


2016

Impact of Professional Development in Response to Intervention on Secondary Teachers' Efficacy

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Walden University

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Crystal J. Spence

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Walden University

2016

Abstract

Impact of Professional Development in Response to Intervention on
Secondary Teachers' Efficacy

by

Crystal J. Spence

EdS Nova Southeastern University, 2005

MS Nova Southeastern University, 2003

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education

Walden University

March 2016

Abstract

In 2012, a southeastern state mandated that all school districts employ the response to intervention (RtI) tiered approach model to meet the needs of struggling students. RtI was implemented at the study site; however, secondary teachers were not confident in their abilities to implement RtI. Researchers have found that a teacher's sense of efficacy can impact student academic outcomes. Professional development on implementing RtI was provided for teachers in the study school. The purpose of this study was to examine the effect of explicit RtI professional development on the perceived self-efficacy of secondary teachers and their ability to impact student achievement. The study was framed within the constructs of social cognitive theory (SCT) and the associated concept of teacher efficacy. Pre and postintervention data were collected from 51 core subject area teachers using the Teacher Efficacy Scale Survey (short form). An analysis of the data was conducted using paired sample *t* tests to measure mean differences in efficacy scores. Results of the data analysis demonstrated significant gains in overall efficacy sum scores, personal teaching efficacy scores, and general teaching efficacy scores among the sample of teachers in this study. The results suggested a positive shift in teacher efficacy following the professional development. Recommendations included additional research with larger samples of teachers and the inclusion of a control group. Implications for positive social change include providing research findings to the local administration on the change in teacher efficacy following the RtI professional development. Recommendations are also provided for continued research on RtI, teacher efficacy, and student achievement.

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Dedication

I would like to dedicate this doctoral study to my mother Theresa Williams Gay. Her continuous encouragement, faith in my ability, love, and support sustained me. Thank you mom for teaching me to never give up and for reminding me I must finish what I start, even during times of difficulty.

My mother passed away on June 19, 2015 at 4:15 pm. Although my degree had not been conferred, I find solace in her knowing that I was on the final stretch towards completion.

Mom, you are terribly missed; actually I still cry every day. I believe in the Holy Bible from Genesis to Revelation and thus life after death. I will see you on the other side – Heaven.

I love you momma.

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Table of Contents

List of Tables	iii
List of Figures	iv
Section 1: Introduction to the Study	1
Background of the Problem	2
Problem Statement	4
Purpose of the Study	6
Theoretical Framework	6
Assumptions and Limitations	8
Research Question and Hypothesis	10
Definition of Terms	11
Nature of Study	12
Significance of Study	13
Summary	14
Section 2: Literature Review	15
Impact of Educational Failure	16
Educational Accountability	17
Response to Intervention	18
Theoretical Basis of Effective Teaching	25
Professional Development	41
Summary	44
Section 3: Methodology	46
Research Question and Hypothesis	46

Research Method and Design	47
Treatment: Professional Development.....	49
Population and Sampling	50
Informed Consent and Confidentiality.....	52
Instrumentation	53
Data Collection	54
Validity and Reliability.....	55
Data Analysis	56
Conclusion	57
Section 4: Data Analysis.....	58
Results.....	60
Summary.....	68
Section 5: Discussion, Conclusions, and Recommendations.....	70
Summary of Key Findings	71
Interpretation of the Findings.....	72
Limitations	74
Recommendations for Further Study	74
Implications.....	75
Conclusions.....	77
References.....	79
Appendix: Teacher Efficacy Scale (Short Form).....	101

List of Tables

Table 1. Cronbach’s Alpha Reliability Measures 60

Table 2. Skewness and Kurtosis of Differences 64

Table 3. Descriptive Statistics by Survey Item 65

Table 4. Results of Paired Sample *t* tests on Individual Survey Items (Pretest –
Posttest).....66

Table 5. Descriptive Statistics of Efficacy Construct Scores..... 67

Table 6. Results of Paired Sample *t* tests of Efficacy Construct Scores 68

List of Figures

Figure 1. Normal Q-Q plots of the calculated pre and posttest overall teaching efficacy scores.....	61
Figure 2. Normal Q-Q plots of the calculated pre and posttest personal teaching efficacy scores.....	62
Figure 3. Normal Q-Q plots of the calculated pre and posttest general teaching efficacy scores.....	63

Section 1: Introduction to the Study

Legislators, policymakers, and researchers have encouraged methods to ensure teachers deliver high quality instruction, including requiring that teachers complete specific training, possess a minimum level of content knowledge, and use curriculum materials and professional development resources available from schools and districts (Hill, 2015). Given national accountability requirements under the No Child Left Behind Act (NCLB, 2001), schools must implement research and standards-based interventions to ensure that all children, regardless of background, are reading proficiently by 2014. According to Leyva (2009), the implementation of NCLB has improved the quality of education because classroom sizes are smaller and teachers are required to use scientifically research-based practices for instruction. Response to intervention (RtI) is a tiered approach to providing the appropriate level of intervention to the individual students. RtI is commonly used and accepted at the elementary level; however, at the secondary level, it remains less understood and less accepted by teaching staff (Reschly & Wood-Garnett, 2009). As a result, secondary educators may lack necessary training and self-efficacy to appropriately and confidently implement the RtI model. Properly implementing the program with support from staff can reduce or even eliminate some academic and behavioral issues, ultimately improving overall outcomes (Reschly & Wood-Garnett).

Research is needed to provide greater understanding of the implementation of RtI at the secondary level. There is also a need for professional development for secondary teachers with regard to the RtI model to increase teachers' confidence in their ability to implement the intervention, as well as to affect change. Within a theoretical framework

of social cognitive theory (Bandura, 1977) and the concept of self-efficacy, a quantitative one group pretest and posttest study design was used to examine the level of RtI self-efficacy among teaching staff at a single middle school. The school from which the sample will be drawn, which in the most recent year failed to meet adequate yearly progress (AYP) as required by NCLB, is implementing RtI in response to state and local mandates and in an effort to resolve inadequate progress and demonstrate greater student success.

Background of the Problem

According to Anderson (2009), a belief exists that only advantaged students benefit from educational exposure. In addition, Anderson contended that there has been little to no expectation that minority students, economically challenged students, and students with disabilities will learn. The NCLB Act (2001), in conjunction with the Individuals with Disabilities Education Improvement Act (IDEIA) of 2004, has reformed the manner in which students are educated (U.S. Department of Education, 2004). All students are expected to achieve excellence academically and socially, regardless of family background.

Accountability in education encompasses regulation compliance, adherence to professional norms, and driven results (U.S. Department of Education, 2004). Accountability has become prominent in the field of education as schools, districts, and educators are held responsible for student assessment results (U.S. Department of Education, 2004). With heightened accountability, educators are now publicly charged with the daunting task of ensuring that all students read proficiently. This has forced many states to identify research-based strategies that will improve student outcomes

through effective instruction. The most current model of choice is RtI (Fountas & Pinnell, 2009).

RtI is designed to focus on all students using a model of prevention in lieu of a model of failure (Fountas & Pinnell, 2009). According to the National Center for Learning Disabilities (2006), RtI is:

A multi-step approach to providing services and interventions to students who struggle with learning at increasing levels of intensity. The progress students make at each stage of intervention is closely monitored. Results of this monitoring are used to make decisions about the need for further researched-based instruction and/or intervention in general education, in special education, or both. (p. 1)

Providing interventions is not a new concept in public schools in the United States, including the southeastern state in which this study took place. However, the main focus of RtI has been on the primary grades in elementary schools. In 2006, the state devised and published a plan to assist districts across all grade levels in meeting AYP utilizing the RtI model. The state contended that policy, professional development, and appropriate resources must be implemented appropriately in order to achieve student academic success. While research has contended that an effective principal is central to recruiting and supporting teachers, teacher effectiveness matters; prior research has demonstrated that teacher effectiveness contributes more to improving student academic outcomes than any other school characteristic (Darling-Hammond & Rothman, 2011).

In order for instruction to be effective, lessons must be designed to address the needs of each individual student (Conole & Fill, 2005). With this in mind, professional

educators are encouraged to expand their pedagogy yearly through college courses and/or district professional development (Carney & Stiefel, 2008). Pham (2012) stated, “Equipping students with practical skills and competences requires teachers to take the role as scholar practitioners who should develop an interdisciplinary understanding to keep up with increased demands in the globalization process” (p. 18). For decades, elementary teachers have provided interventions utilizing differentiated instruction (DI) via small group instruction (FDOE, 2004). However, this concept is fairly new to secondary education teachers. The dilemma is not their willingness to follow the school’s model, but rather their knowledge base, concept for RtI, and their familiarity with the process (FDOE, 2004).

Problem Statement

The teachers who work within the school selected for this study were faced with a complex educational challenge. Although the school for this study received an A+ rating for the past three school years, it failed to meet the adequate yearly progress criteria. It was believed that the students were not reading enough (U.S. Department of Education, 2001). The southeastern public school’s district was aware of this failure and implemented a concerted effort to pursue systematic change aimed at resolving the students’ lack of success across the district as mandated by the state (Castillo & Hines, 2009).

Administrative Rule 6A-6.0331 (Florida Administrative Code and Administrative Register, 2014), approved June 17, 2008, stipulated that it is the specific district’s “responsibility to develop and implement coordinated general education intervention procedures for students who need support to succeed in the general education

environment.” The mandate for the 2012-2013 school year stipulated that all schools within the southeastern public school district employ the RtI model regardless of the school’s previous letter grade (FDOE, 2008). The charge was to meet the needs of struggling and at-risk students using the multi-tiered RtI model. RtI implementation without fidelity is detrimental to improved student outcomes (Reschly & Wood-Garnett, 2009). In order to properly apply the model, enhanced understanding of the implementation of the model at the secondary level is necessary.

Greater understanding of RtI applications could alleviate resistance in secondary classrooms, allowing RtI implementation to continue to emerge at this level, despite barriers. If teachers are provided 25 hours of collaboration and training per year, schools can anticipate student achievement (Gallimore, Ermeling, Saunders, & Goldenberg, 2009). Effective processes and methodologies resulting from enhanced understanding of the process at the secondary level from the perspective of those who must employ the methods in the classroom must be present in order to produce proficient teachers who possess the necessary skills to handle complex academic and behavioral concerns (Nunn, Jantz, & Butikofer, 2009).

Teacher self-efficacy refers to the belief held by teachers that their actions result in favorable outcomes on student learning and behavior (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Incorporating seamless procedures and professional development that lend support to interventions and teachers can yield effective educators who are skillful and equipped to handle challenging academic and behavioral situations (Nunn & Jantz, 2009). As RtI implementation increases in secondary schools, research is needed

to gain a better understanding of the implementation process and the effect it has on educators (Erdem & Demirel, 2007).

Purpose of the Study

The RtI model was scheduled for full implementation in the school district in the fall of 2011 (Castillo & Hines, 2009). Based on previous school grades, it appears that students in the study school have entered school with the basic knowledge, continuously resulting in high performance. Unlike low performing schools under state sanctions, there has never been a mandate to provide specific remediation or interventions at this particular school. Because of this history of high performance, the teachers lack the necessary knowledge and/or training for effective RtI implementation and therefore, remain uncomfortable implementing the RtI model. The purpose of this study was to examine the perceptions of core subject area teachers about their efficacy to assess and disaggregate data, provide appropriate interventions, monitor students' progress in an on-going fashion, and ultimately improve student achievement, as the teachers' sense of efficacy has an impact on proper implementation, success of the program, and overall learning outcomes (Nunn & Jantz, 2009).

Theoretical Framework

The study was framed within the constructs of social cognitive theory (SCT) and the associated concepts of self-efficacy, perceived self-efficacy, and teacher efficacy (Ashton & Webb, 1986; Bandura, 1977, 1986, 1997; Gibson & Dembo, 1984). According to Bandura (1997), perceived self-efficacy is defined as "beliefs in one's capabilities to organize and execute the courses of action required to produce given

attainments'' (p. 3). Building on this notion of self-efficacy beliefs, Tschannen-Moran and Woolfolk Hoy (2001) stated:

Self-efficacy is a future-oriented belief about the level of competence a person expects he or she will display in a given situation. Self-efficacy beliefs influence thought patterns and emotions that enable actions in which people expend substantial effort in pursuit of goals, persist in the face of adversity, rebound from temporary setbacks, and exercise some control over events that affect their lives (Bandura, 1986, 1993, 1997, as cited by Tschannen-Moran & Woolfolk Hoy, 2001, p. 787)

Bandura's SCT provides a means to describe and understand both teaching and learning.

According to SCT, an individual's beliefs, including the individual's perception of his or her own capabilities, are continually shaped by one's experiences (Bandura, 1977, 1986, 1997). Barnyak and McNelly (2009) agreed that SCT describes how people create perceptions of their own abilities and shape their goals in life. High levels of efficacy in specific areas determine the degree of success in those areas (Barnyak & McNelly, 2009). Perceptions of personal capabilities determine behavior and effort in achieving a task (Bandura, 1977, 1986, 1997). Within the field of education, Bandura (1997) contended that teachers' personal self-efficacy is reflected in their attitudes and teaching efficacy.

The SCT element of self-efficacy is useful in exploring the beliefs of teachers and how these beliefs influence both teacher and student performance (Ashton & Webb, 1986). Personal efficacy beliefs and self-expectations of the teacher have been linked both to instructional practices and ultimately to student outcomes (Ashton & Webb,

1986). The perception of a successful teaching method or plan for a teacher serves to promote increased efficacy, promoting continued success. Negative emotions or negative influences of social persuasion or feedback can serve to decrease efficacy among teachers (Scheafer, 2010). Teachers' belief in their ability to perform and impact positive change within the classroom for positive student outcomes is referred to as *teacher efficacy* (Bandura, 1997; Gibson & Dembo, 1984). Allinder (1994) supported these ideas and concluded that a significant positive correlation exists between efficacy and the variables of instructional experimentation, organization, and planning.

To evaluate and compare levels of efficacy in relation to teacher training, the quantitative data collection framework was deemed appropriate for this research because it enables a comparison of the levels of efficacy prior to and after implementation of the teacher training in order to shed light on the impact of the professional development in RtI on the individual participants (Creswell, 2007). The study assessed levels of teacher self-efficacy related to RtI and as such, demonstrated the levels of teacher confidence in performing using the RtI model. The pre-experimental, single group pretest posttest design was employed. The implementation RtI for the first time at the school in which participants were drawn provided an opportunity to explore the teachers' sense of efficacy with regard to a new implementation of RtI and the impact of the professional development on teacher efficacy.

Assumptions and Limitations

The study was limited to a single public school in a southeastern state. The study also was limited to exploring the self-efficacy beliefs of teachers within this single school in terms of their personal efficacy as well as their perceptions of the impact of the

specific professional development opportunity provided related to RtI implementation. The study utilized quantitative data, which were obtained through the use of the Teacher Efficacy Scale, Short Form (TES-S) (Hoy & Woolfolk, 1993). The quantitative survey data were obtained from all core subject-area teachers on a voluntary basis both prior to and after completion of the specified professional development opportunity.

District curriculum personnel conduct professional development and model instructional lessons for school employees on a regular basis and therefore, it was assumed that they provide effective professional development and have the ability to establish excellent rapport with teachers. It must be assumed that the respondents answered the surveys truthfully. It was also assumed that the participants would attend the RtI related professional development session, and would be able to implement appropriate instructional strategies based on the needs of the student. The RtI model was implemented in all core subject areas as mandated by the state. The second limitation involved was the absence of a comparative group (control versus treatment) to determine whether the outcomes reflected in the study are a direct result of RtI professional development on teacher efficacy.

The weakness of the one group pretest posttest design is that it serves to compare the data and results from a single research group. As such, the research is not necessarily generalizable to the larger population of secondary school teachers implementing the RtI model. However, implications can be made from gaining an understanding of the self-efficacy beliefs of teachers at this study school attempting to successfully implement the RtI model to enhance student success.

Research Question and Hypothesis

Research has shown that it is not easy for students to flourish or for teachers to be effective if they are not provided with the essentials on effectively implementing the RtI process (Fuchs & Fuchs, 2006). To achieve this objective, teachers and administrators must be equipped with the research-based interventions and training, administered with adequate intensity, support, and leadership, to ensure success (Fuchs & Fuchs, 2006). As such, the researcher focused on the following research question: What effect, if any, does explicit training in the form of professional development on the RtI model have on the perceived self-efficacy of secondary core subject area teachers?

The question in this study was designed to address the impact, positive or negative, that training on the mandated intervention model would have on the participant's perception of their ability (self-efficacy) to impact student achievement.

Hypothesis

RQ: What effect, if any, does explicit training in the form of professional development on the RtI model have on the perceived self-efficacy of secondary core subject area teachers?

H₀: There is no significant difference in perceived self-efficacy from the Teacher Efficacy Scale (Short Form) pretest to posttest among secondary core subject area teachers who received training in the form of professional development on the RtI model.

H_a: There is a significant difference in perceived self-efficacy from the Teacher Efficacy Scale (Short Form) pretest to posttest among secondary core subject area teachers who received training in the form of professional development on the RtI model.

Definition of Terms

Accountability. Accountability refers to the practice of holding educational systems responsible for the quality of students' knowledge, skills, behaviors, and attitudes. It is a means to ensure that children are getting a good education and that tax dollars are not being wasted (U.S. Department of Education, 2004).

Adequate yearly progress (AYP). AYP is a measurement defined by the U.S. federal No Child Left Behind Act that allows the U.S. Department of Education to determine how every public school and school district in the country is performing academically, according to results on standardized tests. Schools must meet the following criteria in terms of having (a) tested 95% of the students in reading and math; (b) improved performance by 1% (0% is > 90); (c) 58% at or above grade level in reading; (d) 62% at or above grade level in math; and (e) increase graduation rate by 1% (the current rate is > 85) (U.S. Department of Education, 2001).

At-risk. At-risk refers to students who are demonstrating reading scores below average and are therefore at-risk are reading below grade level, or are receiving special education services (FDOE, 2008).

Collective teacher efficacy. A construct depicting teachers' shared beliefs about the capability of their school's faculty for successfully educating its students, which in turn shapes "the normative environment of schools" (Goddard, Hoy, & Hoy, 2000, p. 502).

Core subject. Core subject refers to non-elective courses (i.e. language arts, mathematics, reading, science, and social studies).

Multi-tiered strategy. Within the Multi-tiered strategy, each tier reflects the intensity of the intervention changes based on the students' need (Fuchs & Fuchs, 2006).

Response to intervention. "Response to Intervention is defined as the change in behavior or performance as a function of an intervention" (Gresham, as cited by FLDOE, 2008, p. 1). The RtI model is comprised of a multi-tiered approach to the provision of both quality instruction and intervention. The RtI model is matched to student needs, and is data-driven, using assessments to inform instructional decisions and practice to improve student learning (FDOE, 2008). The essential components of RtI include "multiple tiers of evidence-based instruction service delivery, a problem-solving method designed to inform the development of interventions, [and] an integrated data collection/assessment system to inform decisions at each tier of service delivery" (FDOE, 2008, p. 1).

Secondary schools. Secondary schools provide instruction for students in grades 6 – 12. Secondary schools are also known as middle, junior, or senior high school.

Self-efficacy. A person's perception of his/her ability to learn and perform tasks in particular situations (Jean-Baptiste, 2010; Schunk, 2011).

Teacher efficacy. According to Bandura (1997), self-efficacy within the realm of teachers' beliefs in their ability to perform and impact positive change in the students is termed *teacher efficacy*. Teachers with high self-efficacy expect themselves to promote student learning regardless of perceived obstacles (Heslin & Klehe, 2006).

Nature of Study

Using a quantitative research design incorporating a pre- and postquestionnaire with implementation of professional development, this researcher examined the impact of

professional development on teacher efficacy as it relates to the RtI model. Although incorporating the intervention model mandated by FDOE (2008) at the affected school district was not optional or voluntary; participating in this research study was. In addition, participants received extensive in-depth instruction on the RtI multi-tiered problem-solving model. A variety of example instructional strategies that can be incorporated into the intervention lesson/plan also were provided during professional development. An analysis of participating teachers' perceptions and level of implementation comfort were assessed during the post questionnaire.

Significance of Study

According to Tilly (2002), the RtI model seeks to systematize and integrate research-based best practice elements like educational problem-solving, scientifically-based interventions, school-related universal screening, and data-based decision making. However, to achieve success, the model must be implemented with fidelity, following the three-tiered approach. The Department of Education in the southeastern part of the US (2008) charged each school district with the task of devising an intervention plan to achieve compliance with Federal requirements stipulated in NCLB and IDEA to address at-risk students. The RtI model was to be executed in all southeastern schools starting in the fall of 2010.

This study is significant because although there is research on the RtI model, little research speaks to the effects on secondary schools and their teachers. Research on expanding teacher-learner outcomes for students and teachers shows how teacher efficacy is developed in education (Nunn & Jantz, 2009). Bandura (1997) noted that when a teacher possesses a high level of efficacy in the classroom, there appears to be an increase

in student performance. In addition, he asserted that this increase may be associated with improvement in teaching skills and concurrent elevation of the teacher's self-efficacy (Bandura, 1997). Research on efficacy has continuously concluded that high teacher efficacy leads to empowerment of positive teacher-student learning interactions, and thus yields positive outcomes for all involved (Bandura, 1997).

Finally, this study is significant because it provided a foundation in line with the model's requirements for secondary teachers while simultaneously enabling the participants to become more comfortable and efficient in their ability to provide interventions to at-risk students. Implementation with fidelity may generate favorable results for the student, the teacher, the administrator, the school, the district, and ultimately the state, which will result in compliance with the federal government, in terms of NCLB and IDEA. Not only will these improvements lead to compliance with federal regulation, they will support positive social change by improving education for at-risk students.

Summary

As education becomes competitive and accountability more prevalent, the national trend to meet the needs of all struggling and at-risk learners is at the fore-front of federal law compliance. RtI is no longer an issue solely for the elementary education level; the model is now also mandated in secondary schools. This study was specifically designed to measure teacher efficacy as it relates to the RtI model on the secondary level.

Section 2 includes an overview of the relevant literature that shaped this quantitative, one group pretest posttest study. Section 3 presents the study's research design. Section 4 consists of the findings, and Section 5 summarizes the findings.

Section 2: Literature Review

Various sources related to RtI and teacher efficacy are reviewed in this section.

The educational research discussed maintains a focus on RtI and its essential components: educational accountability, the impact of educational failure, and implications for educational practice. This section also includes a discussion of the foundational studies on self-efficacy and teacher efficacy. The section presents a review of the scholarship on content teachers' perceptions and attitudes toward teaching at-risk students, and a review of studies examining teacher efficacy and professional development.

School administrators and teachers are under mounting pressure to effectively implement the mandatory RtI initiative. This review explored the literature with regard to RtI and the impact and implications for educators with particular interest in the secondary school setting, for schools in the southeast and schools around the country.

This researcher's search strategy began with the role of educational legislation, the associated impact of accountability and of educational failure, and the specific role of RtI in addressing shortcomings responsible for the lack of adequate yearly progress. The search strategy then moved toward specific research, addressing the need for and use of RtI at the secondary level, as well as how secondary teachers' unfamiliarity with intervention models and levels of teacher efficacy impact intervention implementation and success. Finally, the search included how professional development may serve to offset these issues. The information included in this literature review was compiled using published professional journals and books in the field of education. To locate specific information to shape this research a variety of research databases were utilized,

including: ERIC, the Walden Research Library, and the southeast Department of Education. The following keywords were used to search: *efficacy, teacher efficacy, social cognitive theory, educational accountability, educational failure, professional development, and response to intervention in secondary schools.*

Impact of Educational Failure

In order for students to compete globally, they must meet the same standards and meet academic expectations (Duffy, Giordano, Farrell, Paneque, & Crump, 2008; Klein & Rice, 2014). Public schools in the U.S. are charged with providing effective strategies for addressing the needs of these students, keeping them in school, and improving their academic outcomes. The biggest challenge facing schools is the cost of educating these at-risk students; however, the costs to society of not providing for the educational needs of these students are much greater (U.S. Department of Education, 2010). These costs are incurred by the increasing rate of drop out, which coincides with higher unemployment, increased crime, greater welfare dependency, and decreased earnings (U.S. Department of Education, 2010).

For youth who are not in school or the labor force, research has shown a correlation with increased risk for delinquency and crime, and eventual incarceration (Barnert et al., 2015; Snyder & Sickmund, 1995). It was noted by Snyder and Sickmund (1995) that it costs three times less to educate a student from K-12 than to incarcerate an adult inmate for life. Western, Schiraldi, and Ziedenberg (2003), in a study for the Justice Policy Institute, also reported a significant relationship between low educational attainment and risk for incarceration, particularly within African American communities. Evidence suggests, therefore, that despite the costs associated with educating and

providing for the educational and behavioral needs of at-risk students in the schools, society and public policy must support alternative education and intervention strategies. Alternative education and intervention serve as effective approaches to addressing the needs of these students, as the risks and adverse outcomes for society associated with student failure in school are much greater and longer lasting.

Educational Accountability

Legislation developed in response to the NCLB Act, has placed a demand on improving viable educational options and outcomes for students. NCLB requires an improvement in student achievement (Goodman, 2014; Pascopella, 2002; Tyler, 2003; The White House, (n.d.). Guilott & Parker (2010) stated IDEA has fundamentally changed the way educators view their role in educating all students and the approaches used in the classroom. The delivery of highly effective and successful interventions can help students overcome their most debilitating obstacles (Berliner, 2014; Ciullo et al., 2015; Gerstein et al., 2009). Michael Fullan (1993) stipulated that it is impossible to have a learning society without learning students, and you cannot have learning students without learning teachers. It is vital for all educators to be extremely competent in their academic area to meet the learning needs of the varied student population assigned to their classrooms (Smith, Robb, West, & Tyler, 2010). This, however, has become one of the most challenging tasks for school districts, policy makers, and society in general.

In addition to adhering to NCLB, schools must secure and retain a highly qualified teaching staff, which indicates teachers must possess a bachelor's degree, state licensure/certification, and demonstrate subject area knowledge through passing scores on teaching examinations (Darling-Hammond, Wilhot & Pittenger, 2014; Keller, 2003;

Richard, 2003; Special Education Report, 2003). Even if a school is able to meet the requirements and secure a highly qualified teaching staff, teacher attrition remains an issue with an estimated 9% of new teachers leaving within the first year and roughly 30% of teachers leaving the profession in the first five years (Darling-Hammond, 1999, 2000, 2014). Attracting and retaining highly qualified teachers remains problematic for schools.

Response to Intervention

Southeastern schools are encountering accountability concerns common to school districts across the nation. Schools are held accountable for their students' performance to encourage school improvement (Ahn & Vigdor, 2014; U.S. Department of Education, 2004). The stakes are high for all involved parties because of accountability, global competition, and continuous monitoring. Much of the research on intervention has reviewed only basic skill assessment with few studies measuring summarization, response, or analysis of text (Samuels & Farstrup, 2011). Samuels and Farstrup (2011) also contended that reading difficulties are caused by the lack of appropriate high quality reading instruction. As students move from elementary schools to secondary schools, they face greater demands to read and comprehend text independently. Students who fail to acquire basic skills during their early years often continue to exhibit deficiencies as they progress to the secondary level (Berliner, 2015; Catts, Neilsen, Bridges, Liu & Bontempo, 2015; Miller, Imbrie, & Cox, 2014; Daly et al., 2015; Ehren, 2009). Research has suggested that ideal teaching strategies include activities that are equitable for various types of learners, as students differ personally as well as educationally (Daly et al, 2015;

Lyon, 1997). To continuously fail to treat them as individuals almost guarantees that many, if not all, will not reach their full potential.

According to Popham (2010), there are four levels of the learning progression. The first level begins with a teacher's instructional adjustments. Genuine equity in schools calls for using various means to assist all students in attaining some degree of success. RtI is the current initiative geared to address this endeavor. Methods incorporated by RtI became a focus of attention with inclusion in the IDEIA of 2004; however, RtI is not a special education process, but rather a general education process geared toward assisting all students in achieving grade level proficiency (Berliner 2014; Burns, 2008; Ciullo et al., 2015; Daly et al., 2015; Noltemeyer, Boone & Sansosti, 2014). As such, RtI has been shown to be a particularly effective strategy for assisting students at risk for failure in the general education environment before special education referral and placement (Canter et al., 2008; Catts et al., 2015; Darling-Hammond et al., 2014; Noltemeyer et al., 2014). Given a national focus on student achievement and school accountability, schools are adopting RtI into the general education curriculum (Muoneke & Skankland, 2009; Noltemeyer et al., 2014).

The primary principle of the RtI process is to better student results (Catts et al, 2015; Gresham, 2005; Noltemeyer et al., 2014). It is a process that individualizes instruction for all students. According to Gresham (2005), RtI is a change in behavior or performance as a function of an intervention. In other words, it is a process that highlights how well students respond to adjustments in instruction. According to Reschly and Wood-Garnett (2009), RtI protocol involves: (a) detecting educational gaps (assessment); (b) creating, implementing, and adjusting appropriate interventions; (c)

identifying required intensity; and (d) employing various tiers. Reschly and Wood-Garnett (2009) also contended that this model involves decisions based on available data. Although there are several models based on the RtI approach and I will only examine the one used in my local educational system, Reschly and Wood-Garnett (2009) asserted that the underlying principles remain the same.

RtI is an implementation process for evidence-based instructional strategies designed to enhance student progress in the general education environment prior to necessitating special education services (Canter et al., 2008). By definition:

The RTI process is a multi-step approach to providing services and interventions to students who struggle with learning at increasing levels of intensity. The progress students make at each stage of intervention is closely monitored. Results of this monitoring are used to make decisions about the need for further research-based instruction and/or intervention in general education, in special education, or both (National Center for Learning Disabilities, 2006, p. 1).

Thus, RtI uses constant monitoring through assessment data to provide for evidence-based decision making for adjusting the level and intensity of interventions. According to Gresham (2005), “This logic is not unlike a physician changing the dosage level or type of drug based on the patient's unacceptable response to that drug” (p. 331).

School-based interventions are typically described according to three levels of intervention, which include: universal, selected, and targeted or intensive interventions (Sugai, Homer, & Gresham, 2002). Aligning with this concept, the RtI approach strives to identify and match the intensity of the intervention to the severity of the problem, using a tiered approach to deliver the necessary intensity of intervention. Within the

three-tiered model, students are recommended for more intensive intervention based on their response or lack of response to intervention. A key element in the RtI model is the need for valid and reliable, quality intervention designs (Barnett, Daly, Jones, & Lentz, 2004; Noltemeyer et al., 2014).

The first tier incorporates universal instructional strategies for all students within the regular education setting inclusive of quality general curriculum, school-wide assessments and screening in order to identify at-risk students, research-based instruction, and support for at-risk students within the regular classroom (Canter et al., 2008). The second tier of the RtI approach offers instructional modifications and continued assessment to students not responding to strategies incorporated under the first tier (Canter et al., 2008). More specific interventions, or *targeted interventions*, are delivered, often in small-groups, and progress is monitored closely (Canter et al., 2008). An estimated 15% of the student population will require tier two intervention (Burns, 2008).

Finally, the third tier involves design of intervention that will address the needs of students who continue to fail to respond adequately to intervention at the second tier level (Canter et al., 2008; Gresham, 2005). An estimated 5% of the student population will require the third tier level of intervention (Burns, 2008). Tier three interventions are more intensive and individualized instructional strategies. Students may be referred for special education evaluation from the third tier.

Because RtI is a general education initiative, it is able to support any student at any time by nature of its flexibility and non-dependence on special education personnel, funding, or eligibility requirements (Canter et al., 2008; Noltemeyer et al., 2014).

Although RtI requires collaboration of school personnel, it is able to take advantage of the various skills, talents, and ingenuity of the entire school faculty (Canter et al., 2008). As a result, RtI has shown to be effective in terms of decreased referrals to special education services and higher rates of student proficiency on state examinations (Burns, 2008; Burns, Appleton, & Stehouwer, 2005; Catts et al., 2015; Daly et al., 2015; Noltemeyer et. al, 2014; Windram, Scierka, & Silberglitt, 2007).

RtI at the Secondary Level

RtI has been expanding to the secondary level to address students in middle, junior, or high schools with limited basic skills that put them at risk for dropping out or failure to graduate (Berliner, 2014; Canter et al., 2008; Catts et al., 2015; Ehren, 2009; Muoneke & Shankland, 2009; Noltemeyer et al., 2014). These students did not meet the criteria for being classified as having a learning disorder that would require special education inclusion at the elementary level, but demonstrate deficiencies at the secondary level, which creates a risk for school failure. Some students simply did not demonstrate their academic or behavioral issues until high school (Berliner, 2014; Catts et al., 2015; Miller et al., 2014; Duffy, 2007; Ehren, 2009). Given the evidence for the effectiveness of RtI at the elementary level, educational leaders have sought to expand its use to the secondary level (Muoneke & Shankland, 2009). Joseph Harris, project director at the National High School Center (NHSC) noted,

Over the last five years or more, there's been an increased focus on more rigor, increased graduation rates...higher-level courses. At the same time, there's been this steady progression of students coming up through elementary and middle school who are significantly below grade level or who have specific issues with

literacy and numeracy, and there's been no venue to address that (as cited by Muoneke & Shankland, p. 10).

RtI implementation has demonstrated effects of improved transition from remedial to mainstream settings, increased state assessment scores, declined dropout rates, declined number of referrals to special education, and increased high school graduation rates (Barton, 2008; Berliner, 2014; Burns, 2008; Duffy, 2007; Noltemeyer et al., 2014).

However, implementation at the secondary level is not a matter of simple replication of programs at the elementary levels. RtI at the secondary level presents certain challenges to implementation due to the lack of time for intervention response; staff are limited by the few remaining years the students are in high school, as well as by the scheduling and course structure, which is focused on specialized subject matter learning (Duffy, 2007; Muoneke & Shankland, 2009; Noltemeyer et al., 2014). Although intervention materials and specific strategies may be readily available for literacy intervention, these tools may be lacking in other content areas, such as mathematics, writing, or other areas (Muoneke & Shankland, 2009). The structure of the day for secondary school students may pose an additional challenge to incorporating tier two and three level interventions, as students continually move from one class to another (Muoneke & Shankland, 2009). Despite these challenges, some researchers have offered ideas, such as Burns (2008), who suggested a block scheduling technique to enable intervention during study hall periods.

Barton (2008) suggested that intervention at the secondary school level should remain focused on retention and postsecondary success. Duffy (2007) asserted that RtI shows promise at the secondary level, specifically for programs directly affecting issues

such as transitions and dropout prevention. Special concerns within the tier two and three levels in high school could include (a) academic support such as remedial courses, small-group instruction, additional instruction or tutoring, and study skill instruction; (b) support for graduation through credit recovery programs or state assessment preparation; and (c) behavioral support programs (Muoneke & Shankland, 2009). According to Muoneke and Shankland (2009), “RtI at the high school level can serve as a framework for drop-out prevention and content recovery to ensure that students pass core courses and exams and ultimately graduate” (p. 10).

Educators at the secondary level may not be enthusiastic about implementation of RtI, demonstrating pessimism with regard to ability to help the student at the secondary level (Ehren, 2009). Despite the fact that literacy proficiency is critical for content mastery in secondary education, secondary education teachers may not be well versed in content literacy, as it may not have been incorporated in the secondary teacher’s teacher preparation (Ehren, 2009). In addition, secondary educators may not accept literacy as part of their role as a secondary education teacher, believing that literacy instruction is part of elementary education (Ehren, 2009).

Although these perceptions may exist among secondary educators, RtI can also increase success of teachers in helping students through attention to quality universal instruction (Ehren, 2009). According to Ehren (2009),

Teachers are under enormous pressure to have students meet state standards in specific content areas. In an RTI context, focus on scientifically based instruction means that teachers will be encouraged to examine their teaching practices and to differentiate instruction to enhance student learning. (p. 4)

Ehren further asserted that the RtI method can enable support and remediation for students experiencing limited academic success due to literacy problems without overburdening content teachers. In addition, according to Ehren, “Administrators need to promote a shared responsibility for academic achievement with literacy roots as a school-wide mission and foster a systemic approach to addressing student needs” (p. 4).

In contrast to a system of dependency on individual teachers or programs, RtI promotes collaboration, involving a coordinated and cooperative effort among faculty to provide the needed support for the student as well as increased teacher perceptions of their own efficacy (Berliner, 2014; Duffy, 2007; Ehren, 2009). Duffy (2007) asserted that the success of RtI at the high school level depends on changes in the roles of teachers and the school and classroom culture and ultimately, the extent to which staff are open to those changes. The faculty must be able to collect and interpret the student assessment data, and develop and implement interventions; as such, Duffy stressed the importance of professional development for all school faculty and staff. According to Duffy, “The practices that schools and districts adopt will require ongoing capacity-building and collaboration (Fuchs & Deshler, 2007). However, the approach can result in a more coherent educational experience for all students” (p. 7).

Theoretical Basis of Effective Teaching

Numerous theories such as Bandura’s (1977) social cognitive theory can be used to describe and understand teaching and learning in the classroom. Bandura’s social cognitive theory (SCT) and the associated concepts of self-efficacy and teacher efficacy served as a theoretical framework for the study and the RtI approach (Bandura, 1977-1997; Schwarzer, 2014). The successful implementation of the RtI approach, particularly

at the secondary level, is dependent on the collaboration of teachers and staff and the capabilities of those teachers, both real and perceived. Pas, Bradshaw, Hershfeldt, and Leaf (2010) stated that teacher efficacy impacts teachers' behavior, affect setting goals, and their ability to persevere in tasks.

Social Cognitive Theory (SCT)

Bandura's social cognitive theory (SCT) views human behavior within the perspective of personal interactions, behaviors, and the environment (Bandura, 1977, 1986, 1997; Schwarzer, 2014). The interaction of multiple factors then determines an individual's future behavior. Within the constructs of SCT, prior consequences and experiences serve as predictors for future behavior as well as the regulation of behavior. As such, beliefs are continually shaped by way of one's experience within the environment, including one's perception of one's own capabilities, which are similarly shaped through experience (Bandura, 1977, 1986, 1997; Schwarzer, 2014). According to SCT, one's views of personal abilities and strengths determine behavior based on what one attempts to achieve in addition to the effort put into achieving it (Bandura, 1977, 1986, 1997; Schwarzer, 2014). As a major component of Bandura's social cognitive theory, self-efficacy is defined as a "domain-specific, expectancy-belief construct in which an individual judges whether he/she has the abilities to organize and execute the courses of action that are necessary to attain a specific task" (Roll-Pettersson, 2008, p. 174). As SCT relates to teaching, Bandura (1997) asserted that teachers' personal self-efficacy is reflected in their attitudes toward teaching as well as their efficacy in teaching.

Self-efficacy

Self-efficacy is a person's perception of his/her ability to learn and perform tasks in particular situations (Jean-Baptiste, 2010; Schunk, 2011). Self-efficacy and self-esteem, although quite different, are often used interchangeably (Akande, 2009; Bandura, 1997; Schwarzer, 2014). According to Myers, Willse, and Villalba (2011) self-esteem is correlated to the opinion from others, social networks, and activities. However there is debate on whether self-esteem is stable or changes over time. Zhang, Wang, Li, Yu, and Yan-Ling (2011) contended that the degree to which self-esteem can be influenced is situational and depends on how important the situation is to the individual. Ng, Nicholas and Alan (2010) suggested that "teachers beliefs are the ideas that influence how they intellectualize teaching" (p. 278) and this self-conception is principal to efficacy in teaching. This study focused on the concept of self-efficacy within the context of teaching and learning.

Bandura (1977) introduced the concept of self-efficacy within SCT, relating a self-reflective concept and its relation to individual behavior. According to Bandura, self-efficacy is defined as "people's judgment of their capabilities to organize and execute courses of action required to attain designated types of performance" (Bandura, 1986, p. 391). In addition, Bandura (1986) expanded this definition, describing self-efficacy as a self-reflective concept that relates "not with the skills one has but with judgments of what one can do with whatever skills one possesses" (p. 391). Accordingly, individuals who display high self-efficacy tend to believe in their personal ability to perform a task. An individual with high self-efficacy has a tendency to chase goals with enthusiasm (Lewis, 2011). Ghonosooly and Ghanizadeh (2013) contended that there is a

correlation between high self-efficacy beliefs and job success. In turn, these highly efficacious individuals will tend to work hard to succeed and will tend to persevere in comparison to low level efficacy individuals, who do not demonstrate confidence in terms of their personal belief in their ability to perform the task (Bandura, 1977, 1986).

The self-reflective nature of self-efficacy affects the thoughts, beliefs, and emotions of the individual and as such, influences behavior (Bandura, 1977, 1986, 1997, 2010). The concept of self-efficacy is rooted in the belief of the individual of their personal ability to achieve a particular result or perform a particular task. Self-efficacy is not dependent on the degree of success experienced in the past with regard to the task (Bandura, 1977, 1986); however, experience affects an individual's level of self-efficacy for that task, as self-efficacy is task specific (Ashton & Webb, 1986; Bandura, 1977, 1986; Ross, 1992; Schwarzer, 2014). There are four sources of self-efficacy expectations: mastery experiences, physiological and emotional states, vicarious experiences, and social persuasion (Bandura, 1977, 1986, 1997; Schwarzer, 2014; Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998).

Self-efficacy, as a concept, has been used to explore how beliefs of teachers can influence both teacher and student performance (Ashton & Webb, 1986; Schwarzer, 2014). Ashton and Webb (1986) suggested that personal efficacy beliefs, or expectations, of the teacher are linked both to instructional practices and ultimately to student outcomes. Teacher's self-efficacy is fundamental for an effective school and program (Britto & Butler, 2010). For teachers, the perception of a successful performance (i.e., successful teaching methods or plan) promotes increased levels of efficacy expectations, which in turn promotes continued success (Scheafer, 2010).

However, the reverse is also the case, where negative emotions of anxiety and excitement, or influences of social persuasion or less than positive peer-feedback can affect efficacy beliefs, decreasing efficacy expectations. It is important to note the distinction between skills and beliefs about what one can do as a teacher to affect change in a classroom setting. Bandura (1997) described, “Perceived self-efficacy is not a measure of the skills one has but a belief about what one can do under different sets of conditions with whatever skills one possesses” (p.37).

Teacher Efficacy

Teacher efficacy is a widely discussed topic in literature (Hemric, Shellman & Eury 2010; Lee, Hong-biao, Zhong-hua & Yu-le 2011). According to Bandura (1997), self-efficacy within the realm of teachers’ beliefs in their ability to perform and impact positive change in the students is termed *teacher efficacy*. It is a key component for teachers to plan effective instructional strategies, increase performance, and enhance teacher effectiveness and productivity (Dibapile, 2012). High teacher efficacy has been correlated with positive teacher practices and policies used in the classroom as well as advanced classroom teaching practices (Cho & Shim, 2013). Teachers who perceive their level of self-efficacy to be high, feel that they have the ability and competence to help students (Kelm & McIntosh, 2012). There is a positive correlation between teachers with high self-efficacy and school efficiency (Flores, 2010; Knox & Anafara, 2013; Yin, Lee, Jin, & Zang, 2012).

Teacher efficacy has been described according to two constructs: general teaching efficacy and personal teaching efficacy, which together develop the teachers overall belief in their ability to teach effectively (Gibson & Dembo, 1984, 1985; Schwarzer,

2014; Tschannen-Moran et al., 1998). General teaching efficacy maintains a focus on teachers' personal beliefs about the larger, general relationship of teaching and learning and corresponding outcome expectancy; whereas, personal teaching efficacy represents a general concept of the teacher's own personal effectiveness as a teacher (Bandura, 1997; Schwarzer, 2014; Tschannen-Moran et al., 1998). According to Rajesh and Suganthi (2013), teacher self-efficacy is directly interrelated to their ability to successfully handle challenges or difficulties. According to Muijs & Reynolds (2015) teacher effectiveness impacts students' achievement, and is a primary ingredient in student progress over time. Additionally, they contended, that students taught by ineffective teachers for consecutive years do considerably poorer in both gains and achievement when compared to their peers assigned to effective teachers for consecutive years.

Bandura (1994) discussed teacher efficacy in the context of the organization and the impact of the collective and interactive social system of the organization on both the teachers' perceived self-efficacy and student outcome:

Teachers operate collectively within an interactive social system rather than as isolates. The belief systems of staffs create school cultures that can have vitalizing or demoralizing effects on how well schools function as a social system. Schools in which the staff collectively judge themselves as powerless to get students to achieve academic success convey a group sense of academic futility that can pervade the entire life of the school. Schools in which staff members collectively judge themselves capable of promoting academic success imbue their schools with a positive atmosphere for development that promotes academic

attainments regardless of whether they serve predominantly advantaged or disadvantaged students. (Bandura, 1994, p. 78)

However, prior research has questioned the validity of the personal and general teaching efficacy distinctions, particularly critical of the general teaching efficacy concept and measure (Tschannen-Moran et al., 1998).

Competence or teaching efficacy and confidence or personal efficacy beliefs both equally enhance teacher motivation (Ahmad, 2011). Collective teacher efficacy is directly related to school effectiveness (Cooper, 2010). Research on personal teacher efficacy has demonstrated that teaching efficacy, or teachers' perception of their teaching competence, indeed has an impact on student achievement (Ashton & Webb, 1986; Dembo & Gibson, 1985; Ross, 1998; Ross & Bruce, 2007; Schwarzer, 2014; Soodak, Podell, & Lehman, 1998; Tschannen-Moran & Hoy, 2001; Tschannen-Moran & Hoy, 2007; Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998). Also teacher efficacy and its impact on both teacher and student tends to be cyclical in nature; according to Tschannen-Moran et al. (1998):

Greater efficacy leads to greater effort and persistence, which leads to better performance which in turn leads to greater efficacy. The reverse is also true...

Thus, a teacher performance that was accomplished with a level of effort and persistence influenced by the performers' sense of efficacy, when completed, becomes the past and a source of future efficacy beliefs. Over time this process stabilizes into a relatively enduring set of efficacy beliefs. (p. 234)

A teacher's sense of efficacy is created through the interaction of a variety of factors. Ashton (1984) provided eight dimensions, which form a teacher's sense of

teacher efficacy. These dimensions include (a) a sense of personal accomplishment in which the work is seen as meaningful and important, (b) positive expectations for student behavior and achievement, (c) acceptance of accountability for student progress and success, taking personal responsibility for student learning, (d) strategies in terms of learning/teaching plans, goal setting, for achieving objectives, (e) an overall positive affect in that the teacher enjoys and feels good about self, others, and students, (f) a sense of control over the student outcomes, believing that he or she he can influence student learning, (g) a sense of common teacher/student goals, and (h) involves students in a democratic decision-making process to develop mutual goals and strategies (Ashton, 1984).

According to Harris and Sass (2011), elementary and middle school teacher efficiency increases with knowledge (informal on-the-job training). Teachers with a high score on these eight dimensions have high teacher efficacy and have a tendency to see all students as teachable, inclusive of students with disabilities or special needs (Ashton, 1984). Teachers exhibiting high self-efficacy scores tend to have some common characteristics, according to Ashton and Webb (1986), such as organizational skills, curriculum planning, and enthusiasm for the students and classroom. In addition, these teachers tend to demonstrate greater levels of confidence in the classroom enabling them to be more open to trying new methods of teaching or new ideas to enhance student learning (Allinder, 1994). In contrast, teachers demonstrating a low level of efficacy tend to correlate learning difficulties in their students with low ability (Frase, 2006). Additionally, low teacher efficacy is a crucial factor for teacher and student, which can ultimately lead to school failure (Gokce, 2010; Seniwoliba, 2013). According to Bandura

(1997), “The task of creating learning environments conducive to development of cognitive competencies rests heavily on the talents and self-efficacy of teachers” (p. 240).

Research has explored the relationship between teacher efficacy and instruction (Allinder, 1994; Schwarzer, 2014). Allinder (1994) examined the relationship between teacher efficacy and level of instructional experimentation of the teacher, as well as characteristics of organization and planning. Allinder concluded that a significant positive correlation exists between efficacy and the variables of instructional experimentation, organization, and planning.

The literature related to teacher efficacy has suggested that a teacher’s confidence in their ability to educate effectively is strongly linked to their outcome expectations, their perceived ability to influence student learning, and their own personal efficacy. Tschannen-Moran et al. (1998) described an integrated concept of teacher efficacy as “the teacher's belief in his or her capability to organize and execute courses of actions required to successfully accomplish a specific teaching task in a particular context” (p. 233). Ashton and Webb (1986) found that high and low efficacy teachers react differently with students in how they teach. It is believed that high efficacy teachers will hold their students more accountable for their performance and insist they attempt challenges and problems, viewing it their responsibility to have their students learn. When student do not achieve the desired outcomes, they participate in self-reflection about their role in the failure to inform future practice.

High efficacy teachers tend to exhibit positive attitudes and higher confidence levels; they feel good about teaching and about themselves because they are confident of their positive influence on students’ learning (Brown, Welsch, Hill, & Cipko, 2008). The

study by Brown et al. (2008) explored the effects of embedding special education instruction into pre-service general education courses, thereby providing mastery experiences to new teachers. Brown et al. reported that embedded instruction increased teacher candidates' knowledge and assessment adaptations, improving confidence levels with regard to meeting the needs of students with disabilities. In contrast to teachers demonstrating high levels of self-efficacy, the teacher with a low sense of efficacy tends to feel frustrated and discouraged and may expect students to fail (Ashton, 1984; Brown et al., 2008; Schwarzer, 2014). Maume, Rubin, and Brody (2013) contended that teachers' lack of self-efficacy can adversely impact educational institutions. These teachers with low self-efficacy often have negative perceptions of their own ability, placing the responsibility to learn on the student. Given the non-success of students, a low efficacy teacher may tend to seek reasons for the lack of success, such as background, motivation, and attitudes (Ashton, 1984). Ashton (1984) found low efficacy teachers to be less goal oriented, have fewer teaching strategies, and tend to have a lack of success expectation in terms of both the student success as well as personal teaching success (Ashton, 1984). In a similar way, findings given by Deemer (2004) confirmed the results of Ashton, noting that low efficacy teachers may have trouble working with students with disabilities due to lack of self-belief in their own abilities, whereas the high efficacy teachers tend to find ways to teach all children.

When a teacher demonstrates high expectations and efficacy for their students, the students will expect more from themselves (Troia & Maddox, 2004). Through an analysis of middle school level writing instruction from the perspectives of special and general education teachers via focus groups and rating scales, Troia and Maddox (2004)

found that both special and general educators had positive views of their teaching efficacy, and that both groups were strongly influenced by their teaching context. Troia and Maddox went on to identify factors perceived to negatively impact teacher efforts to develop and implement interventions based on writing instruction. These identifying factors included, (a) the need to teach excessive content, (b) oversized classes (i.e., too many students), (c) student diversity with variation in terms of student ability level, (d) lack of student motivation, (e) barriers to successful inclusion and meeting the educational needs of students with disabilities in the general education classroom, and (f) poorly developed or poorly aligned curricula (Troia & Maddox, 2004). The study demonstrated the relevance of teacher efficacy to student outcomes and concluded that barriers to successful inclusion of student with disabilities negatively impact teacher efforts to deliver effective writing instruction.

Research suggests the impact of teacher efficacy on teacher attitude toward students, particularly students who are at-risk for failure or those with learning disabilities. Teacher attitudes and perceptions directly affect teacher behavior toward students (Pajares, 1992). Research also suggests that many teachers demonstrate low efficacy for intervention, differentiated instruction, and meeting the needs of diverse learners (Bradshaw & Mundia, 2006). Although data demonstrate a predominance of low teacher efficacy among general education teachers related to teaching students with learning disabilities, teachers with relatively high teacher efficacy exhibit more positive attitudes with regard to teaching these students (Bahar, 2004; Brownell & Pajares, 1999; Dembo & Gibson, 1985; Schwarzer, 2014; Wood, 2007). In addition, teachers who have had opportunity to participate in professional development, training, or other experience

in special education demonstrate increased levels of confidence and efficacy, serving to reduce concern and promote positive attitudes toward intervention and inclusion programs (Bradshaw & Mundia, 2006; Subban & Sharma, 2006).

Teacher attitudes are reflected in their expectations for the students and can have a direct influence on student performance (Sadler, 2005). Positive teacher attitudes and commitment are considered to be important factors in intervention strategy success (Jull & Minnes, 2007; Weiner, 2003). “When knowledge and practice become internalized and energized by a personal commitment to ensure that all students learn well, teachers may have their greatest influence on student outcomes and school culture” (Weiner, 2003, p. 18). Thus, being able to assess teacher efficacy is a crucial first step toward maximizing the educational potential implicit in the RtI approach.

Various external factors impact teachers’ self-efficacy, including resources and support offered to teachers, especially in the form of leadership and professional development. According to Woolfolk Hoy and Burke-Spero (2005), “Teachers make efficacy judgments, in part, by assessing the resources and constraints in specific teaching contexts” (p. 344). Teacher resources, inclusive of elements such as administrative leadership support, co-worker support, and professional development resources, can serve as “social persuasion,” affecting teachers’ perceptions with regard to their ability to perform (i.e., teach), which when positive, can increase self-efficacy/teacher efficacy (Bandura, 1997; Woolfolk Hoy & Burke-Spero, 2005).

Improving a person’s perceived self-efficacy will significantly increase the likelihood of achieving desired results and motivation for individual efforts (Barouch, Adesope, & Schroeder 2014). External factors, therefore, impact teacher efficacy

development, teacher attitudes toward teaching, and student outcomes (Ashton & Webb, 1986). According to Ashton et al. (1984), “Our study of teacher efficacy beliefs indicates that the extent to which teachers believe they are capable of influencing student performance affects their enthusiasm and persistence in working with their students and ultimately their students’ achievement” (p. 11). Teachers with higher self-efficacy perceptions tend to demonstrate greater effort, persistence, enthusiasm, and confidence (Ashton, 1984; Ashton & Webb, 1986). For example, teachers with a higher sense of efficacy may be less critical of students and more likely to persist in assisting struggling students, not make referrals to special education as quickly (Ashton & Webb, 1986; Ciullo et al., 2015; Gibson & Dembo, 1984); whereas low efficacy teachers demonstrate less persistence and are less likely to employ various or novel teaching strategies in order to address the needs of all students (Ashton & Webb, 1986).

As teacher efficacy relates specifically to RtI, Nunn, Jantz, and Butikofer (2009) found elements on the teacher efficacy beliefs and behaviors scale (TEBBS) to be correlated to elements on the indicators of RtI effectiveness scale (IRES). Nunn et al. (2009) concluded that teacher efficacy scales related to instructional methods efficacy, motivational methods efficacy, and external control efficacy were correlated with RtI effectiveness scale factors of effectiveness of interventions, satisfaction with RtI results, collaborative teaming and intervention, and data-based decision-making. Nunn et al. concluded,

A consistent finding of this study indicated that increases in teacher efficacy were associated with perceptions of improved outcomes of intervention, satisfaction with results, collaborative team process, and data-based decisions. This is

relevant given the interest and expenditures of material and human resources in establishing this model in schools. (para. 11)

These correlations are aligned with previous literature on teacher efficacy and student outcomes.

It is essential that teachers believe in themselves, their abilities, and their students in order to contribute to successful student outcomes and educational reform. As previously noted, research has demonstrated the relationship between teacher perception of personal teaching efficacy and student achievement; however teacher perception of personal efficacy within the influence of the school system can be affected by leadership and professional development, among other factors. Schools try to improve teacher skill, experience, and therefore efficacy through use of professional development experiences (Miller et. al, 2014; Darling-Hammond & McLaughlin, 1995; Schwarzer, 2014).

Building Teacher Efficacy

Teacher subject knowledge exerts a measurably substantial influence on student achievement (Metzler & Woessmann, 2012). The influence of teacher efficacy on student outcomes suggests the importance of defining mechanisms to build teacher efficacy. As previously mentioned, teacher efficacy is affected by various external factors as well as experience (Aloe, Amo, & Shanahan, 2014; Tschannen-Moran et al., 1998; Schwarzer, 2014; Woolfolk-Hoy & Burke-Spero, 2005). Bandura (1986) stated, “Perceived self-efficacy results from diverse sources of information conveyed vicariously and through social evaluation, as well as through direct experience” (p. 411) and that these sources of information “must be processed and weighed through self-referent thought” (p. 21). Schools can attempt to improve teacher efficacy through increased support and increased

experience through professional development (Aloe et al., 2014; Darling-Hammond & McLaughlin, 1995). Leadership support and professional development may be critical to developing stronger teacher efficacy.

The critical nature of support in development of teacher efficacy can be seen when looking at new teachers, who may exhibit low teacher efficacy due to lack of experience. Woolfolk Hoy and Burke-Spero (2005) contended that adequate support for teachers in the first few years of teaching is essential to the development of teacher efficacy. First year teachers who believed they had adequate support from colleagues and administration tend to be more confident in themselves and their teaching ability, whereas those who did not perceive to have been provided adequate support tend to be less confident (Burley, Hall, Villeme, & Brockmeier, 1991).

Tschannen-Moran et al. (1998) developed an integrated model of teacher efficacy incorporating Bandura's (1986, 1997) SCT and the major influences on efficacy beliefs, which include mastery experiences, vicarious experiences, social persuasion, and physiological or emotional arousal. Of these four sources of efficacy developing information, mastery experiences are considered to have the strongest influence on efficacy, providing a mode of direct feedback with regard to teacher ability and capability. SCT also suggests the impact of vicarious experiences on efficacy (Bandura, 1977, 1986, 1997).

However, it is noted that all successful experiences do not necessarily contribute to increased efficacy development, as according to Bandura (1997), the feedback provided through the experience is affected by interpretation of the individual. Similarly, social persuasion and emotional feedback obtained from experiences of social

interactions can also serve to increase or decrease teacher efficacy (Bandura, 1977, 1986, 1997; Schwarzer, 2014; Tschannen-Moran et al., 1998). Bandura (1997) noted the need for “compelling feedback that forcefully disrupts the preexisting disbelief in one’s capabilities” (p. 82) in order to affect positive self-efficacy change. While preservice and new teachers seem to be amenable to changes in efficacy (Hoy & Woolfolk, 1990), more experienced teachers tend to be relatively resistant to efficacy change (Tschannen-Moran et al., 1998).

Adequate teacher and intervention specific training can increase teacher efficacy, thus improving student outcomes resulting from an intervention (Ross, 1994). Ross (1994) examined the impact of cooperative learning techniques on general teaching efficacy. Ross found a general increase in general teaching efficacy after eight months of cooperative learning training; however, personal teaching efficacy remained stable in that time. Ross suggested that these results reflect the difficult nature of affecting personal teaching efficacy due to the fact that it is an internal belief about one’s personal ability and is affected by experience and time. Further, long-term professional development may be necessary to enable critical thinking with regard to teachers’ classrooms and behaviors associated with instructional improvements (Ross, 1994).

One such long-term collaborative professional development process is participatory teacher research, which promotes critical classroom examination and development, implementation, and evaluation of intervention programs (Berliner, 2014; Cochran-Smith & Lytle, 1999; Knight & Boudah, 1998; Noffke, 1997). Participatory teacher research allows for active teacher involvement in developing practical teaching knowledge and evidence-based action, supporting self-efficacy development according to

principles of SCT (Bandura, 1997). Henson (2001) explored a yearlong participatory teacher research initiative and its associated effect on teaching efficacy. Henson found significant effects on both personal and general teaching efficacy using a quantitative pretest posttest approach. Collaboration was found to be predictive of increased general teaching efficacy, which reflects teacher perceptions of whether teachers in general can overcome barriers providing successful teaching and intervention.

Professional Development

Effective professional development is vital to school success and provides ongoing learning activities for educator (Wildman, 2015). In order to understand the impact of general, or collective, teacher efficacy, a construct depicting teachers' beliefs about the capability of their school's faculty for successfully educating its students, "it is necessary to understand that teachers' shared beliefs shape the normative environment of schools" (Goddard, Hoy, & Hoy, 2000, p. 502). In order to explain the demonstrated positive relationship between collective teacher efficacy and student achievement, Goddard et al. (2000) expressed that collective teacher efficacy influences the effort and persistence of teachers individually. Therefore, Goddard et al. suggested that school administration can achieve improved student outcomes by working to increase the collective efficacy of the faculty through "thoughtfully designed staff development activities and action research projects...[to] provide efficacy building mastery experiences" (p. 502).

Similar to the conclusions of Goddard et al. (2000), Fullan (2007) indicated the importance of the collective nature of teaching improvement, stressing that improvement is not isolated to each individual teacher; rather, it is the job of the entire learning

community to assist in the improvement of teacher teams to promote improved student outcomes. According to Smylie (1988, 1990), the relationship between professional development and self-efficacy lies in that personal teacher efficacy can serve as “a professional filter through which new ideas and innovations must pass before teachers internalize them and change their behaviors” (p. 148). Smylie asserted that school leadership and support for professional development experiences tend to have a generally positive effect on teacher adaptation, change, and development. In its report to improve student learning, the National Council for Accreditation of Teacher Education (2010) called for field-based experiences that combine content and practice. Developing knowledgeable teachers who are confident in their ability to teach all of their students is of growing importance especially with the implementation of the Common Core State Standards (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). This quest is specifically difficult for secondary teachers who are charged the task of motivating and teaching adolescent students.

Teacher leadership has expanded interest in recent years by which educational reform and instructional improvement can be accomplished through continuous, site-based professional development for teachers (Poekert, 2012). With increased accountability for schools and teachers to meet the student achievement goals required by the NCLB legislation and the Elementary and Secondary Education Act reauthorization, professional development has come to the forefront of efforts for educational improvement (Ahn & Vigdor, 2014; Dede, Ketelhut, Whitehouse, Breit, & McCloskey, 2009; Goodman, 2014). While research has suggested professional development as a means to improve teacher efficacy, one administrator demonstrated the positive effects

professional development had on teacher efficacy stating, “Teachers gained a new level of confidence in the classroom and comfort with reform, which translated into a better climate and, most important, improved student achievement” (“Linking staff development to student learning,” para. 2). The article also noted the importance of schools being learning communities for students, teachers, administrators, staff, and all stakeholders.

The advantage of the RtI approach lies in the continuous assessment process, data from which can be used to guide the selection and implementation of staff development opportunities focused on areas in need of improvement and ensuring efforts are having a positive impact on all students in terms of achievement. Although self-efficacy seems to be a construct suitable for qualitative study, as it is focused on revealing the beliefs and perceptions of the individual, many studies have utilized the teacher efficacy scale (Schwarzer, 2014; Tschannen-Moran et al., 1998) to evaluate teachers’ beliefs and self-efficacy; this scale is quantitative in nature as it incorporates use of the likert scale. Therefore, a quantitative approach that incorporates the use of the teacher efficacy scale can offer a means to compare efficacy scores on a timeline from prior to professional development participation to after participation in the professional development program. This would offer a picture of teacher efficacy related to RtI implementation and the impact of professional development on teacher efficacy.

Canter et al. (2008) described elements common among effective RtI programs. These elements include administrative support, systematic data collection, staff support and training, parent support and involvement, understanding of legal requirements, realistic time line, strong teams, integration with existing scheduling, and coordination of

existing intervention programs. These elements highlight the potential benefits of professional development training, collaborative teaching environments, and leadership support in the implementation of RtI. Canter et al. asserted successful RtI relies on both ongoing professional development and collaboration of staff and families in addition to high quality instruction, evidence-based and individualized student service, and consistent and continuous evaluation of students and outcomes.

Summary

Relevant literature on the impact of educational failure; educational accountability; RtI; theoretical basis of self-efficacy in teaching; and professional development were explored. As a response to increased accountability demands, implementation of RtI strategies has been supported state-wide for public schools in the southeast. Although these intervention strategies support the need to address the needs of diverse learners and the ability to provide for the educational needs of all students, teacher efficacy within the RtI approach may reduce development and effective implementation of the programs. This review provided available information from literature as it pertains to SCT and the associated constructs of self-efficacy and teacher efficacy and the impact on education and intervention.

A strong positive teacher efficacy creates more positive attitudes toward intervention and motivates teachers to persist in educating and problem solving to successfully teach every child, regardless of obstacles (Bandura, 1997; Jull & Minnes, 2007; Sadler, 2005). The construct of professional development was specifically reviewed as a means to improve teacher efficacy, especially as it relates to implementation of RtI strategies and ability to provide for the educational needs of all

students. Section 3 will discuss the methodology selected to achieve the goals of the study.

Section 3: Methodology

Johnson and Christensen (2008) contended that quantitative studies view research using a narrow lens and test a specific hypothesis. The purpose of this quantitative study was to obtain an understanding of self-efficacy related to implementation of the RtI model and the impact of professional development on intervention development and implementation. The goal of the current study was to examine teachers' perceptions of self-efficacy (teaching efficacy) to perform as needed within the RtI model. The study participants consisted of teachers from a Title I secondary school within a Southeastern Public Schools district. To accomplish the goal of the study, a minimum sample of 38 secondary school teachers was sought for participation in a professional development program and quantitative teacher efficacy survey evaluation.

This section provides a discussion of the research design used for the study. The section includes the procedures and rationale for the selected research design, as well as the population and sampling frame. The section also outlines the research questions, the data collection process, and the data analysis plan. The instrumentation and validity and reliability of the study are also discussed. The section concludes with a brief summary.

Research Question and Hypothesis

The following research question was developed for the purposes of the study, maintaining the focus on teacher efficacy beliefs with regard to the RtI model.

RQ: What effect, if any, does explicit training in the form of professional development on the RtI model have on the perceived self-efficacy of core subject area secondary teachers?

From this research question, the following null and alternative hypotheses were formed:

H₀: There is no significant difference in perceived self-efficacy from pretest to posttest among secondary core subject area teachers who received training in the form of professional development on the RtI model.

H_a: There is a significant difference in perceived self-efficacy from pretest to posttest among secondary core subject area teachers who received training in the form of professional development on the RtI model.

The hypothesis was investigated with a paired samples *t*-test. The independent variable was training in the form of professional development on the RtI model. The dependent variable was perceived self-efficacy as measured by the TES-S (Hoy & Woolfolk, 1993).

Research Method and Design

A quantitative research approach was employed to examine the teachers' efficacy beliefs and the effect of RtI professional development program on these beliefs. To achieve the goals of the study, a one group pretest posttest design was used, incorporating analysis of TES-S pretest posttest survey data. The following sections include a discussion of the research method and design, and the appropriateness of the design for the study.

Research Method

A quantitative research method was selected for the purpose of the study because it provides the ability to compare variables of interest to determine whether there are significant statistical relationships (Cozby, 2009). The present study explored current levels of teacher efficacy beliefs related to the implementation and use of the RtI model and the associated changes in teacher efficacy resulting from professional development

utilizing data for a pre- and postsurvey. Creswell (2009) contended that quantitative researchers explore relationships between variables they seek to understand, often times using surveys to detect these relationships. According to Dana and Yendol-Hoppey (2009) surveys are a typical avenue used to collect information on a person's knowledge. Therefore, the quantitative research method was selected because the goal of this study was to explore an association between two variables (teacher self-efficacy and program participation). Because the present study was designed to specifically measure the self-efficacy attitudes of a sample of teachers using a survey instrument both before and after participation in the professional development in the RtI model, quantifying the changes resulting from the program, a quantitative method was used for the study.

Research Design

Research design is a guide for determining which questions are vital, which data are considered significant and should be collected, and the manner in which the findings should be examined in the research (Ader, Mellenbergh, & Hand, 2012). Ader et al. (2012) also contended that the best design depends largely on the research question as well as the orientation of the researcher. In the current quantitative study, the focus was on examining the self-efficacy beliefs of teachers (teaching efficacy) related to the implementation of the RtI model and the effect of professional development specific to the RtI model on the same teachers' efficacy after participation. Using a single sample of teachers from a single secondary school who participated in the teacher training/professional development on the RtI model, the study incorporated a one group pretest posttest design (Balkin, 2008) to gather the appropriate data to answer the research question of the study. The design for this study lacked the inclusion of a control

group. In a one group pretest posttest design, a single group of participants was studied to determine baseline scores (prior to treatment), given a treatment, and then reevaluated (posttest). The pre and posttest scores of this single sample were then compared. Because the goal of the study was to identify if a difference in self-efficacy was noted among teachers after participation in the professional development program, the one group pretest posttest design was appropriate as it enabled the researcher to state whether a change in the outcome or dependent variable has taken place (Balkin, 2008).

Treatment: Professional Development

The initial professional development on the RtI model was conducted on a district-wide teacher-planning professional-development day. This is a day where teacher attendance is mandated. The training took place in the study school. A Curriculum support specialist (CSS) from the district conducted the teacher training.

Once the pretest survey was distributed and collected, an overview of the three tiers was reviewed where each tier defines the level of intensity. Based on the training as outlined in the State's Implementation Plan (Florida Department of Education, Bureau of Exceptional Education and Student Services, 2008), the implementation of RtI consists of three tiers. Tier 1 is applied to all students in all settings; Tier 2 is to provide additional support and supplemental instruction for targeted students; and Tier 3 involves intensive intervention to targeted students. The interventions are individualized and use a problem-solving process.

While students who require Tier 3 interventions may qualify for special education, the purpose of RtI is not to identify students with a disability, but rather to identify and effectively implement a process that works best for all students (groups and

individual), especially prior to identification. The interventions are on a fluid continuum because the students' need dictates the level of intervention and/or instructional support (Florida Department of Education, Bureau of Exceptional Education and Student Services, 2008).

The professional development and implementation period lasted for five weeks. The initial professional development lasted an entire school day, approximately 7 hours. The first survey was completed prior to the training and took approximately 5 – 10 minutes. Numeric identifiers were created for each participant and included on the surveys (for matching/data collection purposes). Both pre and post surveys (with numeric identifiers) were placed in a bright colored folder and randomly selected from a table as the participants entered the training. The participants completed and submitted the pre-program survey and retained the second survey (post-program) in the bright colored envelope to complete 20 days after the initial training.

At the conclusion of the professional development session, the teachers reviewed the data concerning their students and began to implement the necessary interventions. The next step was for the participants to complete the post-program survey 20 days after the initial training which took approximately 5 – 10 minutes to complete.

Population and Sampling

The study participants consisted of teachers from a Title I secondary school within the Southeastern Public Schools district. The enrollment of the school at which these participants work consists of 1,869 students. The race/ethnicity of students at the school is 99% Hispanic. Eighty-nine percent of the students are economically disadvantaged, receiving free or reduced price lunches. Ninety-three percent of the

teachers at this school are also Hispanic. Certificated staff consists of 80 teachers. The secondary school has consistently achieved a high performing status, receiving an A+ rating for the past four years, but failed to meet the adequate yearly progress criteria in reading.

The study utilized a convenience sampling method based on volunteers. Convenience sampling is a non-probabilistic sampling method for which the researcher selects the particular research locations and participants to increase the probability that they will be able to provide the information necessary to answer the research questions of the study (Creswell, 2005). The participants are teachers in the selected school and therefore represented a cross-section of teachers who teach in the southeastern public schools district in which the RtI model has been mandated.

Given the relatively recent implementation requirement for RtI, the study school presented an opportunity to explore the implementation process, the perceptions of teachers with regard to their personal efficacy in the RtI model, and the actual effect of professional development on teacher efficacy.

The sample was drawn from the population of teachers at the selected school ($N = 80$). A G*Power analysis (Faul, Erdfelder, & Buchner, 2007) was conducted to determine the sample size necessary to achieve valid and reliable results. This sample size calculation was conducted for a paired sample t -test to compare means, using a two-tailed result, a Cohen's d of 0.50 (medium effect size), an alpha of .05, and a power of 0.85. As a guideline, a respectable value for the power of the experiment would be between 0.80 and 0.90 (Kuehl, 2000), which would provide evidence for any variance from the null hypothesis (i.e., the ability to reject a false null hypothesis). The result indicated the

need for a sample of 38 teachers ($n=38$), which would correspond to a 47.5% response rate among the population of 80 teachers at the school. The actual sample obtained included a total of 51 teachers who participated in the professional development and completed both the pretest and posttest surveys for inclusion in the study.

The study school has 73 core subject area teachers and 7 elective teachers. The core subject area teachers (math, science, social studies, reading, and language arts) were asked to participate in the teacher efficacy survey both before and after participation in the RtI professional development program. The population and sampling of core subject area teachers at the school presented a high probability of obtaining participants who would be representative of the overall population of teachers working at the school. Participants for the study were sought through a written solicitation communication through the school office teacher mailboxes, via electronic communication and prior to beginning the professional development session.

Informed Consent and Confidentiality

Prior to conducting the survey, participants in the study received a letter of informed consent, which they were asked to read. The informed consent included the purpose of the study, a description of the pre- and post-survey process, identification of whom would view the data collected, identification of any risks associated with the study, identification of the time commitment needed for survey involvement, a discussion of the levels of confidentiality as a participant, and the option to withdraw from participation at any time. An overview of the RtI professional development, including its purpose and intended outcome was also discussed. By reading the informed consent and completing the pre and post survey indicated their agreement to participate in the study, the

participants demonstrate awareness of their rights and involvement in the study (Neuman, 2003). Participants were given the opportunity to withdraw from the study at any time.

Confidentiality is a highly important responsibility of the researcher when conducting a research study (Neuman, 2003). Confidentiality is the process of holding personal information of participants in confidence without disclosure to the public (Neuman, 2003). Participants were notified that no signatures or identifiable information would be collected to ensure confidentiality.

Anonymity of survey responses was supported through the creation of personal numeric identifiers for each participant in the study. No signatures or identifiable information for participation were required. Consent was understood through participation after participants reviewed the informed consent form. The researcher did not know who participated or their survey responses. Numeric identifiers were created on the surveys for the purpose of matching data collected on pre and post surveys. Participants were asked to complete and submit the pretest and retain the second survey (posttest) for submission 20 days after the professional development session. No demographic data was collected to protect the identity of the participants.

Instrumentation

The instrument for this study included the TES-S (Hoy & Woolfolk, 1993) (Appendix A), which was used to gather data from the participants. The survey instrument was used to assess teacher efficacy related to RtI both before and after the professional development session; therefore, the survey was given twice, initially prior to the start of the RtI professional development program and again 20 days after completion of the professional development program. The selected instrument, the TES-S, consists

of 10 questions using a six-point Likert-like scale for responses. The scale is as follows: 1 = strongly agree, 2 = moderately agree, 3 = agree slightly more than disagree, 4 = disagree slightly more than agree, 5 = moderately disagree, 6 = strongly disagree.

Data Collection

The researcher contacted the school system county office to seek permission to conduct the study and completed a research proposal application for district approval. After receiving approval from the district, the researcher contacted the principal at the school to seek permission to conduct the study. Upon receiving school district, school principal, and university IRB approval, the researcher initiated recruitment of participants.

The researcher sent an introductory letter to potential participants, which identified the purpose of the study and asked for voluntary participation to assess the effect of the professional development on teachers' sense of self-efficacy in the RtI model. Participation in this study was voluntary, and there was no payment given to respondents for their participation. Special precautions were established to support anonymity of the responses, as noted previously, and there was minimal risk of psychological stress to participants during the study. However, participants were reminded that they were allowed to stop at any time during the survey if they felt stressed.

The collection of data for this study included Likert-scaled survey data collected from pre- and post- program surveys. The survey was given prior to initiation of the RtI professional development program and again after completion. Each participant received a numeric identifier. As such, individual surveys were numbered for participant

identification to ensure the matching of pre and post-program data for each individual participant. No signatures/or identifiable information for participation was required. Both the pre and post numbered survey were included in the initial packet received by the participants at the beginning of the program. Instructions were given at the appropriate times for participants to complete the pre and post survey instruments.

The numeric identifiers were created on the surveys (for matching/data collection purposes) and placed in a folder and randomly picked up from a table as participants entered the training. Participants were asked to complete and submit the pretest and retain the second survey (posttest) for submission 20 days after the professional development session. Surveys were placed in a bright colored envelope to lessen the likely hood of misplacement. Survey data was then collected, and put into Microsoft Excel®. The Excel file was then imported into IBM SPSS® statistical software for quantitative analysis.

Validity and Reliability

Validity is based on determining whether the findings are accurate from the standpoint of the researcher, the participant, or the readers of an account, whereas reliability indicates that the approach is consistent across different researchers and projects (Creswell, 2005, 2007). Reliability and validity are therefore used to evaluate the instrument as a measuring tool (Creswell, 2009). The instrument for assessing teacher efficacy, the TES-S, has been used and tested as a reliable and valid instrument (Hoy & Woolfolk, 1993). According to Hoy and Woolfolk (1993), the TES-S was adapted from the original Teacher Efficacy Scale (Gibson & Dembo, 1984). The short form contains five personal teaching efficacy items and five general teaching efficacy

items (Hoy & Woolfolk, 1993). “These items were selected because they had the highest factor loadings in the earlier research (Hoy & Woolfolk, 1993, p. 361). Alpha coefficients of reliability were reported as .77 for personal teaching efficacy and .72 for general teaching efficacy (Hoy & Woolfolk, 1993). These scores demonstrate the instrument to be valid and reliable and permission to utilize the instrument has been granted.

Data Analysis

Comparison of the pre- and post-test scores was used to measure any significant efficacy mean gains made by teachers as a group. The mean, standard deviation, and range were used to describe the levels of personal and general teacher efficacy both prior to and after completion of the designated RtI professional development program.

Because the Likert scale variables can be operationalized as continuous by using a sum or average of the scores received from each item on the questionnaire, a *t*-test was used to compare the summed or averaged scores of items related to both personal teaching efficacy and general teaching efficacy and the independent variable of professional development to evaluate the null hypothesis. The paired sample *t*-test measures differences between two means of the same group of participants or measures the differences between two groups of participants that are otherwise matched or paired on some variable. The researcher’s goal was to determine if significant differences exist between pre and posttest efficacy scores after a training intervention. The assumptions of the *t*-test are that the differences from the pair of data are normally distributed and that the data are on at least an interval scale of measurement. SPSS® Statistical software was used to assist in the calculations of the statistics.

Conclusion

Section 3 discussed the research methodology employed in the study. The current study employed a quantitative, pre-experimental one group pretest posttest research design. Section 3 included the description of how the data were collected and analyzed, as well as information on the appropriateness of the research design of the study. Section 4 clearly establishes the strategy of the study, describes the systems used for record keeping, and reports and describes the results/findings of the study, incorporating tables and figures of the data. The interpretation of findings, implications for social change, recommendations for action, as well as a summary are presented in section 5.

Section 4: Data Analysis

The purpose of this study was to obtain an understanding of teacher self-efficacy related to implementation of the RtI model and the impact of professional development on intervention development and implementation. The goal was accomplished through an examination of teachers' perceptions of teaching self-efficacy to perform as needed within the RtI model. The sample consisted of teacher participants recruited from a single Title I middle school within the Southeastern public school district in which there has been a recent implementation requirement for RtI, allowing for an examination of the teachers' efficacy in the RtI model, and the effect of professional development on teacher efficacy. A total of 51 participants were recruited, participated in the professional development, and completed both the pretest and posttest required for inclusion in the study. To protect participant confidentiality, participant demographic information was not collected.

The research question of the study was:

RQ: What effect, if any, does explicit training in the form of professional development on the RtI model have on the perceived self-efficacy of core subject area secondary teachers?

From this research question, the following null and alternative hypotheses were formed for statistical analysis:

H₀: There is no significant difference in perceived self-efficacy from pretest to posttest among secondary core subject area teachers who received training in the form of professional development on the RtI model.

H_a: There is a significant difference in perceived self-efficacy from pretest to posttest among secondary core subject area teachers who received training in the form of professional development on the RtI model.

To test the hypothesis, descriptive statistics and paired sample *t* tests were used to examine differences in efficacy scores between the pretest and posttest data obtained from the 51 participants. The independent variable was training in the form of professional development on the RtI model and the dependent variables included teaching efficacy, as measured by the 10-item TES-S (Hoy & Woolfolk, 1993). The Teacher Efficacy Scale provides data for the calculation of an overall teaching self-efficacy score, general teaching efficacy score, and personal teaching efficacy score for each participant using a 6-point Likert scale (1 = *Strongly agree*, 2 = *Moderately agree*, 3 = *Agree slightly more than disagree*, 4 = *Disagree slightly more than agree*, 5 = *Moderately disagree*, 6 = *Strongly disagree*). Personal teaching efficacy scores were calculated using responses to items 3, 6, 7, 8, and 9, as defined by the instrument authors. These items were then reverse scored so that higher efficacy would be represented by a higher score. General teaching efficacy scores were calculated using the responses to items 1, 2, 4, 5, and 10. The scoring for these items was not manipulated as per the instrument scoring instructions. Finally, the overall teaching efficacy scores were calculated as a sum score of the full 10 survey items (5 reverse scored personal efficacy and 5 standard scored general efficacy items) with high scores representing high teaching efficacy. Data were entered into SPSS for data analysis.

Results

The data analysis included instrument reliability analysis using Cronbach's alpha, assumptions testing to validate the use of the t -test statistic, descriptive statistics and paired sample t tests to identify and determine significance of identified differences in efficacy scores between the pretest and posttest data. Data analysis was conducted at the item level as well as the construct level, including the score data for the primary construct of overall teaching efficacy as well as the subscore data representing the constructs of personal teaching efficacy and general teaching efficacy.

Instrument Reliability

Cronbach's alpha were calculated to demonstrate instrument reliability for the dependent variable constructs of overall teacher efficacy, personal teacher efficacy, and general teacher efficacy using both pretest and posttest data. The Cronbach's alpha statistics for all three constructs, both pretest and posttest demonstrated acceptable reliability with statistics ranging from .742 to .852 (see Table 1).

Table 1

Cronbach's Alpha Reliability Measures

Efficacy Construct	Pretest Cronbach's alpha	Posttest Cronbach's alpha
Overall teaching efficacy	.812	.821
Personal teaching efficacy	.825	.742
General teaching efficacy	.751	.852

Assumptions

The t -test is based on the assumption of approximately normal distribution of the data. The sample was large enough to meet the assumption of normality through the central limit theorem ($N=51$); however, the data were also examined to ensure adequate normality for the t -test assumption of normal distribution. On graphic visualization using normal Q-Q plots of the observed versus expected values, the data for the overall efficacy summed scores were approximately normal with a suspected outlier (Figure 1).

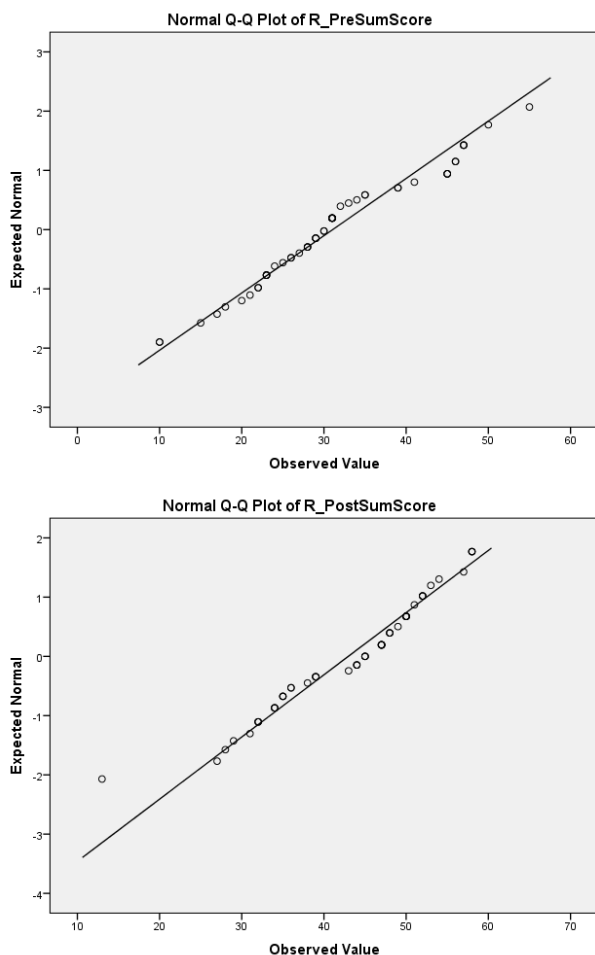


Figure 1. Normal Q-Q plots of the calculated pre and posttest overall teaching efficacy scores

In addition, visualization using normal Q-Q plots of the personal and general efficacy summed scores also provided approximately normal results, noting the single possible outlier (Figures 2 and 3).

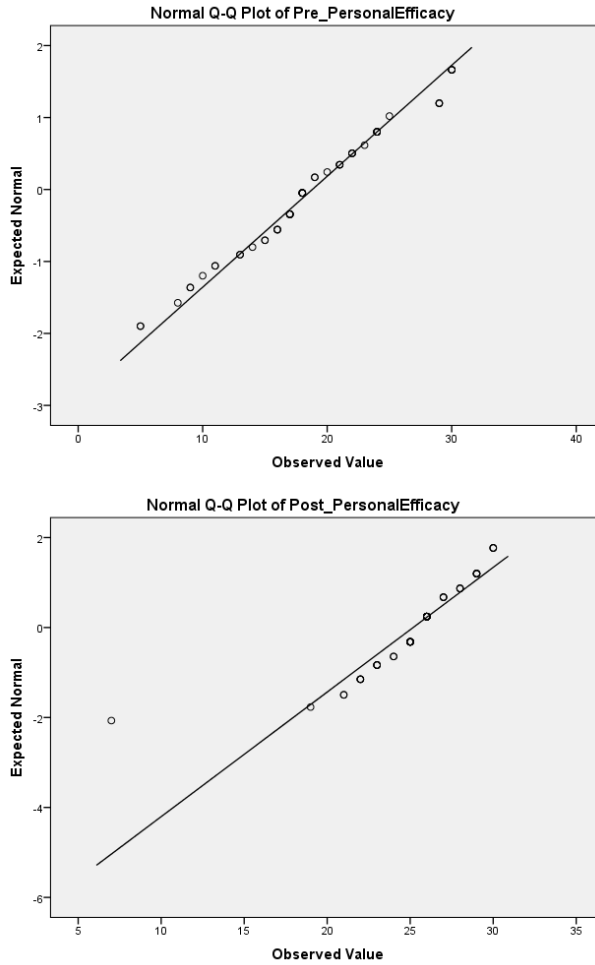


Figure 2. Normal Q-Q plots of the calculated pre and posttest personal teaching efficacy scores

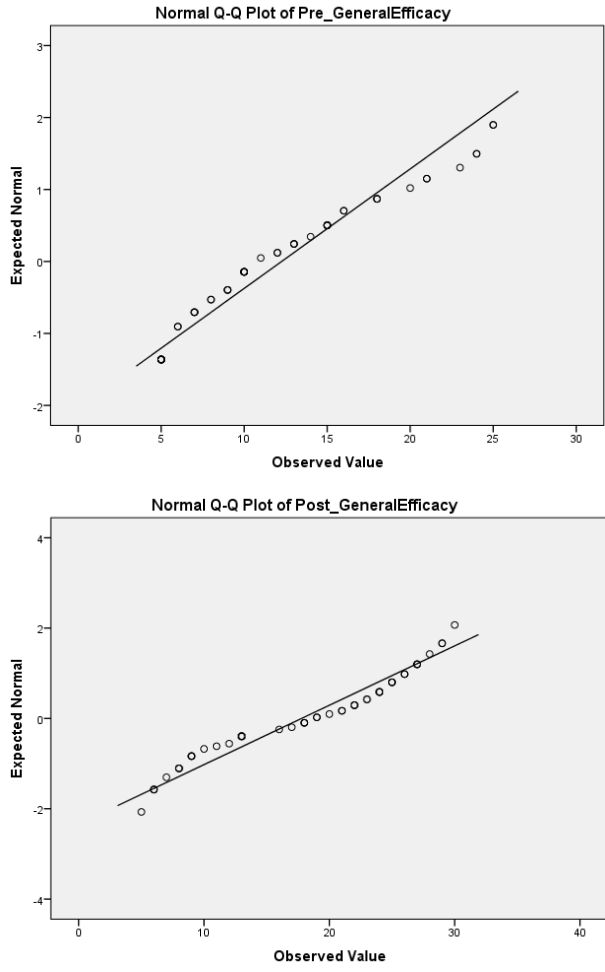


Figure 3. Normal Q-Q plots of the calculated pre and posttest general teaching efficacy scores

To confirm normal distribution, mean score differences were examined in terms of overall sum scores, as well as personal efficacy scores and general efficacy scores, pretest and posttest. Table 2 provides the descriptive statistics demonstrating skewness and kurtosis both falling within the acceptable range of -1.0 to +1.0 for each construct, supporting an approximate normal distribution and validating the use of the *t*-test for these constructs.

Table 2

Skewness and Kurtosis of Differences

	N	Range	Mean	Std. Dev.	Skewness	Kurtosis
Personal Difference	51	28.00	-6.373	5.621	-.400	.637
General Difference	51	33.00	-5.529	8.589	.123	-.963
Overall Efficacy Difference	51	52.00	-11.902	12.503	.066	-.550

Item Level Differences

To test the null hypothesis of no significant differences in perceived self-efficacy from pretest to posttest among the sample, the researcher first examined differences in each of the survey item responses. Descriptive statistics were first calculated, providing a mean, standard deviation, and standard error mean for each survey item, both pretest and posttest. Differences were calculated, which were then evaluated using paired samples *t* tests to determine if the differences in mean scores were statistically significant. Table 3 provides the mean scores (pre and posttest) for each survey question, standard deviation (SD), standard error mean (SE Mean), and the mean differences.

Table 3

Descriptive Statistics by Survey Item

	Mean	N	SD	SE Mean	Mean Difference (posttest-pretest)
PreQ1	2.84	51	1.771	.248	.765
PostQ1	3.61	51	2.050	.287	
PreQ2	2.45	51	1.616	.226	1.039
PostQ2	3.49	51	1.943	.272	
PreQ3	4.098	51	1.473	.206	.941
PostQ3	5.039	51	1.248	.175	
PreQ4	2.37	51	1.766	.247	1.098
PostQ4	3.47	51	1.912	.268	
PreQ5	2.29	51	1.432	.201	1.373
PostQ5	3.67	51	1.774	.248	
PreQ6	3.549	51	1.689	.237	1.314
PostQ6	4.863	51	1.265	.177	
PreQ7	4.000	51	1.811	.254	1.059
PostQ7	5.059	51	.947	.133	
PreQ8	3.373	51	1.833	.257	1.745
PostQ8	5.1176	51	.86364	.12093	
PreQ9	3.7843	51	1.62866	.22806	1.314
PostQ9	5.0980	51	.70014	.09804	
PreQ10	2.29	51	1.890	.265	1.255
PostQ10	3.55	51	1.911	.268	

Results indicated an increase in item level scores from pretest to posttest in every item. To test whether these differences were significant, paired sample *t* tests were then calculated to evaluate the significance of the identified differences between posttest and pretest scores for each survey item (1-10). Table 4 provides the mean differences (posttest-posttest) in response scores and the level of significance of these differences. The item by item analysis showed significant improvement in scored teacher efficacy

across all survey items ($p < .005$, one-tailed), which include items related to both personal teaching efficacy and general teaching efficacy.

Table 4

Results of Paired Sample t tests on Individual Survey Items (Pretest – Posttest)

Item	Paired Differences					t	df	Sig. (2-tailed)	p (1-tailed)
	Mean Difference	SD	SE Mean	95% CI of the Difference					
				Lower	Upper				
Q1	.765	2.006	.281	.201	1.329	2.723	50	.009	.0045
Q2	1.039	1.833	.257	.524	1.555	4.050	50	.000	<.001
Q3	.941	1.139	.159	.621	1.261	5.903	50	.000	<.001
Q4	1.098	2.091	.293	.510	1.686	3.751	50	.000	<.001
Q5	1.373	2.375	.333	.705	2.040	4.128	50	.000	<.001
Q6	1.314	1.503	.210	.891	1.737	6.241	50	.000	<.001
Q7	1.059	1.567	.219	.618	1.500	4.825	50	.000	<.001
Q8	1.745	1.707	.239	1.265	2.225	7.301	50	.000	<.001
Q9	1.314	1.476	.207	.899	1.729	6.355	50	.000	<.001
Q10	1.255	2.756	.386	.480	2.030	3.252	50	.002	.001

The results of the item level analysis revealed significant improvement in item level efficacy scores from pre to posttest. These results support a rejection of the null hypothesis of no significant differences in teacher efficacy at the individual item level. However, to answer the research question and address the research hypothesis, it is necessary to examine the differences in overall teaching efficacy, personal teaching efficacy, and general teaching efficacy.

Efficacy Construct Sum Score Differences

In order to address the research question and hypothesis directly and reveal the effect of the RtI professional development program on teacher efficacy, the calculated variables of overall teaching efficacy, personal teaching efficacy, and general teaching

efficacy were examined to identify significant differences between pretest scores and posttest scores. Table 5 illustrates the descriptive statistics for each of the three teacher efficacy constructs calculated from the data. Improvement in teaching efficacy scores in each of the three constructs was evident.

Table 5

Descriptive Statistics of Efficacy Construct Scores

	Mean	N	Std. Dev.	SE Mean	Difference
Pre Overall Efficacy	31.059	51	10.345	1.449	11.902
Post Overall Efficacy	42.961	51	9.529	1.334	
Pre Personal Efficacy	18.804	51	6.487	.908	6.373
Post Personal Efficacy	25.177	51	3.609	.505	
Pre General Efficacy	12.255	51	6.023	.843	5.529
Post General Efficacy	17.784	51	7.606	1.065	

Examining differences in overall teaching efficacy scores, as well as personal teaching efficacy scores and general teaching efficacy scores, paired sample *t* tests were used to evaluate the significance of the identified pre and posttest score differences. The difference between pretest and posttest sum scores of overall teaching efficacy (personal and general combined) showed a significant improvement in the posttest compared to the pretest, $t(50) = 6.80, p < .001$ (one-tailed). This significant improvement from pretest to posttest was also evident in personal teaching efficacy ($t[50] = 8.10, p < .001$ [one-tailed]) and general teaching efficacy subscores ($t[50] = 4.60, p < .001$ [one-tailed]).

Table 6 provides the full results of the *t* tests.

Table 6

Results of Paired Sample t tests of Efficacy Construct Scores

	Paired Differences					t	df	Sig. (2- tailed)	p (1-tailed)
	Mean	Std. Dev.	SE Mean	95% CI of the Difference					
				Lower r	Upper				
Overall Efficacy Score (Post – Pre)	11.902	12.503	1.751	8.385	15.419	6.798	50	.000	<.001
Personal Efficacy Score (Post – Pre)	6.373	5.621	.787	4.792	7.954	8.096	50	.000	<.001
General Efficacy Score (Post – Pre)	5.529	8.589	1.203	3.114	7.945	4.597	50	.000	<.001

Therefore, the results of the paired sample *t* tests reject the null hypothesis and support significant differences in overall efficacy sum scores ($p < .001$), personal teaching efficacy scores ($p < .001$), and general teaching efficacy scores ($p < .001$) among the sample of teachers in this study.

Summary

This section presented the results of the data analysis to test the null hypothesis to determine if significant differences in teacher efficacy scores were evident based on pretest scores obtained prior to completing a designated RtI professional development program, and posttest scores obtained after completion of the designated RtI professional development program. Results of the instrument reliability analysis using Cronbach's alpha supported the reliability of the instrument and aligned with previous research documenting Cronbach's alpha for this instrument. Descriptive statistics and paired sample *t* tests were used to identify significant differences in pretest and posttest teaching

efficacy scores at all levels (item level and construct level). The results of the analysis support the rejection of the null hypothesis, demonstrating significant differences in overall efficacy sum scores ($p < .001$), personal teaching efficacy scores ($p < .001$), and general teaching efficacy scores ($p < .001$) among the sample of teachers in this study. These results support that the RtI professional development program supported a positive shift in teacher efficacy among the sample; however, these results are limited by the lack of inclusion of a control group.

Section 5: Discussion, Conclusions, and Recommendations

Despite the wide acceptance of the use of RtI in elementary schools (Deshler & Cornett, 2012), RtI application at the secondary level has lacked comprehensive understanding and has been approached with resistance (Reschly & Wood-Garnett, 2009). Incorporating seamless procedures and professional development that support teachers in developing a greater understanding of the process by teachers and increased teacher efficacy can produce effective educators who are skillful and equipped to handle challenging academic and behavioral situations (Nunn & Jantz, 2009), eliminating resistance to RtI implementation . Greater understanding could alleviate this resistance and other barriers, allowing RtI implementation to continue to emerge as an effective intervention at the secondary level. The purpose of this study was to examine the perceptions of core subject area teachers about their efficacy to assess and disaggregate data, provide appropriate interventions, monitor students' progress in an on-going fashion, and ultimately improve student achievement. Teachers' sense of efficacy has an impact on proper implementation, success of the program, and overall learning outcomes (Nunn & Jantz, 2009).

Using a quantitative, one group, pretest posttest research design incorporating a pre- and postquestionnaire (the Teacher Efficacy Scale, Short Form) with implementation of professional development, I examined the impact of professional development on teacher efficacy as it relates to the RtI model put in place at the selected school. A sample of 51 teachers from a single Title I middle school within the Southeastern public school district in which there has been a recent implementation requirement for RtI were recruited and participated. In the professional development program, participants

received in-depth instruction on the RtI multi-tiered problem-solving model and a variety of example instructional strategies that can be incorporated into the intervention lesson/plan. The pre- and postsurvey teacher efficacy results were compared and analyzed for statistically significant differences based on participation in the RtI professional development program.

Summary of Key Findings

For this study, the independent variable was training in the form of professional development on the RtI model and the dependent variable was teaching efficacy, as measured by the 10-item Teacher Efficacy Scale, Short Form (Hoy & Woolfolk, 1993). Following the instructions for scoring of the Teacher Efficacy Scale, Short Form (Hoy & Woolfolk, 1993), an overall teaching self-efficacy score, general teaching efficacy score, and personal teaching efficacy score was calculated for each participant. Data obtained from the pre- and post-efficacy questionnaires gathered from the 51 participants were compiled, construct variables were calculated for each participant, and the data were analyzed using descriptive statistics and paired samples *t* tests to identify significant differences in pretest and posttest teaching efficacy scores, both at the individual item level (i.e., each item on the questionnaire) and at the construct level.

The results indicated significant differences in overall efficacy sum scores ($p < .001$), personal teaching efficacy scores ($p < .001$), and general teaching efficacy scores ($p < .001$) based on participation in the designated professional development program. Thus, the RtI professional development program supported a positive shift toward increased teacher efficacy related to RtI among the sample. It was noted, however, that the results were limited by the lack of inclusion of a control group.

Interpretation of the Findings

The results of this study showed significant improvement in all three efficacy construct scores (overall self-efficacy [$p < .001$], personal teaching efficacy [$p < .001$], and general teaching efficacy [$p < .001$]) with participation in the RtI professional development program. These results support the role of RtI professional development in supporting teacher efficacy, and therefore, teacher acceptance, use, and success with RtI in the secondary learning environment. The results also support the assertions of Duffy (2007), who stressed the importance of professional development for all school faculty and staff in cultivating the ability to collect and interpret the student assessment data, and develop and implement the interventions such as RtI requires.

Prior research has shown that implementation of RtI promotes teacher collaboration, defined by coordinated and cooperative efforts among faculty in providing the needed support for students and increasing teacher perceptions of their own efficacy (Duffy, 2007; Ehren, 2009). Particularly at the secondary level, the successful implementation of RtI is dependent on teacher and staff collaboration and capabilities, both real and perceived. Thus, the link between RtI implementation and teacher efficacy is critical to success. Pas et al. (2010) stated that teacher efficacy impacts teachers' behavior, affects goal-setting, and supports teachers' ability to persevere in tasks.

The impact of RtI on general teaching efficacy, in large part, may stem from the impact of RtI on teacher collaboration and the impact of RtI on personal teaching efficacy may stem from individual conceptions of teacher capabilities. Both collaboration and perceptions of teachers' own capabilities can be supported through professional development by providing experience and knowledge, as supported by SCT, helping to

explain the results of this study, in which general and personal teaching efficacy were supported with participation in the professional development program.

Although achievement of content mastery in secondary education has been shown to be dependent on literacy proficiency (Ehren, 2009), many secondary teachers may struggle as content literacy may not have been incorporated as part of their secondary teacher preparation (Ehren, 2009). At the same time, among secondary teachers, educators may not accept literacy as a part of their role, but rather make the assumption that literacy instruction is part of elementary, not secondary, education (Ehren, 2009). Not identifying with literacy instruction at the secondary level would seem to hinder teachers' sense of efficacy in teaching literacy, if following along with the basic concepts of SCT and self-efficacy (Bandura, 1977), as beliefs are continually shaped by way of one's experience within the environment, including one's perception of one's own capabilities, which are similarly shaped through experience (Bandura, 1977, 1986, 1997). However, if teacher self-efficacy shaped through experience, it seems fitting that professional development in RtI would support increased teacher efficacy related to RtI. Indeed, the study findings supported significant increases in efficacy related to RtI with participation in the RtI professional development program.

Prior research also has contended that greater efficacy leads to greater effort and persistence, which leads to better performance among the students, and which in turn leads to even greater efficacy among the teachers (Tschannen-Moran et al., 1998). Equity in schools requires the ability to assist all students in attaining some degree of success and RtI is the current initiative geared to address this endeavor. The results of this study support the use of professional development in RtI for secondary education teachers to

increase teacher efficacy, both general efficacy and personal teaching efficacy, which will support teachers' abilities to support student achievement.

Limitations

The results of this study supporting positive gains in teacher efficacy with RtI professional development were limited by the chosen research design, and more specifically by the lack of inclusion of a control group. This specific delimitation reduces the validity of the study in not accounting for confounding variables which may have affected the efficacy score outcomes of the sample. One example is testing threat, in which the process of pretesting may have influenced the posttest results such that the pretest increased awareness of teacher efficacy among the sample, essentially priming the participants for the program and potentially affecting the outcome of the posttest. Without a control group to compare against, the design lacks a baseline measure to compare with a group that remained untreated (i.e., did not participate in the professional development program). Thus, the design improves internal validity through inclusion of the pretest, but sacrifices external validity in the process.

In addition, the Teacher Efficacy Scale is a self-report instrument. As such, the results of the survey were limited by the accuracy and honesty of the participant responses. Therefore, the ability to generalize the results to a large population of secondary school teachers remains limited.

Recommendations for Further Study

From the results of this study, it is evident that further research on the implementation of RtI and the impact of RtI use in the secondary education environment, both on teachers and students, is necessary to gain a better understanding of how RtI can

be used to support at-risk students in secondary school. The results of this study supported increased teacher efficacy with professional development in RtI. Given the importance of effective implementation of RtI for the secondary school under investigation and the need to meet mandated expectations, continued research into the demonstrable effectiveness of RtI in this environment would support better decision making in terms of ensuring implementation of effective strategies for meeting the needs of all students.

First, to address the limitations of this study, a randomized, controlled pretest posttest study should be conducted in order to provide increased internal and external validity supporting the effectiveness of RtI in this secondary school setting. Second, to generate a more in-depth understanding of how the RtI professional development program affected positive self-efficacy gains among the teachers and how these gains support student achievement, a qualitative, or mixed methods study should be conducted in which teachers and possibly students are interviewed after participation in the professional development to query how the development opportunity changed teacher behaviors and beliefs.

Implications

The primary implication of this study in terms of recommended action is to support implementation of RtI at the secondary level within the selected public school district. Results of this study, though not necessarily generalizable to a larger population, shed light on the potential benefits of using RtI at the secondary level and how teacher professional development can serve to support the effectiveness of the RtI implementation through increased teacher efficacy, both general efficacy and personal

teacher efficacy, specifically related to RtI. From the results of this study, professional development on RtI for the teachers in this school district, who are already implementing RtI, is recommended to support teacher efficacy and subsequent improvements in student outcomes as a result of the increased efficacy among the teaching staff. Teacher efficacy, which impacts teachers' thoughts, beliefs, and emotions, influences teacher behaviors.

Increased teaching efficacy among a population of teachers who may have low teaching efficacy due to lack of experience and training for secondary teachers, where literacy development is typically viewed as something that is taken care of in the earlier years (Ehren, 2009), supports increased teacher capabilities and confidence, effort and persistence, which leads to better performance among the students, and which in turn leads to even greater efficacy among the teachers (Tschannen-Moran et al., 1998), as noted previously. This represents a continuous cycle of supporting student gains and teacher efficacy, aligning with the main concepts of SCT, that teachers' beliefs are continually shaped by individual experiences and perceptions of one's own capabilities (also shaped through experience) (Bandura, 1977, 1986, 1997).

If teacher self-efficacy beliefs (perceptions of own capabilities) are shaped through experience, as is contended within SCT, it seems fitting that professional development in RtI would support increased teacher efficacy related to RtI. Indeed, the study findings supported significant increases in efficacy related to RtI with participation in the RtI professional development program. This study acknowledges that secondary level teachers may not be as comfortable with literacy instruction due to lack of training and/or experience, but they can benefit significantly from professional development

serving to support greater teacher efficacy, which in turn supports improved student outcomes while implementing RtI.

Conclusions

Using a quantitative, one group, pretest/posttest research approach, this study was focused on addressing the research question of the study: What effect, if any, does explicit training in the form of professional development on the RtI model have on the perceived self-efficacy of secondary core subject area teachers? Data were obtained through use of the TES-S, administered to teachers from a single school within a district already implementing RtI, who volunteered to participate in a professional development opportunity on the RtI model. The survey was given twice, once at the onset of the research study, and then again at completion of the professional development program. Results indicated positive gains in teacher efficacy across all three constructs of efficacy (overall self-efficacy, general teaching efficacy, and personal teaching efficacy) after completion of the professional development program.

Given the correlation between teacher efficacy and effectiveness of RtI implementation and student outcomes, these results support the continued implementation and use of the RtI model for the school in question. Results were limited by the lack of a control group in the analysis, and therefore cannot be generalized beyond this population, although these results shed light on the potential benefits of RtI and the inclusion of RtI professional development during implementation of the intervention strategy to support more effective implementation, greater teacher efficacy toward RtI, and enhanced student outcomes resulting from more effective use of the strategy. Positive social change is highlighted through the improved student outcomes expected

through the enhanced teacher efficacy in delivering the RtI model. The RtI model is an effective strategy for meeting the diverse needs of all students and implementation of professional development opportunities for secondary teachers specifically, who may lack both training and experience in RtI and literacy instruction in general, can be used to support greater teacher efficacy related to delivering RtI to secondary students and, therefore, support improved student outcomes.

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[bin/getdoc.cgi?dbname=108_cong_public_laws&docid=f:pub1446.108.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108_cong_public_laws&docid=f:pub1446.108.pdf)

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Appendix A: Teacher Efficacy Scale (Short Form)

Teacher Efficacy Scale (Short Form)*

A number of statements about organizations, people, and teaching are presented below. The purpose is to gather information regarding the actual attitudes of educators concerning these statements. There are no correct or incorrect answers. We are interested only in your frank opinions. Your response will remain confidential.

INSTRUCTIONS: Please indicate your personal opinion about each statement by circling the appropriate response at the right of each statement.

KEY: 1=Strongly Agree 2=Moderately Agree 3=Agree slightly more than disagree
4=Disagree slightly more than agree 5= Moderately Disagree 6= Strongly Disagree

- | | | |
|-----|---|-------------|
| 1. | The amount a student can learn is primarily related to family background. | 1 2 3 4 5 6 |
| 2. | If students aren't disciplined at home, they aren't likely to accept any discipline. | 1 2 3 4 5 6 |
| 3. | When I really try, I can get through to most difficult students. | 1 2 3 4 5 6 |
| 4. | A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her environment. | 1 2 3 4 5 6 |
| 5. | If parents would do more for their children, I could do more. | 1 2 3 4 5 6 |
| 6. | If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson. | 1 2 3 4 5 6 |
| 7. | If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly. | 1 2 3 4 5 6 |
| 8. | If one day my students couldn't do an assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty. | 1 2 3 4 5 6 |
| 9. | If I really try hard, I can get through to even the most difficult or unmotivated students. | 1 2 3 4 5 6 |
| 10. | When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment. | 1 2 3 4 5 6 |

*In Hoy, W.K. & Woolfolk, A.W. (1993). Teachers' sense of efficacy and the organizational health of school. *The Elementary School Journal* 93, 356 – 372.