THE RELATIONSHIP BETWEEN TEACHER SELF-EFFICACY AND SPECIAL

EDUCATION REFERRALS IN AN ELEMENTARY RTI MODEL

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By

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Abstract

This mixed methods study examined the relationship between teachers' self-efficacy beliefs and their likelihood to refer students for special education eligibility in an elementary Response to Intervention (RTI) problem-solving model in a single district. Twenty-nine general education teachers and 22 special education teachers were surveyed, while three special educators and three general educators were interviewed. Special education teacher self-efficacy beliefs were greater than general educators, finding a statistically significant ($p=.045$) difference for self-efficacy in instructional strategies. Open-ended survey responses revealed that the majority of teachers found RTI positively impacted their abilities to implement instructional strategies and increase student engagement, but had a lesser effect on their abilities to execute classroom management.

On average, teachers in this study estimated they refer 2.1 students per year for potential special education services. The relationship between self-efficacy and special education referrals for general education teachers was not statistically significant in any area. However, moderately strong, inverse relationships were evident for special education teachers in the areas of overall teacher self-efficacy ($r=-.452$, $p=.031*$), self-efficacy for instructional strategies ($r=-.466$, $p=.025*$), and self-efficacy for classroom management ($r=-.413$, $p=.05*$). Thus, as special education teacher self-efficacy increased in these areas, special education referrals decreased. Results were statistically significant.   This study expanded upon the limited body of research available on the intersecting variables of teacher self-efficacy and special education referrals, particularly within the RTI framework.

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Dedication

Dedicated to my beloved sister, Nina. You taught me to see the value and beauty in everyone.

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Chapter One – Introduction

Overview

Two years following the passage of the Education for all Handicapped Children

Act (EHA) in 1975, the United States Department of Education issued regulations to

assist in the identification of students with learning disabilities (D. Fuchs, Mock, Morgan,

& Young, 2003). These regulations advised that a *severe discrepancy* between a

student's cognitive ability and academic achievement must be present to identify a

student as learning disabled. The National Joint Committee on Learning Disabilities

(2010) found that in the years following the EHA, students were increasingly identified

for special education services at a rate disproportionate to enrollment increases. The

severe discrepancy approach as a method of identification has been blamed for this

phenomenon (D. Fuchs et al., 2003). Critics of this approach labeled it the *wait to fail*

model because a documented discrepancy must first involve a history of failure to

achieve (Ferri, 2012; D. Fuchs et al., 2003; Reynolds & Shaywitz, 2009).

Concerns over the discrepancy model for specific learning disability identification

went unaddressed for nearly thirty years until the reauthorized EHA, rechristened the

Individuals with Disabilities Education Act, or *IDEA 2004*, offered an alternative method

of identification. IDEA (2004) stated that schools:

Must permit the use of a process based on the child's response to scientific,

research-based intervention; and may permit the use of other alternative research-

based procedures for determining whether a child has a specific learning

disability; or a disorder in one or more of the basic psychological

processes involved in understanding or in using language, spoken or written, that

may manifest itself in an imperfect ability to listen, think, speak, read, write, spell,

or to do mathematical calculations. (34 CFR 300.8(c)(10))

Thus, the idea of *responsiveness to intervention*, or RTI, presumed that some students

with reading difficulties identified as disabled may not actually have a disability, but

rather, did not receive effective instruction (Wanzek & Vaughn, 2011).

While RTI's initial reference occurred only within the limited scope of identifying

students with learning disabilities under IDEA (2004), the use of RTI as an instructional

framework proliferated (Zirkel, 2011). Fletcher and Vaughn (2009) described RTI as a

model that screens students for academic difficulties, monitors students' progress on an

ongoing basis, and offers progressively more intensive interventions when students fail to

respond. Preferred methods of RTI implementation varied. The *problem-solving*

approach involved team decision making regarding intervention, whereas the *standard-*

protocol method prescribed a specific treatment protocol based on the identified need (D.

Fuchs et al., 2003; D. Fuchs, L.S. Fuchs, & Stecker, 2010; Hollenbeck, 2007; McKenzie,

2009). Additional models have also been proposed, including a *mixed model* of RTI that

combines problem-solving techniques with standard-protocol methods, as well as

reconceptualization of the framework altogether (Al Otaiba et al., 2014; D. Fuchs, L.S.

Fuchs, & Compton, 2012).

The lack of consensus on the purpose of RTI as an instructional framework, a

model for learning disability identification, or a combination of the two, led to

implementation inconsistencies (L.S. Fuchs & D. Fuchs, 2009b; McKenzie, 2009).

According to the United States Department of Education, Institute of Education Sciences [IES] (2015), despite pervasive RTI adoption, a prescribed curriculum or vision against which to measure effectiveness at the school level had not been developed. Proponents of RTI hailed its use for eliminating bias in special education referrals due to data-based decision making (Rinaldi, Averill, & Stuart, 2011; Wanzek & Vaughn, 2011). However, critics argued that the ideal of reducing biased special education referrals had not been realized, noting particular concern over teacher skill and judgment to execute the tenets of RTI espoused in the research (Gotshall & Stefanou, 2011). Particularly in a problem-solving RTI model that places emphasis on the competence of teachers in selecting and delivering interventions, teacher variables may impact RTI's effectiveness.

In addition to teacher competence, teacher self-perception of competence, or *teacher self-efficacy*, may influence decision-making in RTI models. Positive teacher self-efficacy beliefs have been associated with increased student achievement, behavior, and motivation (Kelm & McIntosh, 2012; Tschannen-Moran & A.W. Hoy, 2001; Tschannen-Moran & A.W. Hoy, 2007; Tschannen-Moran, A.W. Hoy, & W.K. Hoy, 1998). Highly efficacious teachers worked longer with students exhibiting academic difficulties and pointed to factors such as their own teaching or the environment as contributing to poor performance (Brady & Woolfson, 2008; Tschannen-Moran & A.W. Hoy, 2007). In contrast, teachers with low self-efficacy beliefs were more likely to attribute student failure to factors internal to the child (Woolfson, Grant, & Campbell, 2007). Teachers with low self-efficacy beliefs also referred students to special education

with greater frequency than teachers with higher levels of self-efficacy (Chu, 2011; Dunn, Cole, & Estrada, 2009; Podell & Soodak, 1993).

Need for the Study

Reynolds and Shaywitz (2009) argued that problem-solving RTI approaches led to inconsistencies and unsupported assumptions regarding student ability and the appropriate methods of intervention. Hoover (2010) agreed, citing a need for additional research on the accuracy of RTI in learning disability identification and the development of procedures for referring students for possible special education eligibility. Further exacerbating concerns with RTI problem-solving frameworks was the reliance on educators to tailor instruction to the specific needs of each student (L.S. Fuchs et al., 2010). Thus, the success of the model appears to rely heavily on teachers' abilities to individualize interventions based on student need.

Gotshall and Stefanou (2011) concurred, citing the following concerns related to teachers' abilities to implement a problem-solving RTI model:

Asking teachers to monitor the progress of every child routinely and make accommodations where needed raises questions of how well-prepared teachers feel in working with the data that continuous progress monitoring brings; how knowledgeable they assess themselves to be in choosing and implementing interventions; and how confident they are in their ability to do so. In cases where teachers may not have had opportunities to develop the skills needed to collect and interpret data associated with continuous progress monitoring or to develop a

repertoire of empirically-validated interventions, their sense of efficacy as teachers might suffer. (p. 322)

According to Woolfson and Brady (2009), teacher self-efficacy more accurately predicted attributions for student failure than other factors. Thus, teachers' perceptions of their own capabilities may impact RTI implementation, including decisions regarding how students advance through tiers and are subsequently referred for special education evaluations. Teacher self-efficacy research conducted thus far has been described as, "comparatively reticent on how teacher efficacy is understood in the context of teaching low achievers and at risk students" (Yeo, Ang, Chong, Huan, & Quek, 2008, p. 195). As RTI attempts to remediate the difficulties of low achieving students and prevent inappropriate special education referrals, teacher self-efficacy beliefs in this context are particularly salient. Kleinsasser's (2014) meta-review of teacher self-efficacy research further supported the need for additional investigation analyzing the effects of efficacy beliefs on instructional outcomes. Ferri (2012) agreed, advocating for additional inquiry exploring the link between teacher attributions for student difficulties, teacher behaviors, and the impact on students. With teacher competence a critical function of the RTI problem-solving model, teacher self-perceptions of competence suggested the need for further study.

Nunn, Jantz, and Butikofer (2009) argued that additional research on the relationship of RTI implementation outcomes with teacher beliefs and perceptions was necessary. Similarly, Klassen, Tze, Betts, and Gordon (2011) found a need "to establish a stronger research base that provides evidence for links between efficacy and outcomes,

particularly at the classroom level where the influence of teaching characteristics plays a critical role in influencing achievement" (p. 40). Thus, teacher self-efficacy, within the context of a widespread educational initiative such as RTI, is highly relevant and may contribute to the limited body of existing research on the interaction of these factors.

Statement of the Problem

Conceptual disagreement over RTI's purpose and the lack of a strong evidence base citing its effectiveness have plagued implementation (Fletcher & Vaughn, 2009; Hale et al., 2010; O'Connor, Boccian, Beach, Sanchez, & Flynn, 2013; Reynolds & Shaywitz, 2009; Rinaldi et al., 2010). Few studies have cited empirical evidence proving RTI's effectiveness (Fletcher & Vaughn, 2009; Hale et al., 2010; Lindstrom & Sayeski, 2010; O'Connor et al., 2013; Reynolds & Shaywitz, 2009; Rinaldi et al., 2010). Although L.S. Fuchs and Vaughn (2012) cautioned not to confuse treatment with diagnosis, RTI has been employed in both veins – as an instructional framework and as a model of identifying students with learning disabilities.

Although the number of students identified with specific learning disabilities has decreased from over 2.86 million in the 2001-2002 school year to roughly 2.3 million in the 2011-2012 school year (National Center for Educational Statistics, 2015), the attribution for this decrease cannot be directly linked to RTI as it is likely to be multi-faceted. Hale et al. (2010) concluded that use of RTI for specific learning disability (SLD) determination was "far too problematic" (p. 227), while Zirkel and Thomas (2012) labeled its use "indefensible" (p. 57). SLD determination based on RTI has also been

argued as contextual, based upon student progress within a class, school, or community (McKenzie, 2009).

Further complicating these contextual factors is the influence of teacher self-efficacy on student outcomes. Teachers with high levels of self-efficacy more frequently persevered when working with students with academic difficulties (Banks, Dunston, & Foley, 2013), while those with low self-efficacy beliefs were more likely to refer students to special education (Chu, 2011; Dunn et al., 2009; Podell & Soodak, 1993). Tschannen-Moran and A.W. Hoy (2007) additionally found that teachers with low self-efficacy gave up more easily on students exhibiting difficulties and expected they would be unsuccessful with certain students. Although studies have been conducted on teacher self-efficacy and instructional behaviors, these studies have not specifically addressed teacher self-efficacy within RTI models.

While Hoover (2010) described that perceptions of disabilities may impact special education referrals within RTI frameworks, research is lacking on the relationship between teachers' self-perceptions of their own capabilities and their likelihood to refer students for potential special education eligibility. Klassen et al. (2011) reviewed 218 articles on teacher self-efficacy spanning 1998 through 2009. Klassen et al.'s analysis revealed that during this time period, only two studies examining the relationship between teacher self-efficacy and student outcomes were conducted. Chu (2011) agreed, contending that research investigating the effects of teacher self-efficacy was necessary to understand the first phase of the special education referral process for at-risk students.

Chu further stated that, "Whether a teacher's sense of efficacy is the best predictor of teacher decision [for referrals] is unknown" (p. 7).

