think especially implementing programs, I mean we have this new read 180 program that’s a terrific reading program but there hasn’t been any real training. One teacher I think that was part of a training program went to a training program for it and then if anybody else wants to implement, we don’t have training.*

*We have had a few, you know, institute days on it. We had, you know, what it was about. It’s never enough, you know, I think when things like this are implemented.*

*In terms of math or writing, I don’t feel like we’re there really at all. Just because I don’t feel like we know…okay, we know this kid struggles in math, we know this is where the kids should be, what skills they should be looking at…I don’t see, like, the curriculum necessarily that would match that, or the training, or where to go.*

*We don’t have much training at all. There hasn’t been much training.*

*So, we haven’t really done a good job about training, about bringing people here and doing good training.*

Some comments were made on the obstacles this school faces in ensuring ongoing training, including lack of time and resources. Some teachers commented on the challenge of balancing teaching responsibilities with training, making a suggestion that teachers be allowed some days focused just on training without teaching responsibilities. Others commented on the lack of availability of some trainings throughout the year as well as a lack of formalized trainings for programs in specific areas.

*We don’t have enough in services built in that say you are not going, you are not in your classroom today. You are going to focus on RtI, this is your responsibility today.*
It needs to be during….they need to say here’s a half day, here’s what we are doing for the half day and our focus is RtI. And we need to start with teaching. Here’s our process of RtI.

The consistency from year to year is what’s difficult. So last year we sent Lucy Smith to Read 180. In the middle of the year we picked up Read 180 for an 11-12 class with Sam Jones, she couldn’t get the training because the training wasn’t even available until now and so, you know, making sure they get the training beforehand has been difficult.

I know we had a math committee last year but they never had...like I felt after the reading committee, they came back and said, okay these are some curriculums we can get. And I don’t know if it’s because there aren’t tons of math curriculums out there geared towards our kids or not. So I’m not quite sure and I’m not quite sure if they know what curriculums. I just know that we don’t have or I don’t feel like we have or would know where to go to get some of this.

In addition to expressing a lack of training for teachers, teachers further identified areas in which they would like more training.

But even the person who is implementing it could use more training. More training in that. And the specific things, if we are gonna say and we are gonna use this scientifically proven program, then we need to know it inside and out. Otherwise it’s not gonna work.

There should be more directed towards truly special ed-type. I mean, we’re really special ed, we run the gamut. Because we do RTIs on our behaviors and not a lot of places do that—they don’t have to. So it would be nice someone that specialized more in that, but they’d have to travel the whole state of Illinois, wouldn’t they? It couldn’t just be from...Lake County Regional Office of Education so maybe somebody at the state level could maybe travel to all the therapeutic day schools and maybe help them out...that would be great. Because it’s such a large percentage of the kids being educated...maybe they could...

Besides training in academic areas, many teachers expressed a desire for training in implementing curricula and RtI strategies to be tailored to their specific student body population. As one teacher noted above, this specific training would also be beneficial if there was an additional focus on addressing behavioral concerns within an RtI framework.
In addition to more teacher development through training, teachers and administrators also expressed a need for more team development through enhancing team activities that facilitate implementation. Most teachers commented on their satisfaction with and perceived efficiency of RtI team meetings, both quarterly formal meetings to place students and ongoing informal meetings to discuss student progress and strategies.

I think that maybe having those meetings and that responsibility is good. And being able to have all the data on time and be there so you can kind of disseminate that information to everybody and be transparent about it and have a discussion about did we do this right, are we on the right track...those kinds of things, um, is only really the next responsibility,. Because RtI has just really made us more vocal about what we are doing; whereas, it used to be in my classroom I’m doing it this way.

There are informal. I think the informal meetings are sometimes more helpful. When the teachers are just talking about the data or saying hey this is what happened when I tested this student, this is what happened in class today, these are the changes I’m seeing. We very informally will kind of touch base and I think that’s very helpful. It helps us triangulate the data more because when we go to the RtI meeting those are the times I don’t think we triangulate the data.

I think they’re really great. When we first started up, we were monthly with that original group I had said, then the following year, I think they met monthly for the 9-10 program, the 11-12 and the middle school. They meet to problem-solve and tier kids. We have a day-to-day which we let teachers out of the classroom for 2-3 hours so that we can tier kids and check their progress monitoring at least twice a year. We do in the summer before we start fall. I think we have a pretty good process for that.

I think that this last year, this year I think we’ve done a really good job with it. Because I’ve been in most of those meetings and I think that they have taken control, the groups have taken control of it, it’s not me, it’s not Sandra, it’s not someone really doing it, they’re doing it and taking control of it and looking at the data and tiering kids and it’s been really good conversations and really getting to the nitty gritty of what we need to do with the students and I think it’s been really good. It’s gotten a lot better this year.

A few teachers and administrators shared the perspective that the middle school seems to function particularly well in RtI team meetings. This perspective
furthers the perception that the middle school program was slightly ahead of other programs in the RtI implementation process.

At least in the middle school we meet pretty regularly to do that. Um, you know people have stepped up and said, you know, we will do the testing, the benchmarking types of things. We discussed that was really helpful, the felt good.

While many expressed satisfaction and efficiency with RtI team meetings, a handful of teachers expressed dissatisfaction. Those that expressed dissatisfaction focused on teachers’ knowledge about the correct and most comprehensive use of data for tiering, placing and monitoring students – core practices of RtI.

They haven’t ventured out, which I really wish they would. I’ve done it when I went to the reading 180, like they have webinars and I’ve done the webinars. We really haven’t done a ton in terms of our group. I mean this year, last year we started to talk, in our group, about the best way to level our kids and really have some great meaty discussions but still within our grouping, there aren’t people who are quite getting it. So, they’ll bring their MAP scores and from their MAP scores are like okay let’s talk about our kids and level them. Well, that’s not... one I hate, I really hate using MAP scores to level our kids. Half my kids just blow through MAP scores and don’t pay attention. So bringing one score, you’re not going to get an accurate picture of the kid. And, so we’re finally getting to we need to bring four, five piece of data all sit down together and then put our kids in the proper grouping.

And just last year we’re starting to come together with more than just MAP scores, more than just, you know. And if a MAP score doesn’t quite look like what we know about the kid, well let’s look at their MAZE, let’s look at their CBM, let’s look at two or three more data points and then let’s start to talk about what makes sense. And a kid may be a really, they may love reading, but that doesn’t mean that they understand everything that they read. So, you know, there are just so many things that I think we are not quite good at. Even in placing kids in the proper group to get... and you know there are just so many things I feel about this.

Others that noted dissatisfaction with RtI team meetings commented on the amount of time these meetings take to simply present basic data points without
utilizing teacher expertise and observations. One teacher expressed this frustration in the following quote:

...because as far as I’m concerned, when it comes to data points, anybody can do that. They can put a list together with data points. We should all be able to do that, we all have degrees in some form of Sp-Ed so we all have that one basic course where we can put the data together. I think somebody should do that. We sat around—the six of us—certified staff because we’re 6 on a team here, most of them are 8 or more—and we all sat around where they should go. And to me, that was a waste of my time so I got irritated.

In both criticisms described above, there is an overarching theme of wanting more team development so that teachers are knowledgeable and structures are in place that make meetings time and content efficient.

Initial Implementation Stage

The initial implementation stage is the time when all developed plans and practices are put into place and tested for the first time. This stage can be challenging as some plans and practices will work well and others will not. In addition to implementing the program with as much fidelity as possible, this stage is also about learning what works and what does not. Themes from responses about this stage focused on the following areas: structural and cultural changes, facilitators and barriers, staff and student reactions, and implementation issues unique to a therapeutic day school.

Theme 1: Positive structural changes but incompatible cultural impact.

Therapist and administrators reported structural changes that had a strong and positive impact on students and teachers. One of the most significant structural changes identified by teachers and administrators was the use of more “hard” data in monitoring and placing students. Teachers and administrators expressed that
while students’ academic progress and learning had always been monitored, progress and learning had been monitored with less formal and more anecdotal information and observations. Since RtI implementation, there is reported to be more use of formalized, standardized data, resulting in more informed educational decision making for students.

*I think we are probably looking more closely at, um, ability grouping in general. And, using more and more than anecdotal stuff on what classes students should be in. Trying to get some hard data on things.*

*The data collection I think it something with RtI we should be doing more of. And you know in that regard it’s an extra added thing that we weren’t doing much before. Not that we weren’t monitoring student progress and all that stuff. But when you’re doing CBMs and when you’re doing MAP testing, we were really going to focus on progress. There would be a push to do more of that type of stuff.*

Teachers and administrators seemed to report satisfaction with the use of more standardized data in making educational placements and decisions for students. The use of hard data also allows for better assurance that students are tiered based on academic ability rather than behavioral or performance domains, as the following teacher reflected:

*I think that’s what special to this placement that we have to be careful about and looking at ability level and not always performance because of behaviors and things like that. A student might have the ability to be in the highest level English class and if it’s really just behaviors that are causing them to not do well in that class, they shouldn’t be moved out of that class, as opposed to someone who is really struggling academically because the tier 1 class is too difficult. So I think that that’s where our placement is a little different than a typical school.*

Accurate data collected from students was reported to be beneficial to the educational practices of teachers and to student academic progress. However, the collection of standardized data was reported to be a challenging endeavor.
Aspects of a therapeutic day school’s culture, specifically the nature of the student population, make the positive structural change of collecting and using standardized data challenging. All teachers and administrators commented on the difficulties of collecting accurate data from students who are having emotional and/or behavioral difficulty.

_Because kids that score high and perform low or kids that score low and perform high so we try to get them...we don’t want to sell anybody short. We’re careful about that because that can happen in this kind of a setting._

_But sometimes that’s tough too with our students. So many of them just refuse. Refusal is tough. You can’t get good data if they’re just going to refuse to do anything._

Students’ emotional and behavioral functioning were noted to further impact the consistency of accurate data. Teachers and administrators described a pattern in performance for this student population in which students perform better in earlier testing than in mid- and end of the year testing. In this population, it was expressed that students’ tend to present with less effort towards the end of the academic year and/or that students’ level of effort can vary from even week to week depending on emotional stability.

*I don’t know if it’s in our culture, I’m not sure what the reason is. But I’ve seen it time and again where the kids best effort was on the first MAP test in the fall and you wanna try and see progress from fall to spring, well forget it because you can’t rely on the MAP test because they just aren’t trying in the spring._

*I think that being said, I think there’s so much more of the behavioral emotional component, it’s hard to tell sometimes where the kids are testing. For some kids, they aren’t consistent and so then trying to find the information that’s going to be the most applicable is important. We were looking at some of the scores the other day and we were like, they had 22 and 33 in the manner of week._

To consider the tendency for students’ academic performance to fluctuate with emotional and behavioral functioning, teachers and administrators reported that
when interpreting results of standardized assessments they must evaluate reliability.

That’s when we report on things—we’ll say, “Well she was having a real bad time then, she wasn’t doing very well.” I don’t find us saying, “You know that’s a high scorer who really don’t do that well.” I don’t find us saying that…I always finding saying “She can read a whole lot better than she does…she was just having a really bad day.”

Even the data that we gather, it’s tough to know, especially MAP testing and certain things, if that’s really giving you a clear picture of what a student does know, doesn’t know. Is it behavior, is it really cognitive abilities and trying to tease that out I think is a big obstacle. You know, what really is the reason for that? Did they just don’t to do it, hate doing homework, don’t want to do this, don’t want to do that or is it really a cognitive function that we just…that they really have a disability there. So I think that’s part of it is trying to tease out the information with that.

In sum, while teachers and administrators commented on the significant benefits of using more standardized data in educational decision making for students, access to consistently accurate and reliable standardized data from students is not always available due to student factors.

Another significant structural change that has had challenging cultural implications is classroom grouping by ability level, or student tier placement. Teachers and students expressed structural benefits to placing students in classrooms based on their academic abilities. One of these benefits was that it created a supportive, comfortable, and less self conscious environment for students, which improved learning and student effort.

And I think now how we have shift, is we kind of group kids in a little bit of a different way, which I think helps create like a support system for some kids. Some kids that doesn’t work for, but other kids it really does – like having a support system.

I think the other thing is having them grouped with kids that are in similar straits makes them feel less embarrassed. I mean, so that whether they’re trying to
sound out a word or they’re stumbling on something and they know everyone else is kind of in the same boat with them, I think that’s really helpful. And, they work well with that.

Another benefit expressed by students was having more access to individualized support from teachers. Students reported that having classrooms “at their level” allowed them to get the relevant instruction they felt they needed based on their academic needs. The following student described how this looked in the classroom:

_They’re really good at looking at everyone to see where at and will walk over and help the person that needs it. And because we are all at the same level and need help with the same things, it makes it easier or something like that._

Despite the potentially supportive environment, grouping students by ability level into classroom also posed some environmental challenges. Teachers and administrators expressed concern over the disruptive potential of grouping students who may have the most significant behavioral concerns. Teachers expressed that those students in the highest tiers tend to demonstrate the most challenging behaviors; thus, grouping them together may be problematic.

_Those are students that tend to have a lot of behavioral issues as well. So, grouping them all together, um, you know, sometimes I think it counterproductive._

_Because when we look at RtI it’s pretty much the academic abilities. We don’t look so much at, you know, this student is just not going to interact with this student well. We do that with class placement in terms of homeroom placement. But we don’t do that as much with regard to the ability grouping._

Many teachers commented on the difficulty of placing students into classroom groupings without considering how students will interact with one another nor the diversity in students’ emotional and behavioral functioning. The practice of
considering the classroom culture in classroom groupings is challenging to balance with placing students in appropriate tiers.

And, finally, in addition to potentially creating environmentally imbalanced classrooms, students placed in tier three classrooms are also faced with another challenge: often, students grouped into tier three classrooms based on academic ability must participate in more “RtI” or instructional classes as their instructional needs are greater than students placed in tier two or tier one.

Teachers, administrators and students commented on the potential problem of students losing their participation in “fun” or “creative” classes.

*My biggest struggle that I have, number one, is finding the time in the day to make sure they do it. Because they wanna pull the kids, um, not from the core academics but then you pull them from the stuff that they actually enjoy or that they might be good at. So then that’s hard, you know, because we are such a strength based program. And, it’s like you’re torn, do we pull them out of art so they get the RtI? Because they really need the RtI but they need to feel good and successful about something too. And, so struggling with that.*

*...We absolutely have a second reading class for kids that are, you know, two or more years behind. We have that. So, you know, instead of taking that traditional science class, you know. And we obviously couldn’t take it out of math. We could only take it out of science or social studies. And some of the kids really like that. And do well in those...so.*

Thus, while students placed in tier three are getting more intensive academic instruction in areas in which there is an achievement gap, students may also miss courses in which they are more likely to experience success and spend more time in courses covering the very content area in which they struggle the most.

Teachers expressed that this challenge may inadvertently lead to students, particularly those in tier three, to have more experiences with hardship and
failure, which is in contradiction to the strength-based culture this school aims to nurture.

**Theme 2: RtI does improve teacher accountability.** Some teachers and administrators reported on increased teacher accountability as a result of RtI implementation. Teachers’ and administrators’ discussion of teacher accountability included teachers making more deliberate efforts to use evidence-based instructional tools, to monitor student progress using several pieces of formal data, and to adapt, adjust and/or tailor instruction to meet the needs of students in a more scientific and structured manner.

*I think it just looks different. That’s what I think. I mean, these are things we’ve done and have been cognizant of, it’s just that there’s a structure in place with the tiers and the amount of time that we are giving to them. And it’s a way for us to have like a checks and balance system. Not necessarily accountability, but it gives us checks and balance like okay, did you do this? okay, let’s go on to the next step. It organizes our thought process, so things we used to do so I don’t think that part is different.*

*I think it helps them be more accountable and see what they’re doing. So maybe it’s changed a bit. I think that you’re always going to get the teacher that has the good work ethic and integrity that’s going to do their best no matter what. But I think some of those teachers that might sort of have taken the easier route, it holds them more accountable and I think that’s great. I think that’s marvelous.*

The requirement of more documentation as a result of RtI implementation largely impacts improved teacher accountability. Teachers are held responsible for documenting not only student progress in structured way but also teacher interventions and decisions in a clear and structured way. Such transparency in RtI was reported to positively impact teacher accountability.

**Theme 3: Difficult to balance values of community and RtI structure.**

Another major theme evident in teacher and administrator responses is the
difficulty in balancing an RtI structure and upholding the existing sense of community. Most teachers and administrators expressed concern about the potential loss of the therapeutic community within the classrooms due to RtI structures and foci. One RtI structure impacting the sustainability of a therapeutic classroom community is the increase in student transitions between classrooms.

As part of RtI, students transition for many core academic subjects depending on their tier placement, and teachers expressed concern that students are not in one classroom long enough for community building.

*And it’s hard to do that when they’re transitioning all over the place. So, I mean, in some respects it’s a balancing act between the RtI and getting the kids in instructional groupings that are appropriate for their skill level and trying to create a therapeutic community within the classroom.*

Similarly, prior to full RtI implementation, it appeared that students spent a significant amount of time in homeroom classes that comprised the same grouping of students. Since RtI creates multiple, different groupings of students for mathematics and reading, students are reported to spend less time in homeroom where most of the therapeutic community building occurred.

*Um, it means some of the...we have had less time to be as a homeroom class, which sometimes takes away some of the therapeutic component of the day, um, that we’ve been able to have. We used to have a good amount of the day be homeroom classes and without it there’s certain things you can’t do. You don’t have as much flexibility to be able to do some of that. So, I think that’s where some of that therapeutic piece kind of gets lost.*

*I think it goes in a couple different things. We’ve talked about the therapeutic component and how it’s kind of taken away a little bit because we’ve had to do so much more...we have done more pull outs and so the kids are in to different classes and they are no longer a homeroom base necessarily. We did more transitions, which I think is...can be more challenging, um, for that therapeutic component.*
Students also reflected on how a therapeutic community is beneficial for them, as illustrated in the following student quote:

*It’s so nice when have good teachers because here they are focused on helping kids. At other schools the focus is just academics. But, here it’s therapeutic. We need the therapy stuff. I would still be a defiant little brat, but they helped me do better.*

The desires to maintain a therapeutic community within the school and to uphold structures necessary for successful RtI implementation is a difficult balance for this school during the initial implementation phase.

**Theme 4: Major facilitators and barriers encountered during implementation**

*Barrier – Student’s behavioral/emotional needs.* Many teachers and administrators commented on the compounding challenges that emotional and behavioral problems create for students at this therapeutic day school. Teachers and administrators reflected that students’ behavioral and emotional difficulties result in significant behavioral and emotional needs that are at times difficult to address along with addressing academic goals. The following teachers’ reflections illustrate this theme:

*Not that the academic goals aren’t important, but we do things differently, we’re a therapeutic school. Um, so that I think is kinda gets in the way sometimes of RtI.*

*I think it’s a good program. I think it is difficult in a therapeutic school. Um, because I think there’s so much with the behavioral component that gets in the way or the emotional component that can interfere with it.*

Another aspect of students’ behavioral and emotional needs is the importance of building relationships with students that move beyond scores and grades. Many teachers commented on the importance of such relationships as a first step in
being able to impact students academically. The following students reflected on
the importance of having a relationship with teachers:

When a teacher has a good relationship with you, it’s always nice to have a friend
by your side. It makes learning easier when you have a good relationship.

They’re always there for me. And that’s important.

My education…it’s…I’m doing so good because of the teachers. Dr. Johnson,
he’s been like a second dad. It has an impact on me because he’s supported me
so much.

The following teacher’s reflections illustrate the importance of building a
relationship and rapport with students before attempting to address academic tasks
and goals.

I think initially we kind of went by the book, which would be a more regular ed
book. I mean if you look at just the pyramid, how it is. I mean I don’t think,
looking at how our base population, I mean we are already...what tier are we
already? So, um, I think initially we were a little more rigid about it and we all
sort of expressed our concerns about how we operate, you know. This is not how
we operate on any level. We always need to look at the big picture. We always
need to use those, you know, unscripted questions. I mean that’s how we run an
IEP. I mean you need to get a comfort level. You need to establish a relationship
with the child, with the parent, with all of these components and that’s the human
side of it. So, to just take this scientific side is, um, doesn’t work. So, I think we
have....and I think for the most part our administration here is, um, especially
Steven, especially Dr. Hamlin, has been...his training of course is as a
psychologist...so I think that he gets that and is always sort of been less academic
driven and looking at the whole picture with the whole kid. And, um, I mean if
you have kids that have emotional...they don’t know where they are going to sleep
that night...they don’t know if they’re father is going to come home and hit
them...you know, what are you looking at with the reading? I mean not that we
still can’t make progress, whatever, but that you do need to look at those other
factors. And I think, he totally gets that I think. So we have, um, lightened up
with some of it. But we used to be very much, um, for awhile trying to crunch all
those numbers. And that isn’t who we are.

Also present in this teacher’s reflections is a notion reflected by most teachers and
administrators – a therapeutic day school must focus on more than the “numbers.”

A therapeutic day school must consider context and students’ experiences in and
outside of the classroom. Teachers and administrators recognized in their reflections that students’ contextual environment outside of the classroom was just as important to address as their experiences within the classroom. In sum, students’ behavioral and emotional needs were viewed as equally important as academic needs. Furthermore, at times, unaddressed behavioral and emotional needs can make addressing academic needs challenging.

**Barrier – Lack of time.** Another significant barrier expressed by teachers and administrators was a lack of time to fully implement RtI elements. Many teachers and administrators noted the various therapeutic activities for which they are responsible, such as therapy with students, which compete for time with RtI.

The following teacher quote reflects on this barrier:

*So one of the problems is, how much time is there in a day? I mean we also have group twice a week. They have group, they have individual therapy. And so much of what we do, we try to grasp teachable moments. So, despite some of their academic gaps and learning disabilities, we deal with all this emotional stuff. We are constantly doing, you know, we do peer reviews with kids that are in conflict with each other. Um, you know, we’re doing other things all the time. So we do the RtI right now out of science*

*One of the obstacles is time. There’s only just so much time in the day*

*And I know that everyone is always searching for more time in the day, but just time to do things like that. Even time for teachers and therapists to meet together and do a progress review*

*And I think obstacle is just time. It’s so tough, and like everybody in any school, it’s so tough to find those meeting times and get everybody together*

When given insufficient time, teachers and administrators expressed that it was challenging to decide what to make a priority – therapeutic elements of the school or the implementation of RtI.
Facilitator – Good facilitator for students bridging back to neighborhood school. Teachers, administrators and students commented on the facilitating quality of RtI in helping students who are bridging back to their neighborhood schools. Teachers specifically noted the structure and work level at tier 1 resembles that of a “traditional” classroom, allowing students in tier 1 to feel some familiarity when transitioning back to traditional education classrooms.

I think that it’s helpful here for students who want to bridge back because the tier 1 is structured a lot like an English class at their typical home school, so I think that’s helpful for them. They get more homework, there’s research-based papers and it’s preparing them for college for those kids who want to go, at least the structure that I’ve seen is helpful to them in that way. The tier 2 is structured in the same way, just with more supports. And then—I obviously can speak more to the tier 3, just because that’s what I teach—it helps give kids confidence.

Similarly, the academic progress that students make as a result of differentiated instruction and additional supports can increase student confidence and competence, as expressed by teachers and students. Additionally, teachers expressed that students will likely continue to receive additional supports at their neighborhood school. Having become accustomed to receiving differentiated supports at this school, students may find familiarity in continuing to receive additional supports at their neighborhood school. The following teacher’s comments highlight these points:

I don’t necessarily see them....because usually when they are going back they’ve made such significant gains that it’s helped them prepare to be in their home school academically and feel more comfortable. I guess that that would be the link back to make that easier. I’m not sure if it even impacts how they fit into that RtI program. But I think for some kids it’s getting extra English time or another English class to another math class or things like that, it might prepare them for okay I’m not that different, it’s just like when I went to this school. So some comfortability.
This resulting benefit of RtI in making transitions back to traditional schools clearly motivated not only students, but also teachers to implement RtI with fidelity.

*Facilitator – A research based curriculum has worked for tier 3 students.*

Teachers and administrators reported that they felt that students in tier 3, particularly, were showing academic gains in reading skills. The gains were largely attributed to the use of the research based curricula being used at the tier 3 reading level.

*I think we have some nice things happening. I think that for a lot of the tier 2 kids, we’re meeting a lot of their needs through good differentiation. I think for our tier 3 kids, the Read 180 is really helpful. We’re able to provide one-on-one support for kids in math, for instance, that I think is great.*

*I think we’re headed in the right direction. Starting Read 180 this year was really nice, like I said, just the resources and knowing that I’m using something that’s research-based that the students are buying into felt really good for a population of students that don’t really usually feel good about reading or English. I saw a lot less resistance about coming to class, a lot less resistance about participating just because it felt good to be able to do what you’re being asked to do.*

Despite the challenges teachers and administrators expressed regarding finding adequate research based curricula appropriate for a therapeutic day school student population, teachers did express that this one curriculum was effective and appropriate for this student population.

Similarly, teachers also expressed that although it is challenging to find research based curricula and interventions at every level for every student, RtI implementation has resulted in teachers being more mindful of the curricula they do choose to use. The following teacher expressed this in her reflections:

*I think it’s moving towards having an impact. I think we’re more mindful of the curriculum we are using versus all of the teacher created things, I think we are*
moving towards more research based. Which will hopefully mean student progress

As illustrated in the above teacher’s reflections, RtI has influenced teachers’ mindsets to think more critically and be more aware of the instructional materials they do use. As a result, this teacher and other teachers expressed a belief that more mindfully selected instructional material is having a positive impact on student academic progress.

The qualitative data analysis also sought to answer the following second guiding question: How does the school plan on sustaining its implementation of RtI? The following theme emerged regarding RtI program sustainability at this school.

Theme: Leadership direction is needed for sustainability. When asked about sustainability, teachers and administrators did not make significant comments that directly addressed sustainability. Those that did express a viewpoint on sustainability focused on the role of administrators in leading the school’s sustainability efforts. A main theme that emerged was the importance of administration in the school to being involvement in the RtI implementation and sustainability process.

I think it needs to be a collective process where it’s a committee of representatives from around the school. Those that understand what the process is—and there’s plenty that do—to help form that goal, but I do think administration has to be involved in it because I think that’s one area that if they aren’t and they’re not consistently communicating that—that it’s a priority, that it’s something we need to and this is how we’re doing it—then it won’t get done, like anything else. If it’s just out there and administration is not involved in it, people will do something else because they won’t deem it so important, even though they know intrinsically that it’s something they do and it’s part of their job and it’s part of how they, it’s the best things for kids. They’re going to be constantly monitoring and doing all
this stuff anyway but maybe not in the way that we envision when we get that vision, envision it to happen. But I think they have to be involved.

A lack of focus on sustainability was evident throughout the interviews. The focus of most interviews with teachers and administrators focused on current implementation concerns and processes.

Summary

<table>
<thead>
<tr>
<th>Implementation Stage</th>
<th>Major Themes</th>
</tr>
</thead>
</table>
| Exploration and Adoption Stage           | • Another mandate in which we have no voice  
• We are already doing this  
• Not everyone is involved |
| Program Installation Stage               | • Poor theoretical and practical understanding of RtI  
• Flexibility within vaguely defined framework and practices  
• Outcome expectancies are unclear and difficult to define  
• Traditional RtI components needs adapting and reconsideration at a therapeutic day school |
| Initial Implementation Stage             | • Positive structural changes but incompatible cultural impact  
• RtI does improve teacher accountability  
• Difficult to balance values of community and RtI structure  
• Barrier – students’ emotional/behavioral needs  
• Barrier – lack of time  
• Facilitator – smoothes transition process for students returning to neighborhood schools  
• Facilitator – Tier 3 reading curricula has worked |

Table 1: Summary of Themes for each Implementation Stage

Quantitative Results

Research Question 1

What impact has RtI implementation had on student scores on standardized assessments and academic grades?
English grades. The ICC for English grade data was 46.45% indicating that the variance in English grades is explained by characteristics of the students who provided the data, and indicates that there are differences among students and reason for further exploration.

A linear relationship was not found between English grades and time. The significance testing for this model is presented below:

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>1.73</td>
<td>0.11</td>
<td>482</td>
<td>16.17</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td>Time</td>
<td>0.02</td>
<td>0.02</td>
<td>482</td>
<td>1.04</td>
<td>&lt;0.000</td>
</tr>
</tbody>
</table>

In testing more complex relationships, the time variable was converted into power polynomials beginning with a polynomial of 2. Power polynomials were increased in increments of 1 until the model was no longer significant. As indicated below, testing ceased at a polynomial of 2 as it was found to be non-significant, indicating no significant complex relationship between English grades and time:

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>1.80</td>
<td>0.08</td>
<td>481</td>
<td>22.34</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td>poly(Time, 2)1</td>
<td>1.24</td>
<td>1.19</td>
<td>481</td>
<td>1.04</td>
<td>0.299</td>
</tr>
<tr>
<td>poly(Time, 2)2</td>
<td>0.212</td>
<td>0.984</td>
<td>481</td>
<td>0.216</td>
<td>0.829</td>
</tr>
</tbody>
</table>

Next, it was tested whether there is a significant difference in the relationship between the English grades and time if the slope was allowed to vary and not held constant for all individuals. It was found that a model in which the slope between English grades and time was allowed to randomly vary fit the data
better than a model that fixes the slope to a constant value for all individuals.

Significance testing for the model is presented below:

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>logLik</th>
<th>Test L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed slope</td>
<td>1</td>
<td>1962.43</td>
<td>1984.69</td>
<td>-976.216</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vary slope</td>
<td>2</td>
<td>1923.47</td>
<td>1954.63</td>
<td>-954.735</td>
<td>42.962</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Although the model was improved by allowing for the slope to vary as compared to a fixed slope, the overall modeled relationship continued to remain non-significant.

As this time-series data is known to violate the assumptions of classical linear regression which state that the correlation of the sum of all the error terms is equal to zero and that the error terms are randomly and independently distributed across observations, additional analyses were conducted to determine if the modeled relationship could be improved by accounting for these violations. A model that accounted for these violations found to be a better fit with the data and is presented below:

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>logLik</th>
<th>Test L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Included</td>
<td>1</td>
<td>1923.47</td>
<td>1954.63</td>
<td>-954.735</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Included</td>
<td>2</td>
<td>1892.89</td>
<td>1928.50</td>
<td>-938.443</td>
<td>32.584</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Although the model was improved by including an autoregressive structure, the overall modeled relationship continued to remain non-significant.

Finally, the level 2 variable, student grade level, was not tested for its predictive value as a significant relationship was not found between English grades and time and thus there was not a significant modeled relationship in which to predict outcomes or slope.
**Mathematics grades.** The ICC for Mathematics grade data was 50.66% indicating that the variance in Mathematics grades is explained by characteristics of the students who provided the data, and indicates that there are differences among students and reason for further exploration.

A negative linear relationship was found between Mathematics grades and time, indicating that at each academic quarter, students’ mathematics grades decreased by approximately .05. Given that grade categories were organized in increments of 1, such a decrease translates into less than 1/20 of a grade point.

The significance testing for this model is presented below:

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>2.068</td>
<td>0.107</td>
<td>478</td>
<td>19.378</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td>Time</td>
<td>-0.054</td>
<td>0.019</td>
<td>478</td>
<td>-2.713</td>
<td>0.007</td>
</tr>
</tbody>
</table>

In testing more complex relationships, testing ceased at a polynomial of 2 as it was found to be non-significant, indicating just a linear relationship and no significant complex relationship between Mathematics grades and time:

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>1.879</td>
<td>0.082</td>
<td>477</td>
<td>22.931</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td>poly(Time, 2)1</td>
<td>-3.108</td>
<td>1.146</td>
<td>477</td>
<td>-2.712</td>
<td>0.007</td>
</tr>
<tr>
<td>poly(Time, 2)2</td>
<td>0.757</td>
<td>0.927</td>
<td>477</td>
<td>0.817</td>
<td>0.414</td>
</tr>
</tbody>
</table>

Next, it was found that a model in which the slope between Mathematics grades and time was allowed to randomly vary fit the data better than a model that fixes the slope to a constant value for all individuals. Significance testing for the model is presented below:
In testing whether the modeled relationship is improved by accounting for the violated assumption of independence in error terms across observations, a model that for these violations was found to be a better fit with the data, as presented below:

<table>
<thead>
<tr>
<th></th>
<th>Model</th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>logLik</th>
<th>Test</th>
<th>L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed slope</td>
<td>1</td>
<td>5</td>
<td>1903.956</td>
<td>1926.208</td>
<td>-946.978</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vary slope</td>
<td>2</td>
<td>7</td>
<td>1875.943</td>
<td>1907.096</td>
<td>-930.971</td>
<td>1 vs 2</td>
<td>232.013</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Finally, the level 2 variable, student grade level, was not found to significantly predict mathematic outcomes, as shown in significance testing below:

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>2.068</td>
<td>0.115</td>
<td>463</td>
<td>17.933</td>
<td>0.000</td>
</tr>
<tr>
<td>Time</td>
<td>-0.055</td>
<td>0.026</td>
<td>463</td>
<td>-2.104</td>
<td>0.036</td>
</tr>
<tr>
<td>Grade</td>
<td>-0.058</td>
<td>0.047</td>
<td>148</td>
<td>-1.228</td>
<td>0.221</td>
</tr>
</tbody>
</table>

Student grade level was also not found to be predictive of the slope of the relationship between mathematics grades and time, as indicated by the non-significant interaction term below:

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>2.077</td>
<td>0.116</td>
<td>462</td>
<td>17.847</td>
<td>0.000</td>
</tr>
<tr>
<td>Time</td>
<td>-0.054</td>
<td>0.027</td>
<td>462</td>
<td>-2.028</td>
<td>0.043</td>
</tr>
<tr>
<td>Grade</td>
<td>-0.104</td>
<td>0.064</td>
<td>148</td>
<td>-1.626</td>
<td>0.106</td>
</tr>
</tbody>
</table>
Curriculum-based measurement assessment: Overall reading. The ICC for CBM overall reading outcome data was 71.93% indicating that the variance in CBM overall reading outcome is explained by characteristics of the students who provided the data, and there are differences among students.

A positive linear relationship was found between CBM overall reading outcomes and time. The significance testing for this model is presented below:

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>23.412</td>
<td>131</td>
<td>17.582</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td>Time</td>
<td>0.852</td>
<td>131</td>
<td>2.875</td>
<td>0.005</td>
</tr>
</tbody>
</table>

In testing more complex relationships, the time variable was converted into power polynomials beginning with a polynomial of 2. As indicated below, a power polynomial of 3 produced the most significant relationship and the model was no longer significant at a power polynomial of 4. Significance for this updated model is presented below:

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>25.590</td>
<td>128</td>
<td>23.425</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td>poly(Time, 4)1</td>
<td>18.291</td>
<td>128</td>
<td>2.410</td>
<td>0.017</td>
</tr>
<tr>
<td>poly(Time, 4)2</td>
<td>13.456</td>
<td>128</td>
<td>2.458</td>
<td>0.015</td>
</tr>
<tr>
<td>poly(Time, 4)3</td>
<td>15.261</td>
<td>128</td>
<td>2.769</td>
<td>0.006</td>
</tr>
<tr>
<td>poly(Time, 4)4</td>
<td>-8.909</td>
<td>128</td>
<td>-1.633</td>
<td>0.010</td>
</tr>
</tbody>
</table>

In testing whether the significant cubic relationship found between the dependent variable and time is constant for all individuals, it was found that a
model in which the slope between CBM overall reading outcomes and time was allowed to randomly vary fit the data better than a model that fixes the slope to a constant value for all individuals. Significance testing for the model is presented below:

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>logLik</th>
<th>Test L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed slope</td>
<td>1</td>
<td>6</td>
<td>1459.463</td>
<td>1479.459</td>
<td>-723.732</td>
<td></td>
</tr>
<tr>
<td>Vary slope</td>
<td>2</td>
<td>8</td>
<td>1456.832</td>
<td>1483.494</td>
<td>-720.416</td>
<td>1 vs 2 6.631 0.036</td>
</tr>
</tbody>
</table>

The next step is to address the violation of the assumptions that the correlation of the sum of all the error terms is equal to zero and that the error terms are randomly and independently distributed across the observations. A model that accounted for these violated assumptions did not improve the fit of the model.

Finally, the level 2 variable, student grade level, was tested for its predictive value. Grade level was not found to be a significant predictor of CBM overall reading outcomes, nor was it found to be predictive of the slope of the relationship between CBM overall reading outcomes and time. Results of significance testing for predictive value for outcome are provided below:

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>26.355</td>
<td>1.168</td>
<td>109</td>
<td>22.564</td>
</tr>
<tr>
<td>poly(Time, 3)1</td>
<td>21.588</td>
<td>8.028</td>
<td>109</td>
<td>2.689</td>
</tr>
<tr>
<td>poly(Time, 3)2</td>
<td>13.185</td>
<td>5.591</td>
<td>109</td>
<td>2.358</td>
</tr>
<tr>
<td>poly(Time, 3)3</td>
<td>15.539</td>
<td>5.623</td>
<td>109</td>
<td>2.764</td>
</tr>
<tr>
<td>Grade</td>
<td>0.684</td>
<td>0.579</td>
<td>64</td>
<td>1.181</td>
</tr>
</tbody>
</table>

Results of significance testing for predictive value for slope are provided below:
Curriculum-based measurement assessment: Reading fluency. The ICC for CBM reading fluency outcome data was 88.34% indicating that the variance in CBM reading fluency outcome is explained by characteristics of the students who provided the data, and indicates that there are differences among students and reason for further exploration.

A positive linear relationship was found between CBM reading fluency outcomes and time. The significance testing for this model is presented below:

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>125.009</td>
<td>5.614</td>
<td>86</td>
<td>22.267</td>
</tr>
<tr>
<td>Time</td>
<td>4.767</td>
<td>0.877</td>
<td>86</td>
<td>5.435</td>
</tr>
</tbody>
</table>

To test more complex relationships, the time variable was converted into power polynomials beginning with a polynomial of 2. As indicated below, a power polynomial of 4 was significant; however, due to there only being 4 unique data points, additional polynomials beyond 4 could not be tested. Thus, a positive linear relationship will be assumed to be the interpretable significant relationship.
<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>136.428</td>
<td>5.081</td>
<td>83</td>
<td>26.851</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td>poly(Time, 4)1</td>
<td>82.503</td>
<td>17.259</td>
<td>83</td>
<td>4.780</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td>poly(Time, 4)2</td>
<td>32.916</td>
<td>10.115</td>
<td>83</td>
<td>3.254</td>
<td>0.002</td>
</tr>
<tr>
<td>poly(Time, 4)3</td>
<td>38.944</td>
<td>10.241</td>
<td>83</td>
<td>3.803</td>
<td>0.0003</td>
</tr>
<tr>
<td>poly(Time, 4)4</td>
<td>-26.323</td>
<td>9.813</td>
<td>83</td>
<td>-2.682</td>
<td>0.009</td>
</tr>
</tbody>
</table>

In testing whether the significant linear relationship found between the dependent variable and time is constant for all individuals, it was found that a model in which the slope between CBM reading fluency outcomes and time was allowed to randomly vary did not fit the data better than a model that fixes the slope to a constant value for all individuals. Results of the significance testing for the model are presented below:

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>logLik</th>
<th>Test L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed slope</td>
<td>1</td>
<td>4</td>
<td>1267.995</td>
<td>1279.762</td>
<td>-629.998</td>
<td></td>
</tr>
<tr>
<td>Vary slope</td>
<td>2</td>
<td>6</td>
<td>1271.222</td>
<td>1288.872</td>
<td>-629.611</td>
<td>0.774</td>
</tr>
</tbody>
</table>

The modeled relationship was improved when accounting for the violated assumptions that the correlation of the sum of all the error terms is equal to zero and that the error terms are randomly and independently distributed across the observations. The significance test for this model is presented below:

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>logLik</th>
<th>Test L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not included</td>
<td>1</td>
<td>4</td>
<td>1267.995</td>
<td>1279.762</td>
<td>-629.998</td>
<td></td>
</tr>
<tr>
<td>Included</td>
<td>2</td>
<td>5</td>
<td>1249.776</td>
<td>1264.485</td>
<td>-619.888</td>
<td>0.774</td>
</tr>
</tbody>
</table>

In testing whether the significant linear relationship found between the dependent variable and time is constant for all individuals, it was found that a model in which the slope between CBM reading fluency outcomes and time was allowed to randomly vary did not fit the data better than a model that fixes the slope to a constant value for all individuals. Results of the significance testing for the model are presented below:

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
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<th>BIC</th>
<th>logLik</th>
<th>Test L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed slope</td>
<td>1</td>
<td>4</td>
<td>1267.995</td>
<td>1279.762</td>
<td>-629.998</td>
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<td>-629.611</td>
<td>0.774</td>
</tr>
</tbody>
</table>

The modeled relationship was improved when accounting for the violated assumptions that the correlation of the sum of all the error terms is equal to zero and that the error terms are randomly and independently distributed across the observations. The significance test for this model is presented below:

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>logLik</th>
<th>Test L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not included</td>
<td>1</td>
<td>4</td>
<td>1267.995</td>
<td>1279.762</td>
<td>-629.998</td>
<td></td>
</tr>
<tr>
<td>Included</td>
<td>2</td>
<td>5</td>
<td>1249.776</td>
<td>1264.485</td>
<td>-619.888</td>
<td>0.774</td>
</tr>
</tbody>
</table>
Lastly, student grade level was tested for its predictive value. Grade level was not found to be a significant predictor of CBM reading fluency outcomes, but did show a trend towards significance.

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>133.513</td>
<td>5.328</td>
<td>69</td>
<td>25.056</td>
</tr>
<tr>
<td>Time</td>
<td>3.052</td>
<td>0.841</td>
<td>69</td>
<td>3.627</td>
</tr>
<tr>
<td><strong>Grade</strong></td>
<td><strong>7.606</strong></td>
<td><strong>3.839</strong></td>
<td><strong>42</strong></td>
<td><strong>1.981</strong></td>
</tr>
</tbody>
</table>

Student grade level was also not found to be predictive of the slope of the relationship between CBM fluency outcomes and time, as indicated by the insignificant interaction term between time and student grade level.

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>133.555</td>
<td>5.330</td>
<td>68</td>
<td>25.060</td>
</tr>
<tr>
<td>Time</td>
<td>2.799</td>
<td>0.919</td>
<td>68</td>
<td>3.045</td>
</tr>
<tr>
<td>Grade</td>
<td>8.336</td>
<td>3.982</td>
<td>42</td>
<td>2.093</td>
</tr>
<tr>
<td><strong>Time:Grade</strong></td>
<td><strong>-0.444</strong></td>
<td><strong>0.643</strong></td>
<td><strong>68</strong></td>
<td><strong>-0.690</strong></td>
</tr>
</tbody>
</table>

Measure of academic progress assessments: Overall reading. The ICC for MAP overall reading outcome data was 75.32% indicating that the variance in MAP overall reading outcome is explained by characteristics of the students who provided the data and indicates that there are differences among students and reason for further exploration.

A positive linear relationship was found between MAP overall reading outcomes and time. Results of the significance testing for this model are presented below:
<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>207.214</td>
<td>2.366</td>
<td>158</td>
<td>87.576</td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td><strong>1.269</strong></td>
<td><strong>0.533</strong></td>
<td><strong>158</strong></td>
<td><strong>2.382</strong></td>
</tr>
</tbody>
</table>

A more complex relationship between time and MAP overall reading outcome was not found, as shown below. Thus, a positive linear relationship will be considered the interpretable significant relationship.

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>210.207</td>
<td>1.991</td>
<td>157</td>
<td>105.601</td>
</tr>
<tr>
<td>poly(Time, 2)1</td>
<td>32.141</td>
<td>13.794</td>
<td>157</td>
<td>2.329</td>
</tr>
<tr>
<td>poly(Time, 2)2</td>
<td>-9.328</td>
<td>10.459</td>
<td>157</td>
<td>-0.892</td>
</tr>
</tbody>
</table>

It was found that a model in which the slope between MAP overall reading outcomes and time was allowed to randomly vary did not fit the data better than a model that fixes the slope to a constant value for all individuals.

Results of the significance testing for the model are presented below:

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>logLik</th>
<th>Test L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed slope</td>
<td>1</td>
<td>4</td>
<td>2037.354</td>
<td>2051.375</td>
<td>-1014.677</td>
<td></td>
</tr>
<tr>
<td><strong>Vary slope</strong></td>
<td>2</td>
<td>6</td>
<td><strong>2039.973</strong></td>
<td><strong>2061.005</strong></td>
<td>-1013.986</td>
<td>1 vs 2 1.382</td>
</tr>
</tbody>
</table>

Next, it was found that accounting for the violation of the assumptions of independence and random variability in error terms across observations improved the modeled relationship. Results of the significance testing of this model are presented below:

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>logLik</th>
<th>Test L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not included</td>
<td>1</td>
<td>4</td>
<td>2037.354</td>
<td>2051.375</td>
<td>-1014.677</td>
<td></td>
</tr>
<tr>
<td><strong>Included</strong></td>
<td>2</td>
<td>5</td>
<td><strong>1999.800</strong></td>
<td><strong>2017.326</strong></td>
<td>-994.899</td>
<td>1 vs 2 39.554</td>
</tr>
</tbody>
</table>
Finally, student grade level was tested for its predictive value. Student grade level was not found to be a significant predictor of MAP overall reading outcomes.

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>208.057</td>
<td>2.351</td>
<td>146</td>
<td>88.514</td>
</tr>
<tr>
<td>Time</td>
<td>0.860</td>
<td>0.467</td>
<td>146</td>
<td>1.840</td>
</tr>
<tr>
<td><strong>Grade</strong></td>
<td><strong>0.026</strong></td>
<td><strong>1.217</strong></td>
<td><strong>79</strong></td>
<td><strong>0.022</strong></td>
</tr>
</tbody>
</table>

Student grade level was not found to be predictive of the slope of the relationship between MAP overall reading outcomes and time.

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>208.078</td>
<td>2.357</td>
<td>145</td>
<td>88.284</td>
</tr>
<tr>
<td>Time</td>
<td>0.846</td>
<td>0.478</td>
<td>145</td>
<td>1.768</td>
</tr>
<tr>
<td>Grade</td>
<td>0.102</td>
<td>1.328</td>
<td>79</td>
<td>0.077</td>
</tr>
<tr>
<td><strong>Time:Grade</strong></td>
<td><strong>-0.037</strong></td>
<td><strong>0.262</strong></td>
<td><strong>145</strong></td>
<td><strong>-0.142</strong></td>
</tr>
</tbody>
</table>

**Measures of academic progress assessments: Language usage.** The ICC for MAP language usage outcome data was 75.05% indicating that the variance in MAP language usage outcome is explained by characteristics of the students who provided the data, and indicates that there are differences among students and reason for further exploration.

A positive linear relationship was found between MAP language usage outcomes and time. The significance testing for this model is presented below:

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>209.850</td>
<td>2.027</td>
<td>134</td>
<td>103.529</td>
</tr>
<tr>
<td>Time</td>
<td><strong>0.870</strong></td>
<td><strong>0.497</strong></td>
<td><strong>134</strong></td>
<td><strong>1.750</strong></td>
</tr>
</tbody>
</table>
A more complex relationship between time and MAP language usage outcome was not found, as shown below. Therefore, a positive linear relationship will be considered the interpretable significant relationship.

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>211.887</td>
<td>1.639</td>
<td>133</td>
<td>129.254</td>
</tr>
<tr>
<td>poly(Time, 2)1</td>
<td>19.468</td>
<td>11.397</td>
<td>133</td>
<td>1.708</td>
</tr>
<tr>
<td>poly(Time, 2)2</td>
<td>-3.661</td>
<td>8.989</td>
<td>133</td>
<td>-0.407</td>
</tr>
</tbody>
</table>

It was found that a model in which the slope between MAP overall reading outcomes and time was allowed to randomly vary did not fit the data better than a model that fixes the slope to a constant value for all individuals.

Significance testing for the model is presented below:

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>logLik</th>
<th>Test L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed slope</td>
<td>1</td>
<td>4</td>
<td>1680.049</td>
<td>1693.494</td>
<td>-836.025</td>
<td></td>
</tr>
<tr>
<td>Vary slope</td>
<td>2</td>
<td>6</td>
<td>1683.711</td>
<td>1703.879</td>
<td>-835.856</td>
<td>1 vs 2 0.338</td>
</tr>
</tbody>
</table>

Next, it was found that accounting for the violation of the assumption of independence and random variability in error terms across observations improved the modeled relationship. Results of the significance testing of this model are presented below:

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>logLik</th>
<th>Test L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not included</td>
<td>1</td>
<td>4</td>
<td>1680.049</td>
<td>1693.494</td>
<td>-836.025</td>
<td></td>
</tr>
<tr>
<td>Included</td>
<td>2</td>
<td>5</td>
<td>1655.429</td>
<td>1672.236</td>
<td>-822.715</td>
<td>1 vs 2 26.619</td>
</tr>
</tbody>
</table>

Finally, student grade level was tested for its predictive value. Student grade level was not found to be a significant predictor of student MAP language usage outcomes.
<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>211.014</td>
<td>2.016</td>
<td>127</td>
<td>104.683</td>
</tr>
<tr>
<td>Time</td>
<td>0.438</td>
<td>0.469</td>
<td>127</td>
<td>0.935</td>
</tr>
</tbody>
</table>

Student grade level was also not found to be predictive of the slope of the relationship between student MAP language usage outcomes and time.

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>211.066</td>
<td>2.032</td>
<td>126</td>
<td>103.853</td>
</tr>
<tr>
<td>Time</td>
<td>0.412</td>
<td>0.485</td>
<td>126</td>
<td>0.850</td>
</tr>
<tr>
<td>Grade2</td>
<td>-0.261</td>
<td>1.082</td>
<td>73</td>
<td>-0.241</td>
</tr>
<tr>
<td><strong>Time:Grade</strong></td>
<td><strong>-0.057</strong></td>
<td><strong>0.253</strong></td>
<td><strong>126</strong></td>
<td><strong>-0.226</strong></td>
</tr>
</tbody>
</table>

**Research Question 2**

What impact has RtI implementation had on student behavioral functioning?

The ICC for behavioral outcome data was 44.97% indicating that the variance in behavioral outcome is explained by characteristics of the students who provided the data, and indicates that there are differences among students and reason for further exploration.

A positive linear relationship was not found between behavioral outcomes and time. Results of the significance testing for this model are presented below:

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>74.019</td>
<td>1.635</td>
<td>5614</td>
<td>45.262</td>
</tr>
<tr>
<td>Time</td>
<td>0.008</td>
<td>0.019</td>
<td>5614</td>
<td>0.402</td>
</tr>
</tbody>
</table>
To test more complex relationships, the time variable was converted into power polynomials beginning with a polynomial of 2. Power polynomials were increased in increments of 1 until the model was no longer significant. As indicated below, a power polynomial of 4 produced the most significant relationship and the model no longer was significant at a power polynomial of 5.

Significance levels for this updated model are presented below:

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>74.486</td>
<td>1.465</td>
<td>5605</td>
<td>50.843</td>
<td>0.000</td>
</tr>
<tr>
<td>poly(Time, 5)1</td>
<td>61.214</td>
<td>32.215</td>
<td>5605</td>
<td>1.900</td>
<td>0.005</td>
</tr>
<tr>
<td>poly(Time, 5)2</td>
<td>-84.845</td>
<td>23.262</td>
<td>5605</td>
<td>-3.647</td>
<td>0.0002</td>
</tr>
<tr>
<td>poly(Time, 5)3</td>
<td>-211.309</td>
<td>23.351</td>
<td>5605</td>
<td>-9.049</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td><strong>poly(Time, 5)4</strong></td>
<td><strong>223.621</strong></td>
<td><strong>22.011</strong></td>
<td><strong>5605</strong></td>
<td><strong>10.160</strong></td>
<td><strong>&lt;0.000</strong></td>
</tr>
<tr>
<td>poly(Time, 5)5</td>
<td>-22.463</td>
<td>22.434</td>
<td>5605</td>
<td>-1.001</td>
<td>0.317</td>
</tr>
</tbody>
</table>

In testing whether the significant biquadratic relationship found between the dependent variable and time is constant for all individuals, the slope was allowed to vary in the updated model. It was found that a model in which the slope between behavioral outcome and time was allowed to randomly vary fit the data better than a model that fixes the slope to a constant value for all individuals.

Results of significance testing for this model are presented below:

<table>
<thead>
<tr>
<th></th>
<th>Model</th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>logLik</th>
<th>Test L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed slope</td>
<td>1</td>
<td>7</td>
<td>52631.93</td>
<td>52678.59</td>
<td>-26308.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vary slope</strong></td>
<td><strong>2</strong></td>
<td><strong>9</strong></td>
<td><strong>51739.65</strong></td>
<td><strong>51799.65</strong></td>
<td><strong>-25860.83</strong></td>
<td>1 vs 2 896.276</td>
<td><strong>&lt;.0001</strong></td>
</tr>
</tbody>
</table>
Next, it was found that a model which accounted for the violation of the assumption of independence and random variability in error terms across observations better fit the data, as presented below:

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>logLik</th>
<th>Test L.Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not included</td>
<td>1</td>
<td>9</td>
<td>51739.65</td>
<td>51799.65</td>
<td>-25860.83</td>
<td></td>
</tr>
<tr>
<td>Included</td>
<td>2</td>
<td>10</td>
<td>51021.04</td>
<td>51087.70</td>
<td>-25500.52</td>
<td>1 vs 2 720.612 &lt;.0001</td>
</tr>
</tbody>
</table>

Finally, grade level was tested for its predictive value. Grade level was not found to be a significant predictor of behavioral outcomes; however, it did approach significance as illustrated below:

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>73.878</td>
<td>1.621</td>
<td>5046</td>
<td>45.568</td>
</tr>
<tr>
<td>poly(Time, 4)1</td>
<td>-90.748</td>
<td>97.213</td>
<td>5046</td>
<td>-0.933</td>
</tr>
<tr>
<td>poly(Time, 4)2</td>
<td>-53.600</td>
<td>38.419</td>
<td>5046</td>
<td>-1.395</td>
</tr>
<tr>
<td>poly(Time, 4)3</td>
<td>-219.657</td>
<td>32.105</td>
<td>5046</td>
<td>-6.842</td>
</tr>
<tr>
<td>poly(Time, 4)4</td>
<td>207.253</td>
<td>29.084</td>
<td>5046</td>
<td>7.126</td>
</tr>
</tbody>
</table>

Grade was also not found to be a significant predictor of the slope between the behavioral outcome and time, as indicated by the non-significant interaction term below:

<table>
<thead>
<tr>
<th>Value</th>
<th>Std.Error</th>
<th>DF</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>74.319</td>
<td>1.632</td>
<td>5042</td>
<td>45.550</td>
</tr>
<tr>
<td>poly(Time, 4)1</td>
<td>-172.267</td>
<td>98.860</td>
<td>5042</td>
<td>-1.743</td>
</tr>
<tr>
<td>poly(Time, 4)2</td>
<td>-90.007</td>
<td>39.529</td>
<td>5042</td>
<td>-2.277</td>
</tr>
<tr>
<td>poly(Time, 4)3</td>
<td>-211.863</td>
<td>33.300</td>
<td>5042</td>
<td>-6.362</td>
</tr>
<tr>
<td>Term</td>
<td>Coefficient</td>
<td>Standard Error</td>
<td>Degrees of Freedom</td>
<td>p-value</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------</td>
<td>----------------</td>
<td>--------------------</td>
<td>---------</td>
</tr>
<tr>
<td>poly(Time, 4)</td>
<td>185.367</td>
<td>29.567</td>
<td>5042</td>
<td>6.269</td>
</tr>
<tr>
<td>Grade</td>
<td>-2.368</td>
<td>0.919</td>
<td>159</td>
<td>-2.577</td>
</tr>
<tr>
<td>poly(Time,4):Grade</td>
<td>49.274</td>
<td>55.337</td>
<td>5042</td>
<td>0.890</td>
</tr>
<tr>
<td>poly(Time,4):Grade</td>
<td>-69.054</td>
<td>22.861</td>
<td>5042</td>
<td>-3.021</td>
</tr>
<tr>
<td>poly(Time,4):Grade</td>
<td>-82.591</td>
<td>19.086</td>
<td>5042</td>
<td>-4.327</td>
</tr>
<tr>
<td><strong>poly(Time,4):Grade</strong></td>
<td><strong>69.394</strong></td>
<td><strong>16.389</strong></td>
<td><strong>5042</strong></td>
<td><strong>4.234</strong></td>
</tr>
</tbody>
</table>
CHAPTER IV

DISCUSSION

This study sought to use a global model of program implementation to explore the process of RtI implementation at a therapeutic day school. Additionally, this study sought to use standardized academic and behavioral data to evaluate the impact of RtI implementation on student academic and behavioral functioning at a therapeutic day school. Historically, research on the implementation process and potential effectiveness of RtI has been reserved for traditional school settings. This study filled a gap in the literature by expanding RtI research to include a nontraditional school setting, i.e. a therapeutic day school.

The Implementation Process

In order to provide a more global evaluation tool to investigate the implementation process of RtI that could be applied to diverse settings and RtI models, this study used Fixen and colleagues’ (2005) conceptualized stages of program implementation. Use of Fixen and colleagues’ (2005) model to organize and guide the evaluation of this school’s implementation of RtI allowed for not only an examination of staff and students’ responses and perspectives, it also allowed for an examination of structural and environmental changes as well as facilitators and barriers to the implementation process.
Similarities with Previous Research

Some similar themes were found in this study as had been found in a previous review of the implementation process in traditional school settings. In Burns and Ysseldyke’s (2005) review of four large scale RtI model implementations, they found the following significant factors that impacted successful RtI implementation: implementation fidelity, staff training, collaborative problem-solving teams, and leadership. These factors were also found to be significant topics that teachers and administrators at this school reflected on when discussing the implementation process. A discussion of how these themes manifested in the implementation process at this school is presented in turn below.

Similarly to research reported by Burns and Ysseldyke (2005), successful RtI implementation was heavily impacted by maintaining fidelity throughout the implementation process. For this school, staff reported that vaguely defined frameworks and practices had a direct impact on implementation fidelity. Closely related to vagueness in framework and practices was vaguely defined outcome expectancies or a vision for what successful RtI implementation would look like at this school. Teacher and administrators’ reflections suggest that without the firm base that would have resulted from strongly defined frameworks, practices and outcome expectancies, too much flexibility and different understandings of RtI hindered teachers’ ability to implement RtI in a standard and structured manner. A barrier to developing clear and well-defined outcome expectancies is the uniqueness of what those outcome expectancies will be for this
nontraditional school. Defined outcome expectancies in traditional school settings are focused on providing students with supports prior to referral or engagement with special education services in order to avoid unnecessary special education referrals (White, Polly, and Audette, 2012). Additionally, RtI success is traditionally defined by being able to assist and support students that are struggling academically but may not meet criteria for special education services (Swanson, Solis, Ciullo, and McKenna, 2012). At this school, all students are already receiving special education services; thus, there will be less of a preventive purpose in defining what outcome expectancies will be for this school. This leaves this school with less predefined notions for outcome expectancies forcing unique and original definitions.

Similar to themes identified by Burns and Ysseldyke (2005), teachers and administrators at this school also reflected on issues related to teacher training. Teachers expressed that a lack of ongoing, school level training affected their ability to implement RtI as prescribed as well as learn about new intervention strategies and curricula. Without such ongoing training, many teachers expressed having to independently research and find appropriate research-based materials for use in each tier, which many reported as very challenging and often unfruitful. Teacher training would also have a positive impact on what some teachers and administrators described as superficial and naïve understandings of RtI components and practices. As expressed by Burns and Ysseldyke (2005), teacher training is intrinsically linked to successful RtI implementation.
Collaborative and efficient problem solving teams also have been identified as important in the research on RtI in traditional school settings. This was echoed in this study. Teachers and administrators highlighted challenges and successes with the development and maintenance of effective team meetings to make educational decisions for students. Teachers expressed the benefits of RtI implementation on the use of more standardized assessment data in making educational decisions for students. Challenges to maintaining effective problem solving teams were predominately expressed to be related to teachers not having sophisticated understandings of RtI components (i.e., using various data in decision making), and not receiving the necessary ongoing training in these areas. Consistent with Burns and Ysseldyke’s (2005) conclusions, collaborative and efficient problem solving teams appear foundational to successful RtI implementation in any school setting.

And, finally, as in Burns and Ysseldyke’s (2005) review, this study found that teachers and administrators recognized the importance of strong leadership throughout the implementation process and to sustainability efforts. Teachers expressed that it was the role of the administrators to guide and direct RtI implementation. Some teachers reported that it was important to visibly see the administration involved in order to reassure teachers of their commitment and active engagement in the implementation process.

Themes Unique to This School’s Nontraditional School Environment

In all of the ways in which important factors for successful RtI implementation at a therapeutic day school were similar to those in traditional
school settings, there were just as many factors that were unique to a therapeutic
day school. One of the most prominent factors that appears to be unique to a
therapeutic day school’s experience of RtI implementation is the difficulty in
balancing students’ academic needs with their emotional and behavioral needs.
Teachers and administrators commented on the importance of addressing
students’ behavioral and emotional needs along with and, in some instances, prior
to addressing their academic needs. Without the buy-in and emotional stability of
students, teachers and administrators reflected that academic learning becomes
incredibly challenging, thus placing additional demands on teachers that may or
may not align with RtI practices and components. Moreover, teachers reflected
that they may need to adapt or adjust a specific research based intervention to
meet the unique needs of a student, thereby compromising the fidelity of that
intervention.

Similarly, another challenge unique to this school’s implementation
process is addressing the competing foci on creating an academic environment as
well as a therapeutic environment. As expressed by teachers and administrators,
at times, the creation of an environment that is academic as well as therapeutic
can be very challenging as many structural aspects of RtI are in conflict with
structures needed for a therapeutic environment. One specific structural
difference described is classroom organization and scheduling. As part of RtI,
participants noted, students experience significantly more transitions between
classrooms and are in classrooms where the student makeup can change from
class to class. In a therapeutic environment, the ideal classroom organization
includes more time spent with one core group of students and far less transitions in order to build a sense of community and belonging. Teachers and administrators expressed the difficulties of ensuring that students are placed in academically appropriate classrooms while maintaining a therapeutic environment. Consequently, some teachers and administrators reported on the loss of the strong sense of community and therapeutic environment that were present prior to full RtI implementation. Teachers reported needing to be more creative in adopting ways to maintain some therapeutic elements. One such method described is focusing on relationship building with students prior to focusing on academic interventions. Students also reflected on the importance of this relationship building with teachers as a facilitator to their learning.

Another significant challenge that appeared to be unique to this nontraditional school setting was the need to adapt some RtI components to fit the unique needs and student population. An ongoing process and challenge for this school is the tiering process. It was acknowledged by teachers and administrators that the population of students enrolled at this school are, technically, those students who would be placed in tier 2 or 3 at their neighborhood school. Thus, student tier placement at this school must be adapted in order to avoid a student body comprised of only tier 2 and tier 3 classrooms. The need to redefine student tier placement needs is compounded by the challenges of ensuring that student tier placement is based on academic abilities rather than clouded by emotional and/or behavioral functioning. Equally important for staff at this school to consider is how students placed in a particular classroom interact with one another as well as
the potential impact of having students with the most severe learning and behavioral/emotional needs all in one classroom. These considerations are unique to a therapeutic day school and existing research does not provide adequate guidance or best practice strategies for making such student tier placement decisions.

Despite unique and common challenges and issues faced by this school in its implementation of RtI, qualitative analyses revealed some positive impacts of successful RtI implementation in this nontraditional school environment. One of the unique positive impacts of RtI implementation is on facilitating students’ transition back to their neighborhood school. An overarching goal of this school is to stabilize and strengthen students in their abilities to succeed in the least restrictive environments. As such, it is significant that RtI implementation has positively impacted this process making transitions more comfortable and seamless for students. One important factor that facilitates these transitions is the common RtI structures present at this school and at the students’ neighborhood schools. With common structures, students feel more familiar and comfortable transitioning as there is some consistency in structure and support. This is particularly important to add to the research on RtI, as traditional school settings and nontraditional school settings can work together to provide students with less disruptive transitions and to better coordinate services for students through RtI.

Another significant positive impact of RtI implementation is teachers’ sense that students are becoming more confident and comfortable in the classroom, even if there is not a significant increase in grades or performance on
standardized assessments. Students also reported feeling as though they receive adequate and appropriate help at their individual level of needs. Improvements in students’ comfort may be due to students’ awareness that they are grouped with other students who have similar needs and are at similar academic levels. In focus groups, students confirmed this awareness and reported that being grouped with similar students was beneficial to their learning. Having groups of students at similar levels with common needs may have also facilitated teacher reported effectiveness and satisfaction with tier 3 reading curriculum. The tier 3 curriculum may have better targeted a specific set of common needs among all students in an ability leveled classroom rather than potentially meeting the needs of only some students in a multi-level classroom. And, vice versa, students’ comfort in the classroom may have made them more receptive to the curricula.

While research on RtI in traditional school settings has not specifically found that a specific tier’s curriculum was able to target specific set of common needs thereby making students who typically display emotional and behavioral problems more comfortable and stable, being able to meet students’ academic needs has been found to be a positive result of RtI implementation in the research. Swanson, Solis, Ciullo and McKenna (2012) found in their survey of school teachers at a traditional school implementing RtI that teachers felt that with an RtI structure, they were better able to meet the needs of students receiving and not receiving special education services. Still unique to this therapeutic day school, however, is the importance, and potentially significantly positive impact, of
balancing students’ academic needs with targeted curricula and students’ emotional needs with a stable and comfortable learning environment.

In sum, through this qualitative analysis of the implementation process of RtI at a therapeutic day school, a better understanding of the similarities and differences in the challenges and successes between traditional and nontraditional school settings emerged. Moreover, this study allowed, for the first time, a highlight of the unique challenges and issues experienced by nontraditional school settings in implementing RtI.

**Impact on Student Academic and Behavioral Outcomes**

**Lack of Overall Effectiveness Found on Academic Achievement**

Growth modeling analyses were used to determine the impact of RtI implementation on students’ behavioral and academic functioning and performances on ongoing standardized assessments. Two academic years were represented with the first half of data points representing the 2009-2010 academic year and the second half of data points representing the 2010-2011 academic year. Recall that RtI was not fully implemented in the 2009-2010 academic year, therefore serving as the “pre-RtI” year 1 data. The 2010-2011 served as the “during-RtI” year 2 data. Linear, cubic and biquadratic relationship were found in the relationships between students’ behavioral and academic outcomes and time.

- Linear relationship
- Cubic relationship
- Biquadratic relationship
Potential interpretations for these relationships are provided below.

In evaluating the impact of RtI implementation on students’ academic performance, this study found no significant relationship between time and English grades, a negative linear relationship between time and students’ Mathematics grades, and positive linear relationships between time and all but one standardized assessments of academic progress. While it is clear that no significant relationship between English grades and time indicates that RtI did not have an impact on outcomes, a linear relationship less obviously indicates the same. A linear relationship, whether positive or negative, indicates a constant slope between variables over all data points. Thus, the slope in the first half of data points, consisting of “pre-RtI” year 1 data, is the same as the slope in the second half of data points, which represent “during-RtI” year 2 data. Therefore, considering there is no change in the slope across time points, a linear relationship indicates no significant change in the relationship between students’ outcomes and time across year 1 and year 2. Moreover, even though elements of RtI may have been present in portions of year 1, the constant slope indicates a constant relationship between time and outcomes across all time points, meaning that at no point did the relationship between outcome and time significantly change. Thus, the linear relationships found between Mathematics grades and time and standardized assessments of academic progress and time indicate the same relationship between these outcomes and time from pre-RtI to during-RtI years. These findings suggest that RtI did not have a significant impact on students’
Mathematics grades or students’ performance on the majority of standardized assessments of academic progress.

A lack of association between RtI implementation and students’ academic performance stands in contrast to prior research. Previous meta-analyses and other quantitative research have shown that RtI has a significant positive impact on students’ academic achievement (Kovaleski, Gickling, Morrow, & Swank, 1999; Burns, Appleton, and Stehouwer, 2005; Bollman, Silberglitt, & Gibbons, 2007; Callender, 2007). Possible reasons for the overall reduced effectiveness of RtI in a therapeutic school setting were provided by teachers and administrators.

In particular, throughout this study, teachers and administrators commented on the lack of consistency in grading rubrics across teachers, impacting reliability and validity of grades across classrooms. Teachers and administrators also reflected that student level factors impact the reliability and validity of students’ academic data, including students’ emotional and behavioral stability, environmental challenges faced by students outside of school, and students’ lack of prior experiences with academic success. All of these factors impact students’ ability to consistently perform on assessments, consistently engage with academic material, and consistently demonstrate acquired knowledge and progress.

Another possible factor identified by staff is the compromised implementation fidelity of RtI due to ill-defined RtI frameworks, practices and outcome expectancies. Given the need for more concretely defined frameworks, practices and outcome expectancies, it is likely that there is inconsistency among
teachers’ implementation, and this threat to consistent implementation fidelity is likely to impact the ability of statistical methods to find strong and consistent positive effects. Also noted was the difficulty teachers have in finding targeted, relevant and developmentally appropriate research-based interventions and curricula to meet students’ needs. The challenge in finding such materials led some teachers to create new and/or modify existing materials, both of which compromise the integrity of the research-based material component of RtI. In addition to the availability and accessibility of research-based materials appropriate for students, teacher knowledge and competency in implementing research-based interventions and curricula are also important to consistent implementation among teachers. Teachers reported a need for more training and increased competency in RtI components, both of which are likely to impact consistency in implementation by teachers.

Another factor that could have contributed to discrepant findings is the early evaluation of RtI implementation at this school compared to prior research that included evaluations of schools further along in the implementation process. Perhaps more time is needed for RtI to show effects. As students have more exposure to RtI, RtI may increasingly impact skills and abilities thereby more effectively and strongly impacting academic performance. Thus, considering all the aforementioned limiting factors, current results could under represent possible benefits of RtI implementation on academic grades within a therapeutic day school.
Promising Findings for RtI Impact on Reading Comprehension

Despite the general trend for lack of effects for RtI on academic outcomes, a complex, cubic relationship was found between CBM reading comprehension outcomes and time, which does indicate a positive effect of RtI implementation on student performance on this assessment. The cubic relationship indicates that students initially present with an upward trend on performance on CBM reading comprehension assessments in the first half of the 2009-2010 academic year, prior to full RtI implementation. A cubic trend indicates that students’ performance then drops during the second half of the 2009-2010 academic year followed by a significant upward trend in scores during the first half of the following 2010-2011 academic year. The cubic trend indicates that student continue to improve in scores during the second half of the 2010-2011 academic year. In sum, this cubic trend in student performance on CBM reading comprehension assessments indicates that in the 2009-2010 academic year students begin the year with an upward trend followed by a downward trend during the second half of the year. However, during the 2010-2011 academic year students appear to begin the academic year on an upward trend in performance and continue to improve throughout the year. The positive change in the trend of student performance from year 1 data to year 2 data indicates a positive impact of RtI implementation on students’ performance on CBM reading comprehension.

This finding is more consistent with previous research. Although previous research has not shown an impact on reading comprehension in particular, previous research has shown a positive effect of RtI implementation on related
components of reading literacy. For example, an RtI program was shown to improve reading as measured by standardized norm-referenced measures (Kovaleski, Gickling, Morrow, & Swank, 1999) and, in one study, to double the percentage of students passing curriculum-based measurement in literacy (Bollman, Silberglitt, & Gibbons, 2007).

Students’ improved performance on assessments of reading comprehension relative to other academic outcomes may be explained by what teachers report to be a successful and effective reading curriculum for tier 3 students. Teachers reported that students in this tier appeared to make significant gains and respond very well to the reading curriculum chosen to meet the needs of students who are performing academically well below their same grade peers. The significant cubic relationship between CBM reading comprehension assessment and time provides quantitative evidence that complements the anecdotal and observational evidence provided by teachers.

This significant finding may also further reinforce arguments that students’ emotional and behavioral functioning as well as the appropriateness of research-based curricula are important for RtI effectiveness. Teachers reported observations that students, particularly those in tier 3 reading, felt more comfortable and engaged more when grouped with other students at similar academic levels. And, these students were observed to make the most significant progress in reading using an appropriate research-based reading curriculum. Thus, perhaps the combination of effective research-based curriculum and
increase in students’ stability/functioning within the classroom resulted in positive effects on student outcomes in this specific reading domain.

Despite the non-experimental nature of this study design, the specific effects for reading comprehension in combination with the qualitative reports that the research-based tier 3 reading curriculum was especially effective, provide preliminary evidence supporting the effectiveness of RtI on one dimension of students’ literacy achievement. Furthermore, the specific effects and qualitative reinforcement of those effects support that this study’s outcome variables and methodology were valid for assessing RtI preliminary effects. Positive effects of RtI on student academic functioning was not found for other specific literacy domains, specifically students’ reading fluency and language usage as measured by measures of academic progress (MAP) and reading fluency as measured by curriculum-based measurement (CBM). The structure and composition of these assessments are similar to the structure and composition of the CBM reading comprehension assessment in which positive effects for RtI were found. Given the similarity in composition and structure between all CBM and MAP assessments, it would appear unlikely that a structural critique of those assessments for which positive effects were not found would address the lack of findings. Considering the qualitative information provided by teachers and administrators regarding the observed effectiveness of the reading curriculum designed for tier 3 students, which targets reading comprehension and the necessary literacy skills to support reading comprehension, it is likely that the positive effects found for CBM reading comprehension is due to curriculum
effectiveness. It is also likely that these positive effects are evidence that standardized CBM and MAP assessments are capable of capturing the effectiveness of a curriculum that appropriately targets students’ academic functioning and skills.

**Effects of RtI on Student Behavioral Functioning**

In evaluating the impact of RtI implementation on student behavioral functioning, a biquadratic relationship was found between student behavioral data and time. A biquadratic relationship illustrates a cycle trend in students’ behavioral functioning. This cycle trend appears to indicate that students begin the academic year gradually improving in behavioral functioning, as evidenced by an increase in behavioral points, followed by a decline in behavioral functioning towards the end of the academic year. In a biquadratic relationship, this pattern of improvements early on followed by a decline is repeated during the second half of data points, or in other words during the following academic year. Considering the repeated pattern across academic years, this study cannot conclude that RtI implementation during the second year had a positive impact on students’ behavioral functioning. Teachers and administrators noted this behavioral trend, in which students initially perform better in the beginning of the year followed by a decline in performance at the end of the year. These quantitative analyses illustrate and support teacher and administrator observations.

In subsequent analyses, student grade level was not found to be a predictive factor for any analyses, indicating that there were not significant differences among the middle and high school programs in terms of how students
performed behaviorally, academically and on standardized measures. This non-finding may provide evidence that teachers’ and administrators’ perceptions of the middle school program functioning more efficiently and productively may not be accurate. Or, this non-finding could indicate that even if the middle school program teachers and staff have established more efficient problem solving teams, this has not happened to such a distinctive level that it has had a significant impact on student outcomes.

Conclusions

In sum, this study sought to better understand the process of RtI implementation and the impact of RtI implementation on students’ academic and behavioral functioning at a therapeutic day school as compared to a traditional school setting. Moreover, this study sought to better understand how barriers and facilitators in the RtI implementation process may help explain quantitative findings, and, in turn, how quantitative findings may provide evidence for qualitative observations of the implementation process.

Similar themes were found in this study as was found in previous RtI implementation research. Most notably are the challenges in ensuring implementation fidelity that are faced by staff in traditional as well as nontraditional school settings. These challenges were found to be driven by factors such as teacher training, well-defined and established frameworks and practices, establishment of efficient and competent problem-solving teams, and the presence of strong leadership. Unique barriers and facilitators were found specific to this therapeutic day school setting. Overall, barriers centered on the
challenges in addressing students’ emotional and academic needs when
organizing students (e.g. tiers), creating classroom environments for students, and
using appropriate research-based curricula. Despite these challenges, unique
facilitators were also found, including RtI structure serving as a constant for
students transitioning back to neighborhood schools, ability leveled classrooms
allowing students to feel more comfortable and teachers to use curricula to target
common needs, and teachers having more awareness and purposefulness in
choosing intervention and curricula for students.

Quantitative results suggest that students are improving in reading
comprehension as a result of RtI implementation, specifically the implementation
of a research-based reading curricula and the potential comfort that ability leveled
classrooms can provide. Results also suggests that while a linear relationship
exists between students’ performance on other measures of ongoing academic
progress (MAP reading and reading fluency assessments as well as CBM reading
fluency assessments), this linear trend remained constant from year to year. Thus,
it cannot be concluded that students’ performance on these assessments are
impacted by RtI implementation. Moreover, while this study found an interesting
trend in student behavioral functioning, again, this trend remained consistent from
one academic year to another, indicating no changes due to RtI implementation.
Results indicate that the overall effectiveness of RtI at a nontraditional school
setting may not be as strong as it has been shown at traditional school settings.
Existing research provides substantial data indicating strong and consistent
positive effects for RtI models on students’ academic outcomes in traditional
school settings; unfortunately, such strong and consistent findings were not replicated in this study of RtI at a nontraditional school setting.

Several factors found in themes from qualitative data were described in explaining these discrepant findings. Student academic data and performances on standardized assessments may have been impacted by students’ emotional and behavioral functioning, thereby not always being an accurate representation of students’ abilities or progress. Additionally, compromises to implementation fidelity due to ill-defined RtI frameworks and practices may have impacted the ability of statistical methods to find strong and consistent positive effects. Also impacting implementation fidelity was the difficulty in teachers being able to find and be trained in appropriate research-based curricula to meet the needs of students at a therapeutic day school.

Perhaps the simplest factor impacting effectiveness of RtI at this therapeutic day school is that this school is still in the early, initial implementation stage. Fixsen and colleagues (2005) discuss the sometimes chaotic and ever-changing nature of this stage as barriers and ineffectiveness are addressed with program revision while successful components are refined. Thus, perhaps this school’s RtI programming is not yet stable enough to find strong and consistent positive effects on student outcomes. However, the finding that RtI implementation has a potentially positive impact on one dimension of reading literacy is promising and consistent with existing research. This finding provides evidence that as more components of RtI programming at this school are securely established and refined and the multiple challenges identified are met, particularly
balancing students’ academic needs with their emotional needs, RtI implementation may begin to show a stronger and more consistent positive effect on student academic and behavioral functioning.
CHAPTER V

ABSTRACT

Response to Intervention (RtI) has been shown to be effective in improving student academic outcomes, and evaluations of the implementation process have been done in traditional school settings. Research on RtI implementation and effectiveness has excluded nontraditional school settings. Using a case study, mixed methods approach, this study fills this gap in the literature by evaluating the implementation process and effectiveness of RtI at a therapeutic day school. Similar themes regarding the implementation process were found in this study as was found in traditional schools, such as implementation fidelity, importance of teacher training, challenges with well-defined frameworks and practices, significance of establishing efficient problem-solving teams, and creating strong leadership. Unique barriers and facilitators were found for this non-traditional school setting. Unique barriers included the challenges in addressing students’ emotional and academic needs when organizing students into ability leveled tiers, creating therapeutic classroom environments for students, and accessing and using appropriate research-based curricula. Unique facilitators included helping students transition back to neighborhood schools, and ability leveled classrooms allowing students to feel more comfortable and teachers to use curricula to target common needs. While strong effects on student achievement and behavioral outcomes were not found,
results did suggest that students are improving in reading comprehension as a result of RtI implementation. Potential explanations for these findings are explored, including the impact of students’ emotional and behavioral functioning on academic achievement, and the difficulties of adapting competing RtI structures to a therapeutic, nontraditional school environment.
REFERENCES


Barnhardt, J. (2009). Response to intervention in Rhode Island: A case study of two elementary schools at different stages of RTI implementation. *Dissertation Abstracts International Section A, 70*


Appendix A

Demographic Questionnaire
Demographic Questionnaire – Students

What grade are you in? (circle one)

6th  7th  8th  9th  10th  11th  12th

Who is your reading teacher?

______________________________________

Who is your mathematics teacher?

______________________________________

What is your current age?  What is your sex?

__________  __________

Is this your first time at North Shore Academy or are you returning after being here before?

First time  Returning (this is my 1st 2nd 3rd 4th 5th time)

How long have you been at North Shore Academy? (circle one for current attendance)

Less than 1 month  1-3 months  3-6 months  6-12 months  12-18 months

18-24 months  More than 24 months (2 years)

What are the reasons for you being at North Shore Academy?

____________________________________________________________

___________________________________________

_______________________
Have you started bridging back to your neighborhood school at any time?  Yes

No

If yes, when and how is or did it go?

________________________________________________________________________

________________________________________________________________________

What are your most recent grades in reading and mathematics?

Reading _________  Mathematics __________
Demographic Questionnaire – Teachers and Administrators

What is your role at North Shore Academy?

Teacher (subject(s): _____________________________)

Teacher: (grade(s): _____________________________)

Administrator (position(s): ______________________)

How long have you been at North Shore Academy in this role? (circle one)

1 year  2-3 years  4-6 years  6-8 years  8-10 years  More than 10 years

What is your professional training (including years of professional training and education and any specialized training)?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

How long have you been in this profession (including time outside of North Shore Academy)?

1 year  2-5 years  5-7 years  7-10 years  10-15 years  More than 15 years

What is your age?

_______________

What is your sex?

_______________
Appendix B

Interview Protocols
Interview Protocol – Teacher

First, I’d like to talk about your experiences and view of RtI.

1. Tell me about your educational background and work experience.
2. Tell me how you first became aware of RtI.
3. Tell me how you first became aware that RtI would be implemented at your school.
4. Describe your experience with RtI so far.

Now I’d like to talk about RtI more generally at your school.

5. Describe any obstacles you and your school have encountered during the initial use of RtI principles.
   a. How has the school handled those obstacles?
6. Tell me about this school’s RtI structure.
7. Tell me about any changes in roles and responsibilities that have come about as a result of or in conjunction with RtI at this school.
8. What impact has RtI had at this school?

And finally, I’d like to talk about your RtI activities.

9. Describe your RtI team.
   a. How often do you meet?
   b. Where/When do you meet?
   c. Describe what occurs during RtI meetings
10. Describe how you would apply RtI to a particular student.
    a. What guidelines are you aware of for using RtI with students
11. Tell me about how you monitor student progress.
a. What are the next steps if a student does not make progress?

12. Is there anything we haven’t talked about regarding RtI in this school that is important to know?

**Interview Protocol – Administrator**

First, I’d like to talk about your experiences and view of RtI.

1. Tell me about your educational background and your role at this school.

2. Tell me how you first became aware of RtI.
   a. How was RtI presented to educators and therapists?

3. Tell me how you first became aware that RtI would be implemented at your school.

4. Describe your experience with RtI so far.

Now I’d like to talk about RtI more generally at your school.

5. Describe any obstacles you and your school have encountered during the initial use of RtI principles.
   a. How has the school handled those obstacles?

6. Tell me about this school’s RtI structure.
   a. Who decided on this structure?
   b. Who ensures that this structure is followed?

7. Tell me about any changes in roles and responsibilities that have come about as a result of or in conjunction with RtI at this school.
   a. How have others responded to these changed roles?

8. What impact has RtI had at this school?
And finally, I’d like to talk about your RtI activities.

9. Describe your role in RtI
   a. How often do you meet with educators and therapist about RtI?
   b. Where/When do you meet?
   c. Describe what occurs during RtI meetings

10. Describe guidelines for using RtI with students.

11. Tell me about how a teacher would monitor student progress.
   a. What are the next steps if a student does not make progress?

12. Is there anything we haven’t talked about regarding RtI in this school that is important to know?

**Interview Protocol – Student**

First, I’d like to talk about your experiences and view of RtI.

1. What grade are you in?

2. How long have you been at this school?

3. What is RtI?

4. How do you think RtI has changed your school work and expectations from your teacher?

And finally, I’d like to talk about your RtI activities.

5. What RtI tier are you in?
   a. How do you know this?
   b. What does this mean?

6. Are there different activities you must engage in since your school started using RtI?
a. How do you feel about these activities?

b. Are these activities helpful to you and your learning?

7. Is there anything we haven’t talked about regarding RtI in this school that is important to know?
Appendix C

Focus Group Protocol
Demographic Questionnaire – Students

What grade are you in? (circle one)

6th  7th  8th  9th  10th  11th  12th

What is your current age? __________  What is your sex?  Male
Female

Is this your first time at North Shore Academy or are you returning after being here before?

First time  Returning (this is my 1st  2nd  3rd  4th  5th time)

How long have you been at North Shore Academy? (circle one for current attendance)

Less than 1 month  1-3 months  3-6 months  6-12 months  12-18 months
18-24 months  More than 24 months (2 years)

What are the reasons for you being at North Shore Academy? (circle all that apply)

Grades  Behavior  Substance Use  Other: ____________________

Have you started bridging back to your neighborhood school at any time?  Yes
No
What are your most recent grades in reading and mathematics?

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Focus Group Script

State: Thank you for agreeing to participate in this focus group. The purpose of this focus group is to learn more from you, the students, about what your educational experience has been at North Shore Academy. First, we will read through the assent form. I will answer any questions you have and then you will sign if you agree to participate. Then, we will read through the demographic form and you will complete it as we read through it. I will come around and pick up the signed forms and the demographic from you.

Read assent form and answer questions. Collect assent forms and demographic forms when complete.

State: By agreeing to participate in this focus group, we also ask that you agree to keep all information that is discussed by others in this group confidential.

Keeping all information confidential means that you will not repeat or share what is said by others to anyone at any time after you leave this focus group. This would include discussing what others have specifically said even with other students that are participating in this focus group here today. Are there any questions?

Answer any questions. Begin focus group protocol.

State:

First, I’d like to talk about your experiences in your classes.

8. How are your classes made up?

   a. Do you like the way your classes are put together?

   b. Do you have any thoughts about why it is put together this way?
9. **If you are having a hard time in a class, what happens?**
   
a. **How do teachers help you?**
   
b. **Do you have to ask for help or do teachers help you without you asking?**
   
c. **Do you think that the things you describe teachers doing help you do better?**
   
Now, I’d like to ask you about how you are doing in your classes.

1. **How do you know how you are doing in your classes?**
   
2. **Do you have any goals that you talk about with your teachers?**
   
a. **How do you know how close or far away you are in reaching those goals?**
   
3. **Do you every talk to teachers about what you are supposed to know by the end of the semester?**
   
Now, I’d like to talk to you about activities you do in the classroom.

1. **Tell me about the tests and quizzes you take in your class?**
   
a. **What do they tell you?**
   
   b. **Why do you take them?**
   
   c. **How do you feel about taking them?**
   
   d. *(If students do not bring up CBMs and MAP testing)* **Are there other short quiz-like assessments that you take that sometimes you teachers might call CBMs? Or MAP testing?*
i. What are your thoughts about those?

Is there anything about your education at North Shore Academy that I did not ask about that you want to share?
Appendix D

Informed Consent Forms
PARENTAL PERMISSION FOR CHILD’S PARTICIPATION IN RESEARCH STUDY

A CASE STUDY OF A THERAPEUTIC DAY SCHOOL’S IMPLEMENTATION OF RESPONSE TO INTERVENTION

What is the purpose of this research?
We are asking your child to be in a research study because we are trying to learn more about how North Shore Academy is providing an education to your child using the Response to Intervention model and how this model is affecting your child’s achievement. Your child is invited to participate in this study because s/he is attending middle or high school at North Shore Academy. This study is being conducted by Sophia Duffy, a graduate student at DePaul University obtaining a doctoral degree in clinical psychology under the advisement of Dr. Kathryn Grant.

How much time will this take?
This interview portion of this study may take about thirty to forty minutes of your child’s time.

What will my child be asked to do if I allow her/him to participate in this study?
If you allow your child to be in this study, s/he may be asked to answer some questions about his/her ideas and thoughts about his/her education, his/her ideas and thoughts about Response to Intervention, and how he/she is feeling about his/her school. Your child will also be asked some demographic information including grade level, classes, age, sex and length of attendance at North Shore Academy. Response to Intervention is an approach to education that provides students with varying levels of supports depending on their needs and then monitoring how well they respond to those supports. If needed, more supports are provided if they are not making adequate progress. We hope that your child will share information about how Response to Intervention is making a difference in his/her education at North Shore Academy.

Also, academic and behavioral information will be collected for all students at North Shore Academy, including grades, points data, Individual Education Plan goals (an Individual Education Plan is a document that outlines your student’s current academic and behavioral progress as well as the placement, accommodation and modifications available to your student) and curriculum-based measurement data (curriculum-based measurements are weekly to monthly assessments of your students academic progress). This academic and behavioral information will be de-identified with student names replaced with numbers. Your child will not be required to take any action in the collection of this information. Additionally, if your child participates in an interview, academic and behavioral information will not be linked to interview data.

What are the risks involved in participating in this study?

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Being in this study does not involve any significant risks other than what your child would encounter in daily life. Your child may experience some discomfort in discussing his or her educational experiences. Additionally, while all efforts to not disrupt class time will be taken, your child may experience a change in his or her normal daily schedule. This change may cause some discomfort. To minimize this risk, your child will be informed and prepared in advance of any schedule changes due to participation in the interview. There may also be the risk of breach of confidentiality of school record data and mental health information. To minimize this risk, all student record data will be provided to the principal investigator with all student names replaced with numbers with no key linking student names to numbers. Additionally, all data will be secured in a locked cabinet only available to the principal investigator and the research team. Voice recordings will only be available to the principal investigator and members of the research team. Voice recordings will not be made available to any school personnel or students.

**What are the benefits of my child’s participation in this study?**
Your child will not personally benefit from being in this study. However, we hope that what we learn will help schools, like North Shore Academy, provide the most beneficial education to students.

**Can I decide not to allow my child to participate? If so, are there other options?**
Yes, you can choose not to allow your child to participate. Even if you allow your child to be in the study now, you can change your mind later, and your child can leave the study. There will be no negative consequences if you decide not to allow your child to participate or change your mind later. Your decision whether or not to allow your child to participate in the research will not affect your child’s grades or participation in any school programs. Also, even if you give your permission, your child may decide that s/he does not want to be in this study, and that is ok with us.

Parents please be aware that under the Protection of Pupil Rights Act, 20 U.S.C. Section 1232 (c)(1)(A), you have the right to review a copy of the questions asked or of materials that will be used with your students. If you would like to do so, you should contact Sophia Duffy at (773) 325-4458 to obtain a copy of the questions or materials.

**How will the confidentiality of the research records be protected?**
The records of this study will be kept confidential. In any report we might publish, we will not include any information that will identify your child. Research records will be stored securely, and only the researchers will have access to the records that identify your child by name. Some people might review our records in order to make sure we are doing what we are supposed to. For example, the DePaul University Institutional Review Board may review your child’s information. If they look at our records, they will keep your child’s
information confidential. Transcribers will also have access to what your child may say to make transcriptions of the recordings. The transcribers will not see your child’s name and will sign a confidentiality agreement. We will keep recordings for one year after they are collected.

Whom can I contact for more information?
If you have questions about this study, please contact Sophia Duffy at (773) 325-4458 or Dr. Kathryn Grant at (773) 325-4241. If you have questions about your child’s rights as a research subject, you may contact Susan Loess-Perez, DePaul University’s Director of Research Protections at 312-362-7593 or by email at sloesspe@depaul.edu.

You will be given a copy of this information to keep for your records.

Statement of Consent:
I have read the above information. I have all my questions answered. (Check one:)

☐ I permit my child to be in this study.    ☐ I DO NOT permit my child to be in this study.

Child’s Name:_________________________ Grade in School:___________

Parent/Guardian Signature:_________________________ Date:____________

Printed name:________________________________________
PARENTAL PERMISSION FOR CHILD’S PARTICIPATION IN RESEARCH STUDY

A CASE STUDY OF A THERAPEUTIC DAY SCHOOL’S IMPLEMENTATION OF RESPONSE TO INTERVENTION

What is the purpose of this research?
We are asking your child to be in a research study because we are trying to learn more about how North Shore Academy is providing an education to your child using the Response to Intervention model and how this model is affecting your child’s achievement. Response to Intervention is an approach to education that provides students with varying levels of supports depending on their needs and then monitoring how well they respond to those supports. If needed, more supports are provided if they are not making adequate progress. Your child is invited to participate in this study because s/he is attending middle or high school at North Shore Academy. This study is being conducted by Sophia Duffy, a graduate student at DePaul University obtaining a doctoral degree in clinical psychology under the advisement of Dr. Kathryn Grant.

How much time will this take?
Your child’s participation in this study may take about thirty to thirty-five minutes of your child’s time.

What will my child be asked to do if I allow her/him to participate in this study?
If you allow your child to be in this study, s/he may be asked to answer some questions about his/her ideas and thoughts about his/her education, his/her ideas and thoughts about Response to Intervention, and how he/she is feeling about his/her school. This will be conducted in a group setting with peers in the same academic program, called a focus group. We hope that your child will share information about how Response to Intervention is making a difference in his/her education at North Shore Academy. Your child will also be asked some demographic information including grade level, classes, age, sex and length of attendance at North Shore Academy by completing a private demographic sheet.

Also, academic and behavioral information will be collected for all students at North Shore Academy, including grades, points data, and curriculum-based measurement data (curriculum-based measurements are weekly to monthly assessments of your students academic progress). This academic and behavioral information will be de-identified with student names replaced with numbers. Your child will not be required to take any action in the collection of this information. Additionally, if your child participates in a focus group, academic and behavioral information will not be linked to focus group data.

What are the risks involved in participating in this study?
Being in this study does not involve any significant risks other than what your child would encounter in daily life. Your child may experience some discomfort
in discussing his or her educational experiences in front of peers. Other students in the focus group may share information that is discussed; however, to minimize this risk, all students that participate in the focus group will be asked to keep what is said confidential. Additionally, while all efforts to not disrupt class time will be taken, your child may experience a change in his or her normal daily schedule. This change may cause some discomfort. To minimize this risk, your child will be informed and prepared in advance of any schedule changes due to participation in the focus group. There may also be the risk of breach of confidentiality of school record data and mental health information. To minimize this risk, all student record data will be provided to the principal investigator with all student names replaced with numbers with no key linking student names to numbers. Additionally, all data will be secured in a locked cabinet only available to the principal investigator and the research team. Voice recordings will only be available to the principal investigator and members of the research team. Voice recordings will not be made available to any school personnel or students.

What are the benefits of my child’s participation in this study?
Your child will not personally benefit from being in this study. However, we hope that what we learn will help schools, like North Shore Academy, provide the most beneficial education to students.

Can I decide not to allow my child to participate? If so, are there other options?
Yes, you can choose not to allow your child to participate. Even if you allow your child to be in the study now, you can change your mind later, and your child can leave the study. There will be no negative consequences if you decide not to allow your child to participate or change your mind later. Your decision whether or not to allow your child to participate in the research will not affect you’re your child’s grades or participation in any school programs. Also, even if you give your permission, your child may decide that s/he does not want to be in this study, and that is ok with us.

Parents please be aware that under the Protection of Pupil Rights Act. 20 U.S.C. Section 1232 (c)(1)(A), you have the right to review a copy of the questions asked or of materials that will be used with your students. If you would like to do so, you should contact Sophia Duffy at (773) 681 - 2480 to obtain a copy of the questions or materials.

How will the confidentiality of the research records be protected?
The records of this study will be kept confidential. In any report we might publish, we will not include any information that will identify your child. Research records will be stored securely, and only the researchers will have access to the records that identify your child by name. Some people might review our records in order to make sure we are doing what we are supposed to. For example, the DePaul University Institutional Review Board may review your child’s information. If they look at our records, they will keep your child’s
information confidential. Transcribers will also have access to what your child may say to make transcriptions of the recordings. The transcribers will not see your child’s name and will sign a confidentiality agreement. We will keep recordings for one year after they are collected.

**Whom can I contact for more information?**
If you have questions about this study, please contact Sophia Duffy at (773) 681-2480 or Dr. Kathryn Grant at (773) 325-4241. If you have questions about your child’s rights as a research subject, you may contact Susan Loess-Perez, DePaul University’s Director of Research Protections at 312-362-7593 or by email at sloesspe@depaul.edu.

**You will be given a copy of this information to keep for your records.**

**Statement of Consent:**

I have read the above information. I have all my questions answered. (Check one:)

☐ I permit my child to be in this study. ☐ I **DO NOT** permit my child to be in this study.

Child’s Name:___________________________ Grade in School:__________

Parent/Guardian Signature:__________________________________________

Date: ________

Printed name:________________________________________________________
ASSENT TO PARTICIPATE IN RESEARCH STUDY

A CASE STUDY OF A THERAPEUTIC DAY SCHOOL’S IMPLEMENTATION OF RESPONSE TO INTERVENTION

What is the purpose of this research?
We are asking you to be in a research study because we are trying to learn more about how your school is working to provide you with an education using the Response to Intervention model and how this model affects your achievement. You are invited to participate in this study because you are a middle or high school student attending North Shore Academy. This study is being conducted by Sophia Duffy, a graduate student at DePaul University obtaining a doctoral degree in clinical psychology under the advisement of Dr. Kathryn Grant.

How much time will this take?
This study will take about thirty to forty minutes of your time.

What will I be asked to do if I agree to participate in this study?
If you agree to be in this study, you will be asked to answer some questions about your ideas and thoughts about your education, and your ideas and thoughts about Response to Intervention. Your will also be asked some demographic information including grade level, classes, age, sex and length of attendance at North Shore Academy. Response to Intervention is what your school is doing right now to give you supports in your classes while watching how well these supports help you. You will be asked to share how you are feeling about your school.

What are the risks of being in this study?
This study does not involve any risks other than what you deal with in daily life. You may experience some discomfort in discussing your educational experiences. Additionally, while all efforts to not disrupt class time will be taken, you may experience a change in your normal daily schedule. This change may cause some discomfort. To minimize this risk, you will be informed and prepared in advance of any schedule changes due to participation in the interview. There may also be the risk of breach of confidentiality of school record data and mental health information. To minimize this risk, all student record data will be provided to the principal investigator with all student names replaced with numbers with no key linking student names to numbers. Additionally, all data will be secured in a locked cabinet only available to the principal investigator and the research team. Voice recordings will only be available to the principal investigator and members of the research team. Voice recordings will not be made available to any school personnel or students.

What are the benefits of being in this study?
You will not get any benefit from being in this study. However, we hope that what we learn will help schools, like North Shore Academy, provide the most beneficial education to students like yourself.
Can I decide not to participate? If so, are there other options?
Yes, you can choose not to participate. We have asked your parents to let you be in this study. But even if your parents have said “yes,” you can still decide not to be in the study. Even if you agree to be in the study now, you can change your mind later and leave the study. Nothing bad will happen if you decide not to participate or change your mind later. Your decision whether or not to participate in the research will not affect your grades or participation in any school programs.

How will the confidentiality of the research records be protected?
The records of this study will be kept confidential. In any report we might publish, we will not include any information that will identify you. Research records will be stored securely and only the researchers will have access to the records that identify you by name. Some people might review our records in order to make sure we are doing what we are supposed to. For example, the DePaul University Institutional Review Board may review your information. If they look at our records, they will keep your information confidential. Transcribers will also have access to what you say to make transcriptions of the recordings. The transcribers will not see your name and will sign a confidentiality agreement. We will keep recordings for one year after they are collected.

Whom can I contact if I have questions?
If you have questions about this study, please contact Sophia Duffy at 773-325-4458 or Dr. Kathryn Grant at (773) 325-4241. If you have questions about your rights as a research subject, you may contact Susan Loess-Perez, DePaul University’s Director of Research Protections at 312-362-7593 or by email at sloesspe@depaul.edu.

You will be given a copy of this information to keep with you.

Statement of Assent:
I have read the above information. I have all my questions answered. (Check one:)

☐ I agree to be in this study.  ☐ I DO NOT agree to be in this study.

Signature: __________________________  Date: __________  Grade in School: ___

Guardian/Parent’s Name: __________________________
**ASSENT TO PARTICIPATE IN RESEARCH STUDY**

**A CASE STUDY OF A THERAPEUTIC DAY SCHOOL’S IMPLEMENTATION OF RESPONSE TO INTERVENTION**

**What is the purpose of this research?**
We are asking you to be in a research study because we are trying to learn more about how your school is working to provide you with an education using the Response to Intervention model and how this model affects your achievement. Response to Intervention is what your school is doing right now to give you supports in your classes while watching how well these supports help you. You are invited to participate in this study because you are a middle or high school student attending North Shore Academy. This study is being conducted by Sophia Duffy, a graduate student at DePaul University obtaining a doctoral degree in clinical psychology under the advisement of Dr. Kathryn Grant.

**How much time will this take?**
This study will take about thirty to thirty-five minutes of your time.

**What will I be asked to do if I agree to participate in this study?**
If you agree to be in this study, you will be asked to answer some questions about your ideas and thoughts about your education, and your ideas and thoughts about Response to Intervention in a group format. You will be asked to share how you are feeling about your school. You will also be asked some demographic information including grade level, classes, age, sex and length of attendance at North Shore Academy.

**What are the risks of being in this study?**
This study does not involve any risks other than what you deal with in daily life. You may experience some discomfort in discussing your educational experiences in front of peers. Other students in the focus group may share information that is discussed; however, to minimize this risk, all students that participate in the focus group will be asked to keep what is said confidential. Additionally, while all efforts to not disrupt class time will be taken, you may experience a change in your normal daily schedule. This change may cause some discomfort. To minimize this risk, you will be informed and prepared in advance of any schedule changes due to participation in the focus group. There may also be the risk of breach of confidentiality of school record data and mental health information. To minimize this risk, all student record data will be provided to the principal investigator with all student names replaced with numbers with no key linking student names to numbers. Additionally, all data will be secured in a locked cabinet only available to the principal investigator and the research team. Voice recordings will only be available to the principal investigator and members of the research team. Voice recordings will not be made available to any school personnel or students.
What are the benefits of being in this study?
You will not get any benefit from being in this study. However, we hope that what we learn will help schools, like North Shore Academy, provide the most beneficial education to students like yourself.

Can I decide not to participate? If so, are there other options?
Yes, you can choose not to participate. We have asked your parents to let you be in this study. But even if your parents have said “yes,” you can still decide not to be in the study. Even if you agree to be in the study now, you can change your mind later and leave the study. Nothing bad will happen if you decide not to participate or change your mind later. Your decision whether or not to participate in the research will not affect your grades or participation in any school programs.

How will the confidentiality of the research records be protected?
The records of this study will be kept confidential. In any report we might publish, we will not include any information that will identify you. Research records will be stored securely and only the researchers will have access to the records that identify you by name. Some people might review our records in order to make sure we are doing what we are supposed to. For example, the DePaul University Institutional Review Board may review your information. If they look at our records, they will keep your information confidential. Transcribers will also have access to what you say to make transcriptions of the recordings. The transcribers will not see your name and will sign a confidentiality agreement. We will keep recordings for one year after they are collected.

Whom can I contact if I have questions?
If you have questions about this study, please contact Sophia Duffy at 773-681-2480 or Dr. Kathryn Grant at (773) 325-4241. If you have questions about your rights as a research subject, you may contact Susan Loess-Perez, DePaul University’s Director of Research Protections at 312-362-7593 or by email at sloesspe@depaul.edu.

You will be given a copy of this information to keep with you.

Statement of Assent:
I have read the above information. I have all my questions answered. (Check one:)

☐ I agree to be in this study. ☐ I DO NOT agree to be in this study.

Signature:_________________ Date:__________ Grade in School:____

Guardian/Parent’s Name:__________________________________________
CONSENT TO PARTICIPATE IN RESEARCH

A CASE STUDY OF A THERAPEUTIC DAY SCHOOL’S IMPLEMENTATION OF RESPONSE TO INTERVENTION

What is the purpose of this research?
We are asking you to be in a research study because we are trying to learn more about how North Shore Academy is implementing Response to Intervention and the possible impact this may have on student outcomes. You are invited to participate in this study because you are a teacher working at North Shore Academy or you are an administrator or staff person working directly with Response to Intervention implementation. This study is being conducted by Sophia Duffy, a graduate student at DePaul University obtaining a doctoral degree in clinical psychology under the advisement of Dr. Kathryn Grant.

How much time will this take?
This study will take about forty-five to sixty minutes of your time.

What will I be asked to do if I agree to participate in this study?
If you agree to be in this study, you will be asked to participate in a semi-structured interview that will ask questions about your involvement in Response to Intervention involvement, your perspective and ideas about implementation and effectiveness, and your experiences and activities related to Response to Intervention. It will also include a short demographic questionnaire that asks for information regarding teaching experience and time at North Shore Academy. The semi-structured interview will be tape recorded and transcribed.

What are the risks involved in participating in this study?
Being in this study does not involve any significant risks other than what you would encounter in daily life. Some participants may experience some discomfort discussing opinions and views of Response to Intervention implementation as it may or may not include the critique of senior level staff and administrators. To decrease this risk, only aggregated and summary information will be presented in the final manuscript and interview data will not be linked with names. Additionally, voice recordings will only be available to the principal investigator and members of the research team. Voice recordings will not be made available to any school personnel or students.

What are the benefits of my participation in this study?
You will not personally benefit from being in this study. However, we hope that what we learn will help North Shore Academy and other schools like it learn ways to implement Response to Intervention in ways that are most beneficial for student achievement and school functioning. We also hope to highlight the ways in which you and others at your school are successfully impacting student achievement.
Can I decide not to participate? If so, are there other options?
Yes, you can choose not to participate. Even if you agree to be in the study now, you can change your mind later and leave the study. There will be no negative consequences if you decide not to participate or change your mind later. Your decision whether or not to participate in the research will not affect your employment or standing at North Shore Academy school.

How will the confidentiality of the research records be protected?
The records of this study will be kept confidential. In any report we might publish, we will not include any information that will identify you. Research records will be stored securely and only the researchers will have access to the records that identify you by name. Some people might review our records in order to make sure we are doing what we are supposed to. For example, the DePaul University Institutional Review Board may review your information. If they look at our records, they will keep your information confidential. Transcribers will also have access to what you say to make transcriptions of the recordings. The transcribers will not see your name and will sign a confidentiality agreement. We will keep recordings for one year after they are collected.

Whom can I contact for more information?
If you have questions about this study, please contact Sophia Duffy at (773) 325-4458 or Dr. Kathryn Grant at (773) 325-4241. If you have questions about your rights as a research subject, you may contact Susan Loess-Perez, DePaul University’s Director of Research Protections at 312-362-7593 or by email at sloesspe@depaul.edu.

You will be given a copy of this information to keep for your records.

Statement of Consent:
I have read the above information. I have all my questions answered. (Check one:)

☐ I consent to be in this study.  ☐ I DO NOT consent to be in this study.

Signature: ____________________________  Date: ____________________________

Printed name: ____________________________
Appendix E

All Communications with Participants
Response to Intervention

Understanding RtI’s implementation and impact at North Shore Academy

You are invited to participate in research that involves an interview where you can share your experiences with RtI.

The purpose of this project is to better understand how RtI is being implemented at North Shore Academy and what impact it may be having on our unique student population.

You will be contacted by Sophia Duffy to schedule an interview during non-instructional time at North Shore Academy.

The interview will last approximately 45 minutes.

This project is being conducted as part of dissertation research by Sophia Duffy, a clinical psychology Ph.D. student at DePaul University, Chicago.

For questions or for more information, please contact Sophia Duffy at sduffy8@depaul.edu
Response to Intervention

Understanding RtI’s impact at North Shore Academy

You are invited to participate in research that involves an interview where you can share your experiences with RtI.

The purpose of this project is to better understand how RtI is impacting you and your educational experience.

You will be contacted by Sophia Duffy to schedule an interview during non-instructional time at North Shore Academy.

The interview will last approximately 30 minutes.

This project is being conducted as part of dissertation research by Sophia Duffy, a clinical psychology Ph.D. student at DePaul University, Chicago.

For questions or for more information, please contact Sophia Duffy at sduffy8@depaul.edu
What do you think?

Talk about your experiences at NSA over a pizza lunch!

You are invited to participate in research that involves a focus group where you can share your educational experiences at North Shore Academy.

The purpose of this project is to better understand how RtI is impacting you and your educational experience.

You can sign up on the attached sign in sheet to participate in a focus group during your normal lunch time at North Shore Academy.

Lunch will be provided

The focus group will last approximately 30 minutes.

This project is being conducted as part of dissertation research by Sophia Duffy, a clinical psychology Ph.D. student at DePaul University, Chicago.

For questions or for more information, please contact Sophia Duffy at sduffy8@depaul.edu
December 7, 2011

Dear Parent and/or Guardian:

North Shore Academy is collaborating on a research project that looks at how Response to Intervention, an instructional model being used to guide your child’s education, is being implemented and impacting your student’s academic achievement. Using the Response to Intervention model, students are giving varying levels of supports and interventions based on their need. Students’ academic achievement is monitored to determine if the supports and interventions are helpful.

As part of this research project, your student may be selected to participate in a focus group where he/she will get a chance to talk about his/her educational experience at North Shore Academy. Students have volunteered to participate in focus groups.

Also as part of this research project, academic achievement and behavioral functioning data for all students attending North Shore Academy will be collected. This student academic and behavioral information will be provided to the principal investigator with all student names replaced with numbers. No student names will be attached to any student data. This will include grade point averages, behavioral points data, and curriculum-based measurement data. For those students who participate in focus groups, their academic and behavioral data will not be connected to them – it will remain anonymous.

The attached form provides a space for you to agree or disagree to your student’s participation in focus groups. Please sign and date the attached forms and return with your student. Please keep one form for your records.

Please return this form regardless of whether or not you agree with your student’s participation.

This project is being conducted by Sophia Duffy, a clinical psychology Ph.D. student at DePaul University in Chicago. For any questions or for additional information, please contact Sophia Duffy at sduffy@nssed.org or at 773.681.2480.

Sincerely,

Sophia Duffy, M.A.
Appendix F

Proposed Study Components Removed from Final Project
The following effectiveness model was proposed on the original project proposal. However, a lack of available data needed to effectively use this model prohibited its inclusion in the final project. The original effectiveness model and rationale for its use are described below as well as a detailed explanation of data that were not made available to the researcher.

**Model and Rationale for Use**

While standardized data as described above are helpful in understanding the magnitude of RtI’s impact, Shapiro and Clemens (2009) argue that such data are not enough and do not provide a well-rounded picture of the impact of RtI implementation. Shapiro and Clemens (2009) argue for an effectiveness model that addresses the sometimes nuanced and subtle impacts of RtI during initial implementation when a plethora of standardized data is not yet available. Thus, to evaluate the effectiveness of RtI implementation in a nontraditional school setting, this study will rely not only on academic and behavioral indicators (e.g. grades, curriculum-based measurements, behavioral functioning data), it will rely on Shapiro and Clemens (2009) well-defined conceptual model for evaluating the effectiveness of the initial implementation of RtI using measurable indicators of effectiveness. Prior studies of RtI effectiveness in traditional settings have not used this or comparable well-defined models; therefore, similarly to this study’s use of a global model of the implementation process, this study adds to the literature by using a well-defined effectiveness model that can be applied to multiple settings.
Shapiro and Clemens (2009) propose a set of five indicators that measure the impact of a school’s initial implementation of RtI. Below is an overview of Shapiro and Clemens (2009) model followed by a detailed explanation of the model.

<table>
<thead>
<tr>
<th>Effectiveness Indicators</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Level</td>
<td>What percentage of students scored within each tier level across benchmark periods?</td>
</tr>
<tr>
<td>Rate of Improvement</td>
<td>What is the average rate of improvement for students within a grade between benchmark periods?</td>
</tr>
<tr>
<td>Movement between Tiers</td>
<td>How many students moved between tiers (more or less intense) between benchmark periods?</td>
</tr>
<tr>
<td>Movement within Tiers</td>
<td>What is the average rate of improvement for students in tiers 2 and 3? How does that average rate compare to the target rate of improvement needed to close the achievement discrepancy between tiers?</td>
</tr>
<tr>
<td>Accuracy of Learning Disability Referrals</td>
<td>What percentage of students referred for learning disability evaluations were actually identified as having a learning disability?</td>
</tr>
</tbody>
</table>

(Adapted from Shapiro & Clemens, 2009, pp. 5)

Benchmark assessments are used to identify which students are performing at or above an identified proficiency cutoff point and which students are performing below this cutoff point. As described previously in the description of RtI components, benchmark assessments typically occur in the beginning and the middle of the academic calendar year. Those identified as performing at or above proficiency cutoff points are considered to be “low-risk” and placed in tier 1, while those performing below the cutoff point are considered to have “some
risk” (tier 2) or be “at-risk” (tier 3). Thus, an indicator of effectiveness would be a higher percentage of students in tier 1 from one benchmark period to another.

In addition the percentage of students in tier 1 over benchmark assessment periods, an individual student’s rate of improvement between benchmark periods is another indicator of effectiveness. An individual’s rate of improvement is determined by the number of benchmark periods needed in order to move from a higher tier to a lower tier. Individual students’ rates of improvement can then be aggregated to determine an entire grade level’s or school’s rate of improvement. Higher rates of improvement indicate that an RtI program is effective.

Tiered intervention allows for students to receive the necessary instructional supports and an appropriate intensity of instruction. It is expected that when a student responds to interventions, he or she reaches a level of performance that allows for movement from more intensive to less intensive tiers. Likewise, when a student is not responding to interventions, he or she is moved from less to more intensive tiers. When data show that a majority of students move from more to less intensive tiers, this direction of movement is indicative of the effectiveness of RtI in helping students make academic gains.

Tiered intervention also allows for the evaluation of student movement within a tier. In many models of RtI, a tier 2 or a tier 3 student is given a target rate of improvement that will put him or her on a path to narrow the achievement gap between him or her and peers in tier 1. In order to close this gap, the target rate of improvement must exceed that of the normative rate of improvement.
observed in tier 1 students. A clear trend of improvement consistent with closing the achievement gap would indicate that RtI programming is effective.

The last indicator of RtI effectiveness in the initial stages of implementation is the accuracy of referrals for diagnosis of a learning disability, meaning that a high proportion of students referred for a learning disability evaluation are actually determined to have a learning disability. It should be clarified that an effectiveness indicator of RtI is not simply to reduce the number of students identified as having a learning disability; it is to improve the accuracy of those identifications by eliminating the possibility of inadequate instruction as a reason for students’ academic difficulties. RtI defines those with a learning disability as those who did not respond at an expected rate to the most intensive interventions and instructional supports. Thus, if a high proportion of students referred for learning disability evaluations were then determined to have a learning disability, RtI would have been successful in identifying those students with underlying learning disabilities.

**Research Questions Based on Model and Explanation of Unavailable Data**

**Research Question 3:** Using Shapiro and Clemens’ (2009) five-part effectiveness model, what is the level of RtI effectiveness at this school?

A. Is RtI implementation associated with a significant increase in Tier 1 placements across benchmark periods?

B. What rate of overall student improvement is associated with RtI implementation?
C. What direction of student movement across tiers is associated with RtI implementation?

D. Are students in tier 2 and tier 3 placements improving at a rate that corresponds to closing the achievement discrepancy between those students and students in tier 1 placement?

E. Is RtI implementation associated with a significant increase in the accuracy of learning disability identification?

Research Question 3: Using Shapiro and Clemens’ (2009) five-part effectiveness model, what is the level of RtI effectiveness at this school? Central to answering this research question were data on the initial placement of student in tiers, systematic monitoring and documentation of student movement between tiers at benchmark periods, rate of student progress as compared to target rate of improvement needed to meet standards, and documentation regarding evaluation and confirmation of learning disability determinations. Only data on the initial placement of students at the beginning of each academic year were accessible. Data regarding learning disability determination, student movement across tiers and rates of improvement were not systematically collected and available for use in quantitative analyses. Thus, there was inadequate data for the use of Shapiro and Clemens’ (2009) five-part effectiveness model.