The paucity of research on teacher self-efficacy and student outcomes, paired with the increasing prevalence of RTI, inconsistencies in RTI implementation, and unclear procedures for special education eligibility, underscores the necessity for additional research. Therefore, this research study investigated the relationship between teacher self-efficacy and special education referrals in an RTI framework, providing insight to educators and researchers on how teacher perceptions of their own abilities may influence their likelihood to refer students for potential special education eligibility.

Definition of Terms

Attribution Theory – "The inferences that observers make about the causes of behavior, either their own or those of other people" (Brady & Woolfson, 2008, p. 529).

Building Assistance Team (BAT) – A group of professionals who supported teachers in level two of the Heartland RTI problem-solving model to select, execute, and monitor student interventions (D. Fuchs et al., 2003).

Child Study Team (CST) – A group of general and special education teachers, administrators, school nurses, clinical and school psychologists, related service providers, and counselors who meet frequently to review student progress and discuss pre-referral strategies and student referrals for special education (Guirdy & van den Pol, 1996).

Collective Teacher Self-Efficacy – The beliefs a faculty holds regarding its ability to attain meaningful learning outcomes regardless of obstacles to learning (Tschannen-Moran & Barr, 2004).

Controllability – The extent of control a person possesses over the cause of his or her behavior (Woolfson, Grant, & Campbell, 2007).

Convergent Parallel Design – A type of mixed methods research that collects quantitative and qualitative data simultaneously and mixes the data during interpretation (Creswell & Plano Clark, 2011).

Council for Exceptional Children (CEC) – An international, professional special education organization (Council for Exceptional Children, 2008).

Dynamic RTI – An RTI model whereby students with the weakest skills move directly from tier one to tier three to receive intensive intervention, bypassing secondary intervention in tier two (Al Otaiba et al., 2014).

Efficacy Expectation – An individual's conviction that he or she is able to implement a behavior necessary to produce a desired outcome (Bandura, 1977).

Experimental Teaching – Either on-level or off-level instruction delivered by a special educator in the Smart RTI model. It is individually tailored to a student's needs and monitored weekly by calculating rates of improvement (D. Fuchs et al., 2012).

Education for all Handicapped Children Act (EHA) of 1975 – The first federal law to mandate education for all children with disabilities, regardless of severity; reauthorized in 1997 and 2004 as the Individuals with Disabilities Education Act (IDEA).

Free Appropriate Public Education (FAPE) –

Special education and related services that have been provided at public expense, under public supervision and direction, and without charge; meet the standards of the State educational agency; include an appropriate preschool, elementary

school, or secondary school education in the State involved; and are provided in conformity with the individualized education program required under section 614(d). (IDEA, 2004, Section 602.9)

Frog-Pond Effect – Phrase coined by Hibel, Farkas, and Morgan (2010) referring to the idea that the same student would be viewed in a more negative light in a high-performing school than in a low-performing school.

General Teaching Efficacy – A teacher's belief that teachers in general can impact student performance, regardless of external factors (Gotshall & Stefanou, 2011; Kelm & McIntosh, 2012).

Heartland RTI Problem-Solving Model – A four-level problem-solving RTI model with the unique features of: (a) a Building Assistance Team (BAT) in level two, (b) Heartland staff involvement in level three, and (c) the intentional exclusion of cutoff points on universal screeners and problem-solving tools (D. Fuchs et al., 2003).

Heartland Staff – Staff of the Heartland Area Educational Agency who intervened in tier three of their problem-solving RTI model, described as "mostly doctoral-level or masters-level school psychologists and special educators who use behavioral problem solving to refine or redesign the intervention and coordinate its implementation from that point on" (D. Fuchs et al., 2003, p. 163).

Highly Qualified – The requirement of the No Child Left Behind Act (NCLB) of 2002 for public school teachers to be properly certified in the subjects and/or areas they teach.

Individuals with Disabilities Education Act (IDEA) 2004 –

Federal law that requires that to receive funds under the act, every school system

in the nation must provide a free, appropriate, public education for every child

between the ages of three and twenty-one, regardless of how seriously he or she

may be disabled. (Hallahan, Kauffman, & Pullen, 2012, p. 460)

Individualized Education Program (IEP) – A written plan for each child with a

disability that is developed, reviewed, and revised annually by a team of professionals,

the child's parent(s)/guardian(s), and the child (when appropriate), that contains a

description of: (a) the *child's present education levels, (b) measurable annual goals, (c)*

specially-designed instruction, (d) participation in assessments, (e) transition services

(when appropriate), (f) educational placement; and (g) other relevant considerations

related to the child's special education services (IDEA, 2004).

Least Restrictive Environment (LRE) –

To the maximum extent appropriate, children with disabilities, including children

in public or private institutions or other care facilities, are educated with children

who are not disabled, and special classes, separate schooling, or other removal of

children with disabilities from the general educational environment occurs only

when the nature or severity of the disability of a child is such that education in

general classes with the use of supplementary aids and services cannot be

achieved satisfactorily. (IDEA, 2004, Section 612.5)

Locus of Causality – The internal or external source of an individual's attribution

for an effect (Woolfson, Grant, & Campbell, 2007).

Mixed Model of RTI – An RTI model which employs a combination of both problem-solving and standard-protocol approaches (Feiker & Hollenbeck, 2007).

No Child Left Behind Act (NCLB) of 2002 – The reauthorized federal mandate formerly known as the Elementary and Secondary Education Act (ESEA), which required accountability of all public schools for the academic progress of all students (NCLB, 2002).

Outcome Expectancy – The judgment an individual makes on the likely consequences of a specific action given the individual's self-anticipated level of performance (Tschannen-Moran et al., 1998).

Personal Teaching Efficacy – A teacher's belief that he or she as an individual can facilitate learning outcomes (Gibson & Demo, 1984).

Primary Prevention – The initial level of high quality, research-based instruction delivered to all students that represents the goal of tier one in a three-tiered RTI model (D. Fuchs & L.S. Fuchs, 2009b).

Problem-Solving RTI – An RTI model in which a team of decision-makers identify a student's problem, propose solutions, implement and evaluate the response, and reconvene to determine if the problem has been resolved (Fletcher & Vaughn, 2009).

Rand Scale – A two-item measure of teacher self-efficacy developed in 1976 (Tschannen-Moran et al., 1998).

Reading Backwardness – Reading difficulties associated with students of low intelligence, as opposed to reading problems demonstrated by students with mean IQs relative to the general population (Rutter & Yule, 1975).

Reading Retardation – Reading difficulties associated with students who possess mean IQs relative to the general population, yet are still unable to demonstrate expected progress in reading (Rutter & Yule, 1975).

Resource Room – A classroom where students with learning disabilities receive special education services in small groups (McLeskey & Waldron, 2011).

Response to Intervention (RTI) – An instructional framework that may be used for the identification of specific learning disability which screens all children for academic difficulties, monitors student progress, and provides increasingly intense interventions based on student response (Fletcher & Vaughn, 2009); also referred to as *Responsiveness to Intervention*, *Response to Instruction and Intervention (RTII),* and *Multi-Tiered System of Support (MTSS).*

Severe Discrepancy Model – The process of identifying students as learning disabled based on a discrepancy between ability and achievement as measured by cognitive and achievement tests (D. Fuchs et al., 2003; Hoover, 2010).

Smart RTI – A model of RTI proposed by D. Fuchs et al. (2012) that involved multi-stage screening in tier one and tertiary prevention delivered by special educators who engaged in experimental teaching.

Soft Disabilities – Disabilities such as specific learning disability, emotional disturbance, Other Health Impaired (OHI), and Attention Deficit/Hyperactivity Disorder (AD/HD) whereby diagnosis is at least partially reliant on the subjective interpretation of a student's performance and behavior (Hibel et al., 2010).

Specially Designed Instruction – The adaptation of instruction for a special education student that addresses the unique needs resulting from a child's disability in order for him or her to receive access to the general curriculum (IDEA, 2004).

Specific learning disability –

(i) *General*. The term means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.

(ii) *Disorders not included*. Specific learning disability does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage (IDEA, 2004, Section 300.8)

Standard-Protocol RTI – An RTI model that uses empirically-validated protocols for students exhibiting similar difficulties (Feiker & Hollenbeck, 2007; McKenzie, 2009).

Stability – The constancy of the belief or behavior over time (Tschannen-Moran & A.W. Hoy, 2007).

STAR Time – Term used by District X for the time designated for small group intervention within RTI.

Stratified Random Sampling – The process of dividing research participants into subgroups, each of which contains similar characteristics, to improve random selection (Orcher, 2005).

Teacher Self-Efficacy – The "teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (Tschannen-Moran et al., 1998, p. 22).

Teacher Sense of Efficacy Scale (TSES) – A measure of teacher efficacy developed by Tschannen-Moran, A.W. Hoy, and W.K. Hoy (1998) that sought to link the domains of general teaching efficacy and personal teaching efficacy through a single instrument.

Tertiary Intervention – Usually the third tier in an RTI model that delivers the most intensive instruction; may refer to the most concentrated instruction in RTI models with more or less than three tiers (D. Fuchs & L.S. Fuchs, 2009).

Tier One – The initial level of high quality, research-based instruction in an RTI model that serves as primary prevention delivered to all students in the general education classroom (D. Fuchs & L.S. Fuchs, 2009).

Tier Three – Tertiary intervention in an RTI model that provides the most intensive level of support in either small group or one-on-one settings to students who did not respond to interventions in tiers one and two; there is a lack of consensus in the research on how tier three should be implemented (D. Fuchs & L.S. Fuchs, 2009).

Tier Two – A time-bound, small-group, targeted level of intervention in an RTI model delivered to students who do not respond to instruction in tier one; there is a lack

of consensus in the research on how tier two should be implemented (D. Fuchs & L.S. Fuchs, 2009).

Universal Screeners – Assessments administered to all students at the onset of tier one with the purpose of identifying those at risk of academic failure (Fletcher & Vaughn, 2009).

Wait to Fail Model – Term developed by critics of the severe discrepancy approach to specific learning disability identification because, by definition, a discrepancy between achievement and ability first requires a failure to achieve (D. Fuchs et al., 2003).

Limitations

This study employed a mixed methods design using both quantitative and qualitative procedures. Specifically, a convergent parallel approach was used where quantitative and qualitative data were collected simultaneously and mixed during interpretation.   Cresswell and Plano Clark (2011) noted that an inherent limitation of the convergent parallel design is merging two sets of very different data and interpreting the sets meaningfully. Further, differences in sample sizes among the various data collected may pose challenges.

Delimitations specific to this study included the selection of subjects from a single public school district in southeastern Pennsylvania, thus limiting generalization beyond this school district. The researcher recruited volunteers to participate in this study, therefore, participation rate and sample size must be considered when applying the results of this study to future research. Only elementary general education classroom teachers

and elementary special education teachers were included in this study. While other

individuals may support RTI in various capacities, those individuals were not surveyed.

The researcher asked survey participants to rate their self-efficacy beliefs through the

short form of the Teachers' Sense of Efficacy Scale (TSES). Although this tool was

found to be both reliable and valid as an instrument (Klassen et al., 2011; Tschannen-

Moran & A.W. Hoy, 2001), the subjective nature of teachers' perceptions is a known

limitation.

Additionally, participants were asked to estimate how many students they refer to

special education in a typical year. Responses were estimates and did not represent exact

figures as the study was conducted midway through the school year. Further, individuals

completing this study who were in their first year of teaching may have had difficulty

accurately estimating the number of students they are likely to refer to the Child Study

Team (CST) in a given year due to limited experience. Finally, special education

teachers may not have been likely to serve as initial referral sources for special education

eligibility. Yet, with the increase of special educators working in inclusive classrooms

alongside general education teachers and students, this inquiry was deemed worthy of

investigation.

Research Questions

The purpose of this study was to examine the relationship between teachers' self-

efficacy beliefs and their likelihood to refer students for potential special education

eligibility in a kindergarten through grade six RTI problem-solving model in a single

school district. The following research questions formed the basis of this study:

1. What are the self-efficacy beliefs of kindergarten through grade six general and special education teachers in an RTI problem-solving model?

2. What is the relationship between teacher self-efficacy beliefs and the number of teacher-initiated special education referrals in an RTI problem-solving model?

3. How does teacher self-efficacy for: (a) instructional strategies, (b) classroom management, and (c) student engagement relate to the number of teacher-initiated special education referrals in an RTI problem-solving model?

Summary

Following the reauthorization of IDEA 2004, RTI emerged as an alternative to the severe discrepancy approach for identifying specific learning disabilities in students (Isbell & Sabo, 2015; Zirkel & Thomas, 2012). Shortly thereafter, RTI gained rapid use as an instructional framework (Zirkel & Thomas, 2012). Practitioners frequently employed the problem-solving approach to RTI by which teams met to discuss student difficulties, brainstorm appropriate strategies, implement interventions, and monitor progress (D. Fuchs et al., 2010). However, the reliance on teacher skill and judgment to diagnose learning difficulties and execute appropriate interventions led to implementation inconsistencies in RTI problem-solving models (D. Fuchs et al., 2010).   In addition to teacher skill in implementing interventions, teachers' self-perceptions of their own skills, or self-efficacy beliefs, may also influence how students advance through tiers in RTI and are subsequently referred to special education (Gotshall & Stefanou, 2012). This study examined the relationship between teacher self-efficacy beliefs and special education referral in an RTI problem-solving model in a single, large school district. Chapter Two

provides a review of the literature on RTI, teacher self-efficacy, and special education

referral, highlighting the intersection of these topics.

Chapter Two – Literature Review

Introduction

Despite limited empirical evidence on its effectiveness, Response to Intervention, or RTI, gained widespread implementation in recent years as both a method of identifying specific learning disabilities and an instructional framework (Lindstrom & Sayeski, 2013; O'Connor et al., 2013; Reynolds & Shaywitz, 2009; Rinaldi et al., 2010). While research has lacked consensus on the preferred method of RTI implementation, practitioners frequently employed the problem-solving approach. Fletcher and Vaughn (2009) stated that this approach involved shared decision-making by a team of professionals who identify student skill deficits, recommend strategies for remediation, and evaluate outcomes. However, the problem-solving method did not utilize standardized interventions, causing concern that subjective judgments might impact decisions about how students progress through tiers in this framework (McKenzie, 2009; Reynolds & Shaywitz, 2009). As referrals to special education have been generally accepted as an outcome for failing to respond to intervention, this subjectivity may be problematic. Further, Chu (2011) contended that if teachers believe they have limited influence on student performance, they may be more likely to refer students to special education.

This literature review provides a basis for assessing the impact of teacher self-efficacy on special education referrals in RTI models. The search process consisted of an online search through Academic Search Complete for relevant subject matter. Due to the multiple acronyms and varying phrases referring to RTI, the following terms were used

when searching for RTI to prevent exclusion of relevant articles: (a) "response to intervention," (b) "responsiveness to intervention," (c) "RTI," (d) "response to instruction and intervention," and "RTII." The various references to RTI were then paired with the terms "special education referral" and "teacher self-efficacy." Due to the paucity of articles returned from the initial search, various combinations of "RTI," "special education referral," and "teacher self-efficacy" were subsequently conducted. The initial searches were limited to the years 2010 through 2015. As limited results were found within this time period, the search was expanded from the years 2005 through 2015. Finally, a search was conducted without date restrictions to determine the existence of research on RTI, special education referral, and teacher self-efficacy.

The first section of this review provides a summary of the literature on teacher self-efficacy and the evolution of the concept over time. The subsequent sections outline the history of special education law, referrals, and evaluation procedures for specific learning disability, as well as a detailed review of RTI. The final segment of the literature review highlights the intersection of RTI with teacher self-efficacy beliefs and special education referrals.

Teacher Self-Efficacy

The concept of *teacher self-efficacy*, or the "teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (Tschannen-Moran et al., 1998, p. 22), has far-reaching implications on student outcomes (Armor et al., 1976; Chu, 2011; Klassen et al., 2011; Nunn & Jantz, 2009). Tschannen-Moran et al. (1998) clarified that teacher

self-efficacy is related to teachers' perceptions of competence rather than actual competence, as the self-efficacy construct is based upon self-estimation. This distinction is critical because the underestimation or overestimation of abilities may impact individuals' actions and the amount of effort they choose to exert in various situations (Tschannen-Moran et al., 1998).

According to Kelm and McIntosh (2012), teachers with high levels of self-efficacy positively influenced student achievement, motivation, and behavior. Further, highly efficacious teachers exhibited stronger planning and organization skills and were more open to new ideas and experimentation (Tschannen-Moran & A.W. Hoy, 2007). Teachers with high levels of self-efficacy also possessed stronger beliefs that students were capable of exhibiting positive changes (Banks et al., 2013). Finally, teachers with strong senses of self-efficacy more frequently persevered when working with students with academic difficulties (Gotshall & Stefanou, 2011). In contrast, teachers with low self-efficacy beliefs were more likely to refer students to special education (Chu, 2011; Dunn et al., 2009; Podell & Soodak, 1993). Teachers possessing low levels of self-efficacy were also more likely to attribute student failure to factors internal to the child (Woolfson et al., 2007). Tschannen-Moran and A.W. Hoy (2007) additionally found that teachers with low self-efficacy gave up more easily on students exhibiting difficulties and expected they would be unsuccessful with certain students, such as those from low socioeconomic backgrounds and transient students.

The concept of teacher self-efficacy evolved over time, rooted in Bandura's (1977) self-efficacy construct. According to Bandura, the strength of individuals' beliefs

in their abilities served as strong predictors of whether they even chose to attempt to cope with stressful circumstances. Bandura posited that people fear and avoid threatening situations they believe exceed their own abilities and, conversely, participate in potentially stressful activities when they feel capable of handling them. Bandura (1977) defined an individual's *efficacy expectation* as the conviction that he or she is able to implement a behavior necessary to produce outcomes. Efficacy expectations determined the amount of effort individuals exerted and the duration of time they persisted when presented with obstacles. Further, individuals' perceptions of self-efficacy were stronger predictors of future behavior toward threats than actual past performance. Success raised efficacy expectations of mastery while repeated failures lowered them.

Years later, Bandura (1993) revisited his initial concept of self-efficacy as related to teachers. Bandura's research found that teachers with strong senses of self-efficacy were more likely to set higher goals, act on beliefs about what they can do, and "view difficult tasks as challenges to be mastered rather than threats to be avoided" (p. 144). Specifically, teachers with high coping efficacy were more likely to manage academic stressors and redirect efforts toward solving problems. Allinder (1994) concurred, arguing that teachers with high self-efficacy were more likely to implement a variety of materials and approaches, experiment with new teaching methodologies, and implement more progressive methods.

In contrast, teachers with low instructional self-efficacy demonstrated weak commitment to teaching and spent more time on nonacademic past-times than those with higher levels of self-efficacy (Bandura, 1993). Bandura found that teachers with low

self-efficacy were also more likely to criticize students for failure and give up on students when they did not see quick results. Further, teachers with low self-efficacy beliefs were less likely to believe in their abilities to influence student achievement, particularly with students who were frequently absent from school and students from low socioeconomic households. Therefore, Bandura argued that contextual factors impact self-efficacy, particularly for teachers working with students from poor backgrounds or those who were frequently truant.

Following Bandura's (1977) initial self-efficacy research, interest in teacher self-efficacy grew and instruments were developed to measure the construct (Isbell & Sabo, 2015). The first tool, developed by Armor et al. (1976) for the Rand Corporation, consisted of a two-item measure which asked teachers to rate their agreement with the following statements:

> a) When it comes right down to it, a teacher really can't do much because most of the students' motivation and performance depends on his or her home environment, and b) If I really try hard, I can get through to even the most difficult or unmotivated students. (p. 73)

This instrument, frequently referred to as the *Rand Scale*, found that teachers' beliefs in their own capabilities were significantly associated with their success in teaching reading to minority students in urban settings (Tschannen-Moran et al., 1998).

Despite criticism over the mean reliability of a two-item scale, interest in teacher self-efficacy piqued with the development of the Rand scale and research expanded in subsequent years. Guskey's (1982) research found that teachers generally accepted

greater responsibility for positive results in students, whereas they were less confident in their abilities to prevent negative student outcomes. Subsequent to Guskey's findings, Gibson and Demo (1984) introduced the concepts of *personal teaching efficacy* and *general teaching efficacy*. *Personal teaching efficacy* referred to a teacher's belief that he or she as an individual can facilitate learning outcomes, while *general teaching efficacy* signified a belief that teachers in general can impact student performance, regardless of external factors (Gotshall & Stefanou, 2011; Kelm & McIntosh, 2012). Distinction between these two types of efficacy proved important because a teacher may possess a high *general teaching efficacy*, or belief in the profession to overcome student difficulties, while holding a low *personal teaching efficacy*, or belief in his or her own capabilities.

Developed in 1998, the Teacher Sense of Efficacy Scale (TSES), also referred to as the Ohio State Teacher Efficacy Scale*,* sought to link the domains of general teaching efficacy and personal teaching efficacy by establishing an instrument that analyzed both teaching task and context, as well as self-perceptions of teaching competence (Tschannen-Moran et al.*,* 1998). The scale professed to offer a "unified and stable factor structure and assess a broad range of capabilities that teachers consider important to good teaching, without being so specific as to render it useless for comparisons of teachers across contexts, levels, and subjects" (Tschannen-Moran & A.W. Hoy, 2001, pp. 801-802). Studies found the TSES to be both reliable and valid at measuring teaching efficacy as related to student engagement, instructional practices, and classroom management (Klassen et al., 2011; Tschannen-Moran & A.W. Hoy, 2001).

Although Tschannen-Moran et al. (1998) initially claimed that teacher self-efficacy remained stable over time, Klassen and Chiu (2010) later found slight variability in that contention. Their research revealed that the three self-efficacy areas identified by the TSES – student engagement, instructional practices, and classroom management – exhibited a nonlinear relationship over time. Teacher self-efficacy presented as lower for beginning teachers, increased steadily over time from roughly zero to 23 years and declined for teachers in the latter stages of their careers. Although teacher self-efficacy appeared low at the onset of one's teaching career, it was also considered most pliable at this time (Klassen & Chiu, 2010; Tschannen-Moran & A.W. Hoy, 2007; Tschannen-Moran et al., 1998). For pre-service teachers, training in working with students with disabilities increased teacher self-efficacy beliefs, providing credence to the pliability of efficacy in early teaching and training programs (Leyser, Zeiger, & Romi, 2011).

A review of the literature revealed sparse research on the interaction between teachers' self-efficacy beliefs and the impact on special education referrals and instruction. Podell and Soodak (1993) found differential beliefs regarding the appropriateness of general education classes for students with disabilities, dependent upon teacher self-efficacy levels. Teachers with low personal self-efficacy were more likely to reason that general education was inappropriate for students with mild learning problems from low socio-economic households than teachers with high self-efficacy.

Soodak and Podell (1993) further found that teachers' senses of efficacy significantly impacted their judgments regarding the appropriateness of the general education classroom for students with learning and/or behavior problems. Teachers with

high self-efficacy in both the personal and general domains were less likely to refer

students to special education than those with low self-efficacy. Thus, factors unrelated to

student learning difficulties, such as teacher self-efficacy and student demographics,

biased special education referral decisions (Podell & Soodak, 1993).

Podell and Soodak (1993) argued that teachers' beliefs in their own competence

were highly relevant to special education referral decisions. Furthermore, poor students

were especially vulnerable to special education referral when teachers perceived

themselves as ineffective. Therefore, Podell and Soodak argued that the prevention of

inappropriate special education referrals must concentrate on the referral decisions made

by teachers. Yet, research on the nexus between teacher self-efficacy and special

education referrals proved scant in the years to follow.

Consistent with Bandura's (1977) early findings, Tschannen-Moran and A.W.

Hoy (2007) found that teacher self-efficacy increased when teachers believed their

performance contributed to student success (Tschannen-Moran & A.W. Hoy, 2007). The

experience of success then contributed to future expectations that instruction would also

be successful, leading to increased self-efficacy. The converse relationship also held

true, with repeated exposure to failure lowering self-efficacy.

Brady and Woolfson (2008) explored teacher attitudes regarding student

difficulties in the context of *attribution theory*, or "the inferences that observers make

about the causes of behavior, either their own or those of other people" (p. 529). Brady

and Woolfson accepted Bar-Tal's (1978) contention that attributes may be framed within

three components: *locus of causality, stability*, and *controllability*. Locus of causality

referred to the attribution's source – either internal or external. Stability represented the

constancy of the belief or behavior over time, while controllability represented the extent

of control a person possesses over the cause of behavior (Woolfson et al., 2007).

According to Brady and Woolfson (2008), teachers with higher senses of self-

efficacy accepted greater responsibility for educating students experiencing academic

difficulties in their own classrooms than did teachers with low self-efficacy.   Teachers

with high senses of self-efficacy were more likely to attribute external causality, or

factors outside the child, as contributing to learning difficulties than internal causes.

Conversely, teachers with lower self-efficacy, who viewed student difficulties as stable

and unlikely to change, were less likely to modify instruction and set lower expectations

for students.   Teachers with low levels of self-efficacy identified students with learning

disabilities as less able to control their own progress than their nondisabled peers.

Further, teachers who viewed students as less in control were more likely to provide

assistance, even when it may not be necessary. Brady and Woolfson contended that the

receipt of additional support when not needed could be interpreted by students as a "low

ability cue…transmitting to the learner the message that they are of low ability and likely

to need help" (p.540). Ferri (2012) supported this finding, claiming that once students

were identified as needing special education services, they were viewed as

"fundamentally different…from their non-disabled peers" (p. 863).

Teacher demographics and experience also impacted self-efficacy beliefs (Brady

& Woolfson, 2008). Bandura (1977) contended that mastery experiences strengthened

outcome expectancies, or the judgments of the likely consequences of a specific action

given an individual's anticipated level of performance (Tschannen-Moran et al., 1998).

Supporting this argument, Brady and Woolfson (2008) found that teachers with greater

experience working with students with learning difficulties were more likely to attribute

student failure to external factors. Those with less experience instructing students with

learning support needs more frequently attributed the difficulty to internal student

causalities. Additionally, special education teachers saw student behavior as more

amenable to change than general education teachers.

MacFarlane and Woolfson (2013) examined this presumption further, researching

the self-efficacy beliefs of teachers working with students with emotional and behavioral

disorders. Teachers with higher levels of self-efficacy and more positive belief systems

towards students with disabilities indicated stronger intention to include students with

emotional and behavioral disorders in the general education setting. Urton, Wilbert, and

Henneman (2014) drew similar conclusions, finding that strong teacher self-efficacy was

related to positive attitudes both towards remedial education and inclusion of students

with disabilities in general education settings.

Chu (2011) reasoned that teachers who perceived they had little ability to impact

student performance would quickly give up on students and were more likely to refer to

special education. Chu further contended that teachers with high levels of self-efficacy

would be more likely to maintain students in the general education environment and rely

on their own skills to support the student. Therefore, a teacher's decision to refer a

student for special education services may be dependent on their own self-perceptions of

effectiveness, as well as other non-academic factors.

Hibel et al. (2010) commented that eligibility for special education is often subjective, particularly when making determinations regarding AD/HD, specific learning disabilities, and emotional disturbance. For these *soft disabilities* that are diagnosed by some level of subjectivity, the interpretation of a student's performance and behavior may weigh heavily upon eligibility. Woolfson et al. (2007) agreed that even the mere identification of a student as having a disability proved enough to generate a specific set of beliefs that the student's ability was unlikely to change.

Special Education Law, Referral, and Evaluation

With the passage of the Education for All Handicapped Children Act (EHA) in 1975, Congress sought to provide equal access to a free, appropriate public education (FAPE) to all students regardless of disability. Rutter and Yule's (1977) research contributed to the decision to include students with specific learning disabilities as a protected group under the EHA. Distinguishing children with low achievement from those who were under-achieving, Rutter and Yule argued that students with *reading backwardness* were those with low intelligence whereas children with *reading retardation* possessed mean IQs relative to the general population, yet were still unable to demonstrate expected progress. Citing "severe degrees of specific reading retardation" (Rutter & Yule, 1975, p. 195) that occurred at rates above what would be statistically predicted, the conceptualization of learning disabilities developed.

Two years following the passage of the EHA, the U.S. Department of Education issued regulations to assist in the identification of students with learning disabilities (D. Fuchs et al., 2003). These regulations, reminiscent of Rutter and Yule's (1975)

differentiation between low ability and under-achievement, indicated a severe

discrepancy between a student's ability and achievement must be present to identify a

child as learning disabled. Kavale, Kauffman, Bachmeier, and LeFever (2008)

highlighted that the specific learning disability classification in IDEA is the only

disability category that references the concept under-achievement. This process of

identifying students as learning disabled based on a discrepancy between ability and

achievement was referred to as the *severe discrepancy model* of identification (D. Fuchs

et al., 2003).

The severe discrepancy model for specific learning disability (SLD) identification

proved a controversial one (McKenzie, 2009; Reschly, 2014; Zirkel & Thomas, 2012).

Critics of this method dubbed it the *wait to fail model* because, by definition, a

discrepancy between achievement and ability first requires a failure to achieve (D. Fuchs

et al., 2003). Yet, according to McKenzie (2009), advocates of the severe discrepancy

model for SLD identification argued that because SLD differs from under-achievement,

the only way to establish under-achievement relative to ability was to administer

cognitive assessments. Ofiesh (2006) agreed, stating that removing measures of

cognitive ability from the evaluation process for consideration of SLD was inconsistent

with its construct.

Kavale and Spaulding (2008) reported that following the implementation of

procedures for SLD identification in 1977 through 2008, the population of students with

SLD "witnessed unprecedented growth (about 200% since 1975)" (p. 169). In the early

2000s, students with SLD represented over 50% of the special education population and

comprised over 5% of all students. This extreme increase caused concern that many

students were incorrectly identified as learning disabled. The lack of differentiation

between low achievement and learning disability inherent in the discrepancy model was

criticized as contributing to the increasing identification of students with SLD over time

(McKenzie, 2009).

Educating the burgeoning numbers of students identified with specific learning

disabilities in schools created unique challenges, particularly with the reauthorization of

EHA in 1997 as the IDEA. The law placed a renewed emphasis on educating students

with disabilities in the *least restrictive environment* (LRE), typically accepted to be

general education. The passage of IDEA propelled throngs of students with SLD out of

self-contained classrooms and into general education.   Several years later, the

reauthorization of the Elementary and Secondary Education Act (ESEA), renamed the *No

Child Left Behind Act (NCLB)* of 2002, further increased pressure on schools to meet the

needs of all learners (McLaughlin, 2010).

NCLB required that schools disaggregate achievement data for subgroups of

students, including students with disabilities, students of low socio-economic status,

students who speak English as a Second Language (ESL), and those of various

race/ethnicities (National Joint Committee on Learning Disabilities, 2010).   Of

additional importance to special education, NCLB mandated that all students be

instructed by teachers who were considered *highly qualified* in the content area in which

they teach (NCLB, 2002). This requirement thrust additional special education students

into general education environments because many special educators teaching students in

self-contained classes were not properly certified and could no longer instruct these students in pull-out settings (McLeskey, Landers, Williamson, & Hoppey, 2012). Meanwhile, a longitudinal study conducted by Schiller, Sanford, and Blackorby (2008) found that 64% of elementary learning disabled students scored below the 20th percentile on the Woodcock-Johnson Passage Comprehension Test, underscoring the need for more effective interventions for students with reading disabilities.

Special education research increasingly influenced general education initiatives in the 2000s (L.S. Fuchs & D. Fuchs, 2009a). This theory became evident with the reauthorization of IDEA in 2004. IDEA (2004) allowed districts to utilize up to 15% of federal funds received for early intervening services to support struggling students not yet identified as special education (D. Fuchs et al., 2010). Specifically, IDEA appeared to advocate for an alternative to the identification of specific learning disabilities as one such early intervening service. The law stated that schools "must permit the use of a process based on the child's response to scientific, research-based intervention; and may permit the use of other alternative research-based procedures for determining whether a child has a specific learning disability" (IDEA, 2004).

While IDEA (2004) permitted, but did not require, responsiveness to intervention as a method of SLD identification, the most recent data in March 2012 indicated that 14 states either partially or fully required RTI for SLD determination (Zirkel, 2012). The underlying assumption behind RTI was that some students with reading difficulties, who may have been identified with learning disabilities, were not actually disabled, but rather did not receive effective instruction (Wanzek & Vaughn, 2011).

Response to Intervention (RTI)

RTI gained rapid attention and widespread implementation despite originally being recognized within the narrow context of identifying students with learning disabilities under IDEA (Zirkel, 2011). Kavale et al. (2008) agreed that RTI posed implications far beyond the special education realm, contending that one-third of all public school students could be directly impacted by RTI. Fletcher and Vaughn (2009) described RTI as a model that screens all children for academic difficulties, monitors student progress, and provides increasingly intense interventions based on student response. Although research uncovered variations in the number of tiers present in RTI models, the most frequently utilized approaches include three tiers (Greenwood & Kim, 2012; Hoover & Patton, 2008).

RTI has operated under the assumption that all students receive high quality, research-principled instruction in tier one (Murawski & Hughes, 2009; Reschly, 2014; Wanzek & Vaughn, 2011). Thus, an additional purpose of effective core instruction proved to be *primary prevention,* or high quality, research-based instruction delivered to all students in tier one (L.S. Fuchs & D. Fuchs, 2009b; McKenzie, 2009). Greenwood and Kim (2012) concurred, stating that strong tier one instruction reduced the need for additional interventions in later tiers. However, D. Fuchs et al. (2010) expanded on the importance of tier one instruction, adding that instruction must be differentiated and individualized in tier one to meet student needs.

Fletcher and Vaughn (2009) stated that another central feature present at the onset of tier one is the administration of *universal screeners*, or assessments with the purpose

of identifying those at risk of academic failure. Following the initial use of universal

screeners, Greenwood and Kim (2012) noted that progress monitoring tools must be

administered at least three times per year to inform if additional interventions in tiers two

or three are necessary. Prior to the use of universal screeners and progress monitoring

tools, most students were not diagnosed with SLD until third or fourth grade when

interventions proved less effective and more costly than if those interventions were

implemented earlier (Reschly, 2014). However, while D. Fuchs, L.S. Fuchs, and Vaughn

(2014) argued that effective tier one interventions positively impacted many students,

"these interventions – even when implemented with fidelity – [did] not dramatically

decrease the rate of inadequate responders" (p. 13).

Fletcher and Vaughn (2009) reported that approximately 80% of students were

expected to make progress through tier one intervention. This percentage has been

accepted by multiple researchers as the target for progressing through tier one (Fletcher

& Vaughn, 2009a; D. Fuchs & L.S. Fuchs, 2009; Shapiro, 2015). Yet, according to

Shapiro (2015), while 75-80% of students progressing in tier one was considered to be

the ideal, it may take some schools several years to obtain that percentage. Students

deemed non-responsive to tier one instruction then proceeded to tier two, or secondary

prevention, where they received targeted, small group intervention that is time-bound

(L.S. Fuchs & D. Fuchs, 2009b). Of the roughly 20% of students who received tier two

interventions, 15% were likely to make satisfactory progress in tier two, while the

remaining 5% advanced to tier three, or tertiary, intervention (Fletcher & Vaughn, 2009).

Fletcher and Vaughn (2009) noted that tier three provided the most intensive level of

support to a small group of students who did not respond to interventions in tiers one and two. While literature revealed general consensus regarding the increase in intensity of interventions as students progress through tiers two and three, how these tiers were conceptualized differed depending on the model of RTI implementation (Ferri, 2012; D. Fuchs et al., 2003; L.S. Fuchs & Vaughn, 2012; Greenwood & Kim, 2012; McKenzie, 2009).

Although Fletcher and Vaughn (2009) described RTI as "a set of processes and not a single model" (p. 31), L.S. Fuchs and D. Fuchs (2009b) argued that a unified approach for implementation must be established to support practitioners. Zirkel (2011) agreed, cautioning against these varying interpretations, noting that "the breadth and flexibility of RTI may be its own undoing" (p. 242). Nevertheless, the field has remained divided on which model of RTI should be employed, with some arguing for *standard-protocol* RTI, others favoring a *problem-solving* RTI approach, and still others proposing additional variations (D. Fuchs et al., 2010).

RTI models and tiers. Inherent in the standard-protocol method of RTI was the use of standardized procedures for students exhibiting similar difficulties (D. Fuchs et al., 2003). Further, without standardized interventions, it was argued that one cannot know if a student's improvement, or lack thereof, was directly linked to the intervention (Ferri, 2012; D. Fuchs et al., 2003). D. Fuchs, Mock, Morgan, and Young (2003) additionally claimed that the use of standardized interventions would result in greater ability to utilize RTI as an identification method for learning disabilities because of stronger fidelity of implementation.

L.S. Fuchs and D. Fuchs (2009b) discriminated that while primary prevention in tier one was *research-principled*, secondary prevention in tier two was research-based, relying on an empirically validated tutoring protocol. L.S. Fuchs and Vaughn (2012) noted that research favored the use of a standard-protocol approach to RTI and that such methods better allowed schools to document student learning, utilize resources effectively, and implement programs with fidelity. Additionally, validated interventions accelerated student performance (D. Fuchs et al., 2010; Greenwood & Kim, 2012). This contention supported the idea that standard-protocol allows for greater "quality control" (D. Fuchs et al., 2010, p. 167).

L.S. Fuchs and D. Fuchs (2009b) argued that proper validation of tier two interventions supported the elimination of special education referrals due to poor instruction. Thus, tier three would be considered special education because a student's lack of response could not be attributed to inadequate instruction since research-based protocols were used. However, this notion of tier three as special education has not been widely accepted in practice. Reschly (2014) argued that some students advancing to tier three require intensive interventions, but that such interventions do not always rise to the level of *specially designed instruction*, the major characteristic of special education services. This discord reinforces the conflicting views on the purpose and role of special education in RTI models that was previously found in the literature, with standard-protocol proponents advocating for special education as the third tier and problem-solving supporters arguing it should exist outside the framework.

Fletcher and Vaughn (2009) defined problem-solving RTI as a method by which a team of decision-makers identified a student's problem, proposed solutions, implemented and evaluated the response, and reconvened to determine if the problem was resolved. Collaborative consultation was found to be a key feature of the problem-solving method and one viewed by educators as an advantage of the model (Swanson, Solis, Ciullo, & McKenna, 2012). Proponents of the problem-solving model asserted that this collaboration helped to shape a philosophy of shared ownership for all students between general education teachers and special educators (Bean & Lillenstein, 2012).

Swanson et al. (2012) found that special education teachers perceived the benefits of RTI to be: (a) the ability to intervene with struggling students early, (b) increased opportunities for collaboration and consultation, and (c) shared ownership of responsibility for all students among general education and special education teachers. Practitioners further identified benefits of the problem-solving model as the early provision of support to struggling learners and the ability to meet unique student needs (D. Fuchs et al., 2003; Rinaldi et al., 2010; Swanson et al., 2012). Rinaldi, Averill, and Stuart (2010) additionally found perceived strengths to include: (a) improved instruction for all students, (b) fewer inappropriate referrals to special education, (c) development of a positive school culture, and (d) better supports for English Language Learners (ELLs). Specifically, special education teachers and psychologists indicated that they were more aware of the core curriculum taught in general education classrooms than they had been prior to RTI implementation, leading to better understanding of student performance (Bean & Lillenstein, 2012). Finally, according to Reschly (2014), a key and frequently

overlooked benefit of RTI involved improved special education programming for students identified as disabled. Reschly asserted that student progress data maintained through RTI led to more robust *Individualized Education Plan (IEP)* development.

Two school systems emerged as exemplars in problem-solving implementation – the Heartland Area Educational Agency in Iowa and the Minneapolis Public Schools (D. Fuchs et al., 2003). However, while Heartland was cited as a model problem-solving site, this agency employed a four-level RTI model in contrast to the three-level RTI models most frequently utilized. In the Heartland model, level one involved a discussion of the student's difficulties with his or her parents, while a *Building Assistance Team (BAT)* convened in level two (D. Fuchs et al., 2003). The BAT consisted of a building team who supported the student's teacher in selecting, executing, and monitoring interventions. If a student still did not progress in level two, he or she advanced to level three where Heartland staff intervened. D. Fuchs et al. (2003) described the Heartland staff as "mostly doctoral-level or masters-level school psychologists and special educators who use behavioral problem solving to refine or redesign the intervention and coordinate its implementation from that point on" (p. 163). The Heartland model did not consider special education until level four, after exhausting level three resources. The final notable difference in Heartland's model from most problem-solving approaches included the intentional exclusion of cut points on assessments. This encouraged practitioners to use multiple data sources rather than relying on a single score.

Similar to Heartland, Minneapolis also utilized a four-level problem-solving model of RTI that excluded the use of cut points on standardized assessments (D. Fuchs

et al., 2003). In the Minneapolis model, level one involved collecting data on all students

and subsequently identifying struggling learners. Level two represented informal

consultation among teachers, while a problem-solving team met in level three to

brainstorm appropriate interventions and monitor implementation. Special education was

not considered until level four.

Although the Minneapolis and Heartland models considered special education

services in level four, the literature revealed that most problem-solving RTI models

consisted of only three levels (Bean & Lillenstein, 2012; D. Fuchs & L.S. Fuchs, 2009;

Hoover & Patton, 2008). Further, models proposed often neglected to specify if special

education should exist within or outside the RTI framework. While Wanzek and Vaughn

(2010) noted that tier three was reserved for students demonstrating little progress in tiers

one and two who may have "life-long difficulties" (p. 306), whether tier three was

equivalent to special education was not addressed. Similarly, the Council for Exceptional

Children (CEC), an international, professional special education organization, released a

position paper in 2008 advocating that special education teachers serve as the main

interventionists in tier three, but did not stipulate whether tier three should be

synonymous with special education.

Critics of tier three as special education insisted that if tier three was reserved

solely for students with IEPs, special education may "continue to serve general education

as a crutch, psychologically, and functionally, and will weaken the resolve…of

developing a robust, inclusive general education continuum" (D. Fuchs et al., 2010, p.

308). Since the late 1980s, the percentage of students with learning disabilities receiving

their instruction in general education settings increased steadily (McLeskey & Waldron, 2011). Proponents of inclusion objected to special education occupying its own tier within RTI for fear that inclusive practices would decline and students with disabilities would be subjected to sub-standard instruction in *resource rooms,* or classrooms where students with learning disabilities received special education services (Ferri, 2012; D. Fuchs et al., 2010).

Of the 21 observation studies on resource room reading instruction conducted prior to 2008, a lack of explicit word study instruction and poor quality vocabulary and fluency instruction were consistent among the findings (Swanson & Vaughn, 2010). While Swanson and Vaughn's 2010 study found resource rooms increased the amount of time-on-task and used more research-based strategies than were apparent ten years prior, the rate at which student improvement occurred in the resource room was still not great enough to close the achievement gap. McLeskey and Waldron (2011) agreed that resource rooms did not provide students with disabilities the more intensive, higher quality instruction necessary to improve their achievement considerably. McLeskey and Waldron's research raised questions as to how special education would function as a third tier in the RTI model and if prior sub-par outcomes associated with resource room instruction would resurface. Indeed, Hoover (2010) reasoned that "how a disability is perceived within RTI has far-reaching effects relative to eligibility decisions" (p. 295).

Zirkel (2011) reported that each state allowed for the provision of special education during or after tier three in an RTI model. This lack of clarity, however, created a divide, with some arguing for tier three as special education, while others

viewed it as the most intensive level of general education intervention (Ferri, 2012).

Tier three contained the most variability in RTI models (McKenzie, 2009). D. Fuchs et

al. (2003) raised an additional concern regarding how to handle students who respond

effectively to tier three intervention, questioning whether students should continue

receiving this service, be referred to special education, or return to core instruction.

Since D. Fuchs et al.'s initial concern in 2003, confusion over tier three remained (Ferri,

2012; McKenzie, 2009).

Although the standard-protocol and problem-solving approaches presented as the

most frequently cited models of RTI found in the literature, additional methods have been

proposed. Research cited a mixed model of RTI, which employed a combination of

problem-solving and standard-protocol approaches, as widely utilized (Hollenbeck, 2007;

Wilcox, Murakami-Ramalho, & Urick, 2013). Still, Vaughn, Denton, and Fletcher

(2010) argued that another approach was needed to move students with the lowest scores

in tier one immediately to intensive intervention. D. Fuchs et al. (2012) developed an

additional model based on Vaughn et al.'s (2010) philosophy identified as *Smart RTI*.

Smart RTI called for multi-staged screening in tier one, whereby students received two

levels of assessment to reduce false positive screener results. Students identified by

screening as non-responders then bypassed tier two and moved directly to tertiary

prevention, known in most models as tier three. In Smart RTI, special education teachers

delivered what D. Fuchs et al. referred to as *experimental teaching*, consisting of either

on-level or off-level instruction individually tailored to a student's needs that is

monitored weekly by calculating rates of improvement. If weekly progress was not

achieved as expected, teachers further modified instruction. Al Otaiba et al. (2014) introduced a similar model called *Dynamic RTI*. Similar to Smart RTI, Dynamic RTI fast-tracked tier one students with the weakest skills to tier three. Students who advanced directly to tier three had statistically significant higher scores in reading than the control group receiving traditional RTI, which required lock-step progression through tiers.

Implementation challenges. The lack of consensus on RTI approaches resulted in implementation inconsistencies (Al Otaiba, 2014; D. Fuchs et al., 2010; L.S. Fuchs & D. Fuchs, 2009b; Kavale et al., 2008; McKenzie, 2009). D. Fuchs et al. (2010) declared that "basic and important disagreements about [RTI's] nature and purpose" (p. 301) plagued implementation. These disagreements and inconsistencies proved most notable in tiers two and three. Murawski and Hughes (2009) noted that while RTI advocates for short-term interventions in tier two, a consistent definition of what constitutes 'short-term' has not been developed, with interventions ranging anywhere from eight to 30 weeks. In addition to conflicting views on the frequency and duration of interventions, confusion regarding the personnel responsible for providing instruction and the movement of students in and out of various tiers were problematic (L.S. Fuchs & Vaughn, 2012). Mitchell, Deshler, and Ben-Hanania Lenz (2012) echoed these concerns, finding little difference in instruction between tiers two and three. Further, Mitchell et al. reported that special educators interviewed in their study had difficulties explaining the differences between tier two and tier three interventions.

Although one of RTI's greatest accomplishments was professed to be an increase in schools' use of screening tools to identify struggling students, RTI critics have

admonished the ineffective use of universal screeners (Fletcher & Vaughn, 2009).   Tools

not intended for screening purposes were frequently used in this vein (Ferri, 2012;

Fletcher & Vaughn, 2009). Ferri (2012) criticized the use of these screening tools as "a

very crude and narrow measure of what we might understand reading to be…[with] a

wide range of arbitrary cutoff scores, percentiles, and standard deviations listed as

benchmarks" (p. 869). Fletcher and Vaughn (2009) also conveyed concern over the use

of curriculum-based measures as screeners.   The National Joint Committee on Learning

Disabilities (2010) referenced studies that found frequent progress monitoring and

screening tools were no more effective in forecasting student achievement than

assessments performed two or three times per year. Furthermore, screeners produced

high false-positive rates, thus identifying students for tier two who were not in need of

that intervention (L.S. Fuchs & Vaughn, 2012).

   L.S. Fuchs and Vaughn (2012) additionally asserted that non-responsiveness in

RTI studies most likely reflected an underestimate of unresponsiveness in general,

because researchers were likely to ensure proper implementation of protocols in their

work. In other words, because researchers conducted checks of RTI implementation

fidelity and provided in-depth training to practitioners, the unresponsiveness of students

in research studies is most likely less than in classrooms without such extensive

oversight.

   The Institute for Education Sciences (2015) appeared to have confirmed Fuchs

and Vaughn's (2012) hypothesis which argued non-responsiveness in closely-controlled

research studies was an underrepresentation of RTI results in practice. The IES (2015)

research study differed from prior studies because it captured real-world implementation of RTI by schools who adopted the framework on their own, rather than studies that were controlled and closely monitored by researchers. IES (2015) found "significant variation" (p. 103) in school-level RTI results in its multi-state study comparing impact sample schools with reference sample schools. Impact sample schools consisted of 146 elementary schools that met the following criteria for inclusion in the study: (a) implemented RTI in reading for at least three years, (b) screened all students for reading difficulties at least twice per year, (c) used data for placing students in tiers, and (d) implemented progress monitoring for students below grade level. Additionally, this research examined students who were just above or just below each school's cut-point for risk. The rationale for the study design was that students who were either just above or just below the cut point for tier two were significantly similar, and thus, results from students who remained in tier one or received intervention in tier two could be reasonably compared to determine the efficacy of instructional practices and achievement results.

IES (2015) found that assignment to tiers two or three for first grade students just below the cut-point for risk negatively impacted their learning. Thus, those students who were assigned to tiers two or three to receive additional intervention actually fell further behind their counterparts who were just above the cut-point for risk, resulting in roughly one month of lost learning. Students with IEPs in grade one who were just below the cut point were most negatively affected by assignment to intervention groups. This also held true for grade three students with IEPs. ELL students across all grade levels were most positively affected by placement in intervention groups.

Lack of fidelity of implementation in RTI models revealed itself as a theme in the research (D. Fuchs et al., 2010; Rinaldi et al., 2010; Shinn, 2007).   D. Fuchs et al. (2010) found little differences in the achievement of schools employing RTI problem-solving approaches from those without RTI. D. Fuchs et al. further alleged that the problem-solving approach was not conducive to accommodating students with substantial learning disabilities.   Moreover, logistical issues including increased paperwork, difficulties scheduling, and staffing constraints were found to be challenges (Swanson et al., 2012). Additional research supported this contention, finding that when funding, paperwork, and scheduling concerns were minimal, teachers were better able to focus on effective RTI implementation (Wilcox et al., 2013).

Lindstrom and Sayeski (2013) stated that no evidence existed indicating that RTI decreases the rate of learning disabilities. Although the incidence of specific learning disabilities decreased from its peak of over 2.86 million in the 2001-2002 school year to roughly 2.3 million in the 2011-2012 school year (National Center for Educational Statistics, 2015), the attribution for this decrease has not yet been ascertained. While a study by Wanzek and Vaughn (2011) found no statistical significance in the decrease of learning disabilities associated with RTI, they contended that a practical significance was present due to a 5% decrease in identification, which would be considered significant by educators. Yet, Wanzek and Vaughn hypothesized a decrease in learning disability identification, while not statistically significant, may be due to students being classified as requiring special education services under other labels such as Other Health Impairment (OHI). Similar to Wanzek and Vaughn's study, O'Connor, Boccian, Beach,

Sanchez, and Flynn (2013) found no statistical significance in the proportion of students identified with specific learning disabilities in RTI models.

Reynolds and Shaywitz (2009) contended that the "wait to fail" catchphrase coined by critics of the severe discrepancy model should be replaced by a "'watch them fail' model known as RTI" (p. 47). McKenzie (2009) also found irony in the notion of RTI as an alternative to the wait to fail discrepancy approach, because RTI requires students to advance through several tiers of intervention prior to becoming identified for special education. Muraski and Hughes (2009) questioned if the RTI method of specific learning disability identification was "replacing a flawed-in-implementation-but-theoretically-sound system with another theoretically sound system that is untested on a large scale basis" (p. 273). L.S. Fuchs and Vaughn (2012) warned against mistaking identification of specific learning disability with treatment intervention. Thus, the delivery of special education services in RTI schools may be impacted by the philosophy of RTI implementation.

RTI, Specific Learning Disability, and Teacher Self-Efficacy

D. Fuchs et al. (2012) noted that IDEA's "subtle preference" (p. 263) for using RTI as a method for learning disability identification has not been without controversy. Hale et al. (2010) argued that RTI implementation was far too problematic to justify its use as a method of identifying students with learning disabilities. Reynolds and Shaywitz (2009) agreed, strongly advocating against the use of RTI as a method for identifying learning disabilities, arguing that the determination of learning disabilities becomes contextual, based upon progress against peers in the same class, school, or community.

Hibel et al. (2010) referred to this idea as the *frog-pond effect,* or the notion that the same student would be viewed in a more negative light in a high-performing school than in a low-performing school.

Dunn, Cole, and Estrada (2009) found that teachers in RTI models were most likely to refer students to special education for inattention and aptitude. The authors indicated that although RTI did not promote the idea of referring students based on student characteristics or demographics, factors such as socioeconomic status, race, and language may ultimately influence referral to special education. Indeed, demographic factors influenced the placement of students into special education. Gender served as a predictor for special education placement, with a greater likelihood of boys referred to special education than girls, particularly within the category of specific learning disability (Hibel et al., 2010). Hibel et al. (2010) found that students of lower socioeconomic status were more likely to be referred to special education, although this factor is mediated by a strong correlation between weaker academic performance at school entry and low socioeconomic status. Thus, academic achievement at school entry may be equally as important when examining referral data as socioeconomic status (Hibel et al., 2010).

Although an abundance of earlier research discovered the overrepresentation of minority students in special education, Hibel et al. (2010) found that Black and Hispanic students were no more likely to be referred to special education than non-Hispanic Whites. Notably, however, schools with large minority populations were less likely to refer students to special education overall than predominantly White schools, which likely accounted for this phenomenon (Hibel et al., 2010). High achieving schools were

more likely to place underperforming students into special education than schools with a greater percentage of students identified as underperforming. This indicated that "context matters" (Hibel et al., 2010, p. 328) when examining who is referred to special education.

Maniadaki, Sonuga-Barke, and Kakouros (2006) studied the relationship between low self-efficacy beliefs of adults and the referral of children with Attention Deficit/Hyperactivity Disorder (AD/HD) to specialists or special education. The study found that both educators and parents perceived greater senses of efficacy in supporting hyperactive girls than hyperactive boys. These findings, viewed in concert with statistics revealing that boys were four times more likely than girls to be diagnosed with AD/HD, suggested that sense of efficacy serves as a key variable in special education referral judgments. These "assessments of the academic performance of pupils with AD/HD did not primarily depend on the children's actual problems but on teachers' perceptions of each particular symptom of AD/HD (hyperactivity, impulsivity, inattention), as an obstacle to academic progress" (Maniadaki et al., 2006, p. 139). Hence, teacher self-efficacy beliefs are particularly important to consider in RTI problem-solving models where standardized approaches to intervention are not employed.

Hui-Michael and Garcia (2009) further challenged the assumption that RTI led to increased accuracy in special education referrals due to ongoing progress monitoring and data-based decisions. The authors pointed to the under-representation of Asian-Americans in special education to prove their claim, finding that teachers of struggling Asian-American students were more likely to disregard difficulties experienced by these students. Hui-Michael and Garcia theorized that positive stereotypes of Asian-Americans

as the "model minority" (p. 32) contributed to fewer referrals of Asian-American students to special education. Thus, a special education referral may be thought to reflect a teacher's belief that the student's struggles are internally attributable to disability. Similarly, IES (2015) found that in addition to resource constraints, teacher judgment and "other factors" (p. 81) contributed to students being assigned to RTI tiers other than what should have occurred based on the school's documented decision-rule. Thus, a student's actual assignment to a tier within RTI frequently departed from the intended assignment that should have occurred based on the data. Teacher judgment was cited as a reason for this occurrence.

Additionally, Nunn and Jantz (2009) studied factors within RTI models that influenced teacher behaviors. Teacher perceptions regarding their skills and involvement influenced beliefs regarding their self-efficacy. Teachers who engaged in active levels of RTI implementation demonstrated greater self-efficacy than those who were simply preparing for RTI implementation or engaged in "mechanical" (Nunn & Jantz, 2009, p. 603) implementation in early stages. Thus, those with more experience with RTI demonstrated greater teacher self-efficacy (Nunn & Jantz, 2009).

The relationship of teacher self-efficacy and experience with RTI must also be viewed in conjunction with Brady and Woolfson's (2008) findings on teacher attributions for student difficulties. According to Brady and Woolfson, teachers who viewed student learning difficulties as fixed were less likely to modify their instruction. Further, they may set lower expectations for these students. With Fuchs et al. (2010) advocating that differentiated instruction must occur in tier one of RTI, these findings suggested that

teachers with low self-efficacy beliefs may be unlikely to adapt or differentiate their teaching in tier one. Hence, students whose teachers hold low self-efficacy beliefs may be more frequently referred to tiers two and three, and/or special education.

Summary

Although the definition of specific learning disability has remained relatively unchanged since its inception in 1975, the approach to identification was subject to criticism, evolution, and confusion. The reauthorization of IDEA (2004) allowed for responsiveness to intervention, or RTI, for specific learning disability identification (Zirkel, 2012). While RTI was initially referenced only in the limited scope of learning disability diagnosis, policy-makers and practitioners embraced RTI as a preventive framework. General themes of concern in the literature on RTI included: (a) lack of consensus on RTI's purpose as a method of learning disability identification, instructional framework, or both; (b) weak implementation; (c) over-reliance on universal screening tools that produced false positive results; (d) use of curriculum-based assessments as universal screeners; (e) inconsistent progress monitoring of student performance; and (f) logistical concerns such as paperwork, staffing, and scheduling (Ferri, 2012; L.S. Fuchs & Vaughn, 2012; Reynolds & Shaywitz, 2009; Swanson et al., 2012).

Particularly in a problem-solving RTI model, which places emphasis on the judgment of a team of professionals in guiding educational decisions for students, factors outside student performance may weigh heavily on how students advance through tiers and are subsequently referred to special education. Thus, an analysis of potential factors

that may contribute to bias in referrals is necessary. Teacher self-efficacy is one possible variable that may influence special education referral in RTI models.

To date, only a handful of studies have been conducted examining the relationship between teacher self-efficacy and special education referrals. Although Dunn et al. (2009) theorized that RTI may alleviate subjectivity in referrals due to the need for substantiating data, this contention was not explored in depth. Thus, additional research is needed to determine how teacher self-efficacy and attributions for student difficulties relate to special education referral in RTI problem-solving models. Chapter Three explains the methodology employed to collect data on teacher self-efficacy, reliability and validity of self-efficacy instruments, RTI, and special education referrals.

Chapter Three – Methodology

Introduction

Despite limited evidence on the effectiveness of RTI, the prevalence for its use both as an instructional framework and for specific learning disability identification has proliferated since its original conception in the early 2000s (Fletcher & Vaughn, 2009; Hale et al., 2010; Murawski & Hughes, 2009; O'Connor et al., 2013; Reynolds & Shaywitz, 2009). Although multiple models of RTI have been developed, the standard protocol method and problem-solving approach to RTI have been frequently cited in the research (Fletcher & Vaughn, 2009; D. Fuchs et al., 2003; D. Fuchs et al., 2010; McKenzie, 2009). While standard protocol RTI called for the use of standardized interventions for specific student needs, the problem-solving approach required teams of educators to convene to identify student learning problems, propose strategies, evaluate outcomes, and reconvene to review effectiveness (Fletcher & Vaughn, 2009). Additional research was deemed necessary to investigate how teacher self-efficacy impacts special education referrals within the context of teaching students who struggle to learn (Klassen et al., 2011; MacFarlane & Woolfson, 2013; Nunn et al., 2009; Yeo et al., 2008).

The purpose of this study was to determine the relationship between teacher self-efficacy beliefs and special education referrals within a single RTI problem-solving model in a large suburban school district in southeastern Pennsylvania. Utilizing a mixed methods approach with a convergent parallel design, surveys and interviews provided both quantitative and qualitative data for the study.

Setting

The setting for this study was a large, suburban school district in southeastern Pennsylvania. At the time of the study, the district educated approximately 13,000 students, including 6,600 kindergarten through grade six elementary students in 13 elementary schools. The mean size of elementary schools in the district was approximately 500 students. As of October 2015, the following demographics were reported in the district: 63% White, 20% Asian, 8% Black, 5% Hispanic, and 4% Multi-Racial. District-wide, 29.9% of students were reported to be economically disadvantaged. Students qualifying for English as a Second Language (ESL) services comprised 3.7% of the total enrollment, while 16% were reported to have IEPs.

Variability was evident in demographics across elementary schools. The least ethnically diverse elementary school was 79% White, while the most racially diverse school was 45% White. One building served an ESL population that represented 14.7% of the school, while two buildings registered 1% or less. In terms of socioeconomic status, the percentage of students receiving free and reduced lunches ranged from 13.8% to 57.5%. Finally, the percentage of students with IEPs in the district ranged from 12.8% in one school 20.1% at another school. Nine of the thirteen schools provided learning support special education services in a fully inclusive model through co-teaching and instructional assistant support, whereas four elementary buildings provided special education through a combination of inclusion and pull-out services.

According to documents provided by the School District, heretofore referred to as School District X, a problem-solving RTI model was previously implemented in four

distinct stages (School District X, 2012). Stages one through three occurred over the

course of three school years and consisted of implementation in kindergarten through

grade three. Four elementary schools participated in RTI implementation during stage

one in the 2008-2009 school year. Classroom teachers and building Child Study Teams

(CSTs) received training from the district's intermediate unit and an onsite coach in the

administration of universal screeners, progress monitoring tools, and the RTI framework

in general. The remaining schools in the district phased in implementation for grades

kindergarten through three during the 2009-2010 and 2010-2011 school years. Finally,

stage four of implementation occurred in the 2011-2012 school year, during which time

the district moved to RTI implementation in grades four through six for all elementary

buildings.

Participants

        Kindergarten through grade six general education and special education teachers

from School District X were asked to participate in the study. These teachers were

identified as teaching elementary language arts within the RTI framework. Of the

educators recruited, 277 were general education teachers while 86 were special education

teachers. Special education teachers who instructed students in self-contained classes for

life skills support, autistic support, and multiple disabilities support were not recruited for

participation. Twenty-nine general education teachers and 23 special education teachers

completed the survey portion of the study, for a response rate of 10.5% and 26.7%,

respectively. The overall response rate for the survey was 14.3%. An additional

participant responded but was excluded from the study, as the respondent indicated his/her role as a speech/language pathologist in the open-ended portion of the survey.

Three general education teachers and seven special education teachers expressed interest in participating in interviews. Additionally, one speech and language pathologist indicated a desire to be interviewed but was excluded from the study due to his/her role. Participants were divided into subgroups of general education teachers and special education teachers and selected through *stratified random sampling,* or the process of dividing research participants into subgroups, each of which contains similar characteristics, to improve random selection (Orcher, 2005). All three general education teachers were selected for interviews, while three special education teachers were randomly chosen.

Instruments

This study employed a mixed methods design using both quantitative and qualitative data sources. Therefore, several instruments were used to obtain data. The Teachers' Sense of Efficacy Scale – Short Form (TSES) was administered. This 12-item survey created by Tschannen-Moran and Hoy (2001) asked teachers to rate how capable they believed themselves to be at influencing instruction, engagement, and classroom management. Participants were asked to respond on a scale of one to nine, with one being "nothing," and nine, "a great deal." Means were then calculated for overall teacher self-efficacy and self-efficacy in instructional strategies, classroom management, and student engagement. The TSES was previously refined and validated by its authors over

the course of three separate studies. The researcher obtained permission to use the TSES in this study from Tschannen-Moran and A.W. Hoy (Appendix A).

The second instrument used in this study was a researcher-developed electronic survey that included both demographic and open-ended questions. Demographic questions required participants to identify their role as a general education teacher or special education teacher, and select the grade range they primarily taught as either "primary – grades K-3," "intermediate – grades 4-6," or "both primary and intermediate – grades K-6." The open-ended response questions asked participants to describe the impact RTI has had (if any) on their abilities to implement instructional strategies, implement classroom management techniques, and increase student engagement. These three areas of focus were selected to provide additional insight into the three factors identified by the TSES as critical to understanding teacher self-efficacy. Participants were also asked to describe the impact RTI has had (if any) on their likelihood to refer general education students for potential special education eligibility. This question allowed for greater examination of why teachers may refer students to special education within an RTI framework. The demographic information required asked respondents to classify their current teaching positions as either general education classroom teachers or special education teachers. Additionally, participants were asked to indicate whether they predominantly instructed primary grades (kindergarten through grade three), intermediate grades (four through six), or both primary and intermediate grades (kindergarten through grade six). To establish reliability and validity, the survey was piloted with ten elementary general education or special education teachers who were not

the targeted population for the study.   Hence, the online survey (Appendix B) was

comprised of both researcher-developed questions and the TSES. The TSES represented

items three through 14 of the survey, while researcher-developed questions included

items one, two, 15, 16, 17, and 18.

Voluntary interviews were also conducted to support triangulation of data. The

interviews consisted of several open-ended questions developed by the researcher which

sought to gain feedback on teacher perceptions of RTI, special education referral criteria,

and teacher self-efficacy (Appendix C). Interviewees were requested to describe how

their own personal knowledge, beliefs, and experiences impacted their ability to

implement RTI. Additionally, interview participants were asked to describe their

personal strengths and weaknesses related to RTI across the three domains of teacher

self-efficacy. Finally, interviews explored the point at which teachers decided to refer

struggling students to the building CST for consultation, and ultimately, potential special

education evaluation. Interview transcripts were analyzed by theme. The researcher

piloted the instruments with three elementary-certified general education or special

education teachers who did not participate in the study.

Reliability and Validity

Reliability and validity must be considered with respect to both quantitative and

qualitative data in a mixed methods study. Creswell and Plano Clark (2011) stated that

quantitative reliability refers to the consistency and stability of results over time.

Reliability must be established in quantitative research before validity can be addressed.

However, in qualitative research, reliability has been described as important to a lesser

extent than in quantitative studies. Orcher (2005) noted that qualitative researchers often

prefer the term "dependability" rather than reliability because reliability is often

associated with objective testing and the nature of qualitative research is subjective.

Validity of instrumentation refers to the extent to which an instrument measures

what it intended to measure (Orcher, 2005). Creswell and Plano Clark (2011) stated that

the validity of qualitative data concentrates more on determining if the findings reported

by the researcher are accurate, trustworthy, and credible. Both reliability and validity in

qualitative research may be enhanced through the triangulation of data. In quantitative

research, validity may be established by conducting statistical studies where results

gained from administering the instrument are compared and correlated to other results

(Orcher, 2005).

Due to strong reliability and validity in measuring teacher self-efficacy beliefs,

the researcher selected the TSES as an instrument for use in this study. The 12-item short

form of the TSES demonstrated reliabilities between 0.81 and 0.87 for the self efficacy

beliefs related to instructional strategies, classroom management, and student

engagement (Tschannen-Moran & A.W. Hoy, 2001). High reliabilities ranging from 0.95

to 0.98 were found between the short and long forms for each of the self-efficacy belief

categories, thus, the short form was selected for participant ease of use.

The TSES was refined and validated by Tschannen-Moran and A.W. Hoy (2001)

over the course of three separate studies. The first study tested 52 items on a sample of

224 subjects, including 146 preservice teachers and 78 inservice teachers. Participants

were asked to respond to items on the nine-point scale, and were additionally asked to

evaluate the importance of each item as it related to effective teaching on a scale of one to four. Tschannen-Moran and A.W. Hoy used factor analysis to determine variability among items, and subsequently reduced the scale from 52 items to 32 items. The 32 items had factor loadings from .595 to .78. The closer the factor loading to 1.0, the stronger the validity of an item.

In the second study conducted by Tschannen-Moran and A.W. Hoy (2001), 217 subjects, including 70 preservice teachers and 147 inservice teachers, tested the revised 32-item scale. Three factors were found to account for 51% of the variance among items: (a) efficacy for student engagement; (b) efficacy for instructional strategies; and (c) efficacy for classroom management. After analyzing the results of studies one and two, Tschannen-Moran and A.W. Hoy completed a second-order factor analysis which confirmed that a total score measuring teacher efficacy could be completed in addition to the three subscale factor scores. Finally, construct validity was measured in the second study by correlating the TSES with other measures. These findings revealed that the TSES was strongly correlated to both the Rand scale and the personal teaching efficacy measure developed by Gibson and Dembo. Overall findings of the second study led Tschannen-Moran and Hoy to conclude that validity of the TSES was strong, and the factors "were conceptually sound representations of the various tasks of teaching" (p. 798). However, while the instructional strategies and student engagement factors were strong, the classroom management factor was weaker.

Tschannen-Moran and A.W. Hoy (2001) conducted a third study to refine the TSES further and strengthen the classroom management factor. Additional questions

were added to encompass classroom management tasks. A final 36-item instrument was developed and administered to 410 subjects, including 103 preservice teachers, 255 inservice teachers, and 38 teachers who did not indicate if they were preservice or inservice teachers. Factor analysis and a scree test were conducted. The scree test was used to determine the number of items that should remain in the instrument. Results replicated the three identified factors from the second study: (a) efficacy for instructional strategies; (b) efficacy for classroom management; and (c) efficacy for student engagement. The TSES was further reduced to 24 items by selecting the eight items on each factor with the highest factor loadings. Reliabilities for these factors were considered to be high at 0.86 for instruction and management, and 0.81 for engagement. A 12-item short form of the TSES was also developed, and revealed high reliabilities between the short and long forms, ranging from 0.95 to 0.98.

Thus, the TSES was selected as an instrument in this study due to its reliability and validity in measuring teacher self-efficacy beliefs. Additionally, Kleinsasser's (2014) literature review meta-analysis found that the TSES was the most frequently cited teacher efficacy measure in the *Teaching and Teacher Education* journal, with 451 citations. Reliability of the researcher-developed survey was established through piloting the instrument with ten elementary-certified general education or special education teachers who were not the targeted population for the study. Pilot participants were asked to read and respond to the survey and provide feedback on clarity of questions, formatting, readability, ease of use, and wording. Based on feedback from the pilot

participants, the researcher added definitions of terms at the start of the survey and adjusted the formatting in several places for better readability.

Voluntary interviews were also conducted to support triangulation of data. The interviews consisted of several open-ended questions to elicit feedback on teacher perceptions of RTI, special education referral criteria, and self-efficacy. Interviews were audio-recorded with participant permission for accuracy. The researcher piloted the instruments with three elementary-certified general education or special education teachers who did not participate in the study. Pilot participants were asked for feedback on clarity of the interview questions, length of the interview, and general perceptions of the interview process. No pilot participants indicated that changes to the interview questions were necessary.

Data from the researcher-developed instruments was triangulated with responses on the TSES. According to Orcher (2005), validity and reliability are increased when the triangulation of qualitative data generates similar results with different instruments. Open-ended questions and interviews sought to obtain additional data regarding teacher self-efficacy beliefs, specifically within the context of special education referrals and RTI.

Design of the Study

Creswell and Plano Clark (2011) contended that mixed methods designs are particularly helpful when neither quantitative nor qualitative research alone can fully capture the complexity of a problem. Further, the limitations of one data source may often be offset through the integration of another approach with a different set of

strengths and limitations. This research study determined the relationship between elementary teachers' self-efficacy beliefs and their likelihood to refer students for potential special education services in an RTI model. Qualitative data provided the researcher with information related to teacher self-efficacy beliefs within an RTI model. A correlational analysis was then applied to determine the relationship between self-efficacy beliefs and the number of students teachers refer for potential special education eligibility. This approach was selected to best address the complexity of this topic.

A convergent parallel design was employed when collecting data. Creswell and Plano Clark (2011) described the convergent parallel approach as collecting both quantitative and qualitative data simultaneously and mixing data during interpretation of results. This approach allowed for equal prioritization of the methods. Data were analyzed separately and then reviewed for convergent or divergent themes, contradictions, and relationships between sources. Figure 3.1 illustrates the convergent parallel research design.

Figure 3.1

Convergent Parallel Design
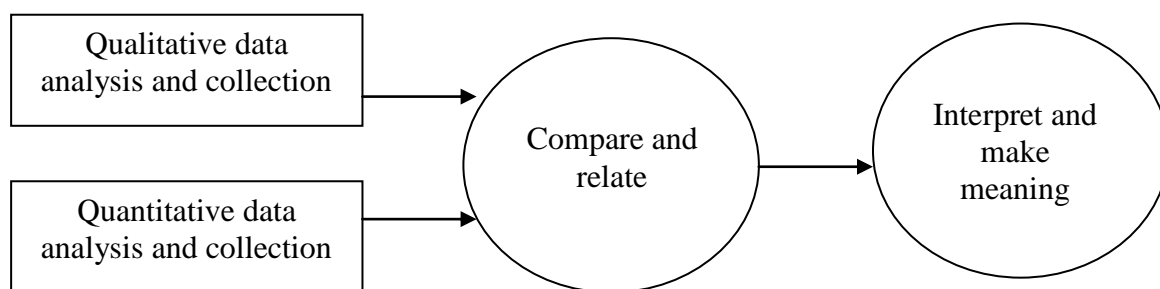
(Cresswell & Plano Clark, 2011)

Table 3.1 depicts the survey, open-ended, and interview items that address each research question in the study.

Table 3.1

Survey and Interview Items Addressing Research Questions

Research Question	Survey Question	Open Ended Question	Interview Question
1	1-14	16, 17, 18, 19	1-8
2	1, 2, 15	19	4, 8
3 – overall	Calculated means of 3a, 3b, 3c	16, 17, 18	3
3a	7, 11, 12, 14	16	5
3b	3, 5, 8, 10	17	6
3c	4, 6, 9, 13	18	7

The quantitative approach for this study involved the use of both descriptive and inferential statistics. Descriptive statistics were utilized to summarize the data. The mean, or average, was the most frequently utilized descriptive statistical approach for this study. However, according to Orcher (2005), when scores in a data set are unbalanced, calculating the mean may skew the distribution. In instances where the mean scores were skewed by uneven distribution, the range of scores and the mode score, or the number reported most frequently, were also reported in this study (Orcher, 2005). Correlational statistics were also applied in the study. While Orcher (2005) stated that there were "no

universally accepted set of data descriptors," (p. 150), Table 3.1 depicts the descriptors

suggested by Orcher that were used in this study.

Table 3.2:

Correlation Coefficient Descriptors

Value of r	Descriptor	Value of r	Descriptor
0.85 to 1.00	Very strong	-0.85 to -1.0	Very strong
0.60 to 0.84	Strong	-0.60 to -0.84	Strong
0.40 to 0.59	Moderately strong	-0.40 to -0.59	Moderately strong
0.20 to 0.39	Weak	-0.20 to -0.39	Weak
0.0 to 0.19	Very weak	0.0 to -0.19	Very weak

According to Orcher (2005), correlational methods provide researchers the

opportunity to investigate and describe relationships between two data sources for a

participant group. The two data sources correlated in this study were the number of

estimated special education referrals in a given year and teacher self-efficacy beliefs as

measured by the TSES. A correlation coefficient was calculated to determine the

strength of the relationship between these two data sources. The Pearson product-

moment correlation coefficient (Pearson r) was utilized. Orcher indicated that the

Pearson r is the most widely used method for calculating correlations.

The qualitative approach utilized for this mixed methods design consisted of

collecting data on teacher self-efficacy beliefs through multiple approaches. The online

survey required participants to rate their self-efficacy beliefs on the TSES, a nine-point

scale indicating the extent to which educators can control various factors related to teaching. The TSES comprised items three through fifteen of the online survey. Open-ended survey prompts developed by the researcher were also included in the online survey. Finally, voluntary interviews consisting of questions developed by the researcher were conducted. Hence, these methods of collecting qualitative data were paired with the use of descriptive and inferential statistics to provide a fuller understanding of the topic.

Procedures

The researcher contacted the authors of the TSES to obtain permission for use of the instrument in this study. Permission was received from both authors of the TSES. In addition to the TSES, the study required the development of a brief demographic questionnaire asking teachers to indicate the grade range they instruct, and their primary positions as special education teachers or general education teachers. Several open-ended response questions and interview questions related to the intersection of RTI, teacher self-efficacy, and special education referral were also included. The researcher piloted these tools with ten general education teachers and special education teachers who were not included in the study. These pilot participants were asked to review the tools developed by the researcher and provide feedback on the clarity, readability, and ease of use. The researcher then reviewed suggestions from the pilot participants and made changes as necessary to increase reliability and validity.

Additionally, the researcher obtained permission from the superintendent of schools in which the study was conducted by sending a request letter via regular mail and email. The researcher also contacted the superintendent's designee via email to obtain a

list of elementary general education and special education teachers in the district who instructed language arts.   Subsequently, the researcher received approval from the Research Ethics Review Board (RERB) at Immaculata University (Appendix D). A research assistant who completed the *Protecting Human Research Participants* course by the National Institute of Health supported the researcher in collecting data. Upon receiving approval from the RERB, the research assistant sent the electronic survey to recruited individuals, along with the electronic transmission of recruitment letters and consent forms.

Surveys were sent and received electronically via Google Forms via the Google Apps for Education site. Google Forms stored participant responses electronically in a password-protected spreadsheet accessible only to the researcher. Results were downloaded upon the close of the survey window. Participants had a four week window in which to complete the survey. Three email reminders were sent throughout the window. One reminder was sent from the Assistant Director of Special Education for School District X. The second reminder was sent from the research assistant and final reminders were sent from building principals. At the conclusion of the survey window, the survey was closed and electronic responses were no longer accepted.

Upon close of the survey window, the researcher explored data preliminarily by reading through the results and reviewing answers to open-ended questions and interviews. Data collected through Google Forms was downloaded as an Excel spreadsheet. Means for overall general teaching efficacy were calculated through Excel based on the administration and scoring guidelines for this instrument. Additionally,

means for teacher self-efficacy in instructional strategies, classroom management, and student engagement were calculated through Excel. Once these four means were computed for each survey participant, the results were organized and entered into Statistical Package for Social Sciences software (SPSS) for statistical analysis, along with the estimated number of special education referrals by participant. Pearson *r* correlations were conducted to determine the relationship of teacher-initiated special education referrals and teacher self-efficacy beliefs. The researcher coded responses by demographic variables. Qualitative survey data and interview responses were reviewed and organized by theme.

One week following the close of the survey window, the research assistant interviewed three general education teachers and three special education teachers who indicated their consent to participate in interviews through completion of the online interview interest form. Participants indicating their consent were divided into two subgroups for stratified random sampling: (a) general education teachers, and (b) special education teachers. According to Orcher (2005), this type of sampling improves random selection through stratification of relevant variables. As only three general education teachers indicated interest in an interview, all three were selected for participation. The research assistant then randomly drew the names of three special education teachers from subgroup B.

According to Lichtman (2013), qualitative data should be coded, categorized, and finally, conceptualized. The researcher coded qualitative data for open-ended survey responses and interviews in Excel. Responses were coded by general themes. Following

the initial coding of responses, Lichtman suggested revisiting the initial coding

procedure, collapsing and renaming the codes as necessary. The researcher reviewed the

initial codes and sorted them into like categories.   The researcher then assigned a sub-

code to each response indicating major themes. For responses that included more than

one theme, multiple sub-codes were assigned.   Following the sub-code assignment, the

researcher again sorted the responses in Excel, identified redundancies in sub-codes, and

then re-assigned codes accordingly. Finally, the researcher identified key concepts from

the data to interpret results. According to Lichtman, no more than five to seven concepts

should be revealed by this process, hence the researcher limited the number of themes

and organized single responses that did not align with general themes into the category of

"other."

Interview responses were audio-recorded with participant permission and

transcribed, reviewed, and coded by theme. Individuals selected for interviews

coordinated a mutually convenient time and place with the research assistant in which the

interviews occurred. Prior to conducting the interview, the research assistant reviewed

the consent forms with participants to ensure they were aware of their rights as research

subjects and the duration of the interview. The research assistant also notified the

interview participants that their anonymity would be maintained through a coding system

that provided each interviewee with a pseudonym (Interviewee A, B, C, etc.).

Data Analysis

SPSS was used to determine correlations between the number of teacher-initiated

referrals for special education against the following variables as calculated by the TSES:

(a) overall teaching self-efficacy, (b) self-efficacy for instructional strategies, (c) self-efficacy for classroom management, and (d) self-efficacy for student engagement. Correlational coefficients were assigned to describe the strength of the relationship between the factors.

Qualitative data from open-ended survey responses and interview responses were reviewed and coded by theme. According to Lichtman (2013), "the goal of qualitative analysis is to take a large amount of data that may be cumbersome and without any clear meaning and interact with it in such a manner than you can make sense of what you gathered" (p. 250). The researcher followed Lichtman's six steps for developing themes. First, the qualitative data was dissected and initial codes were assigned. The researcher then revisited the initial codes, refining and collapsing similar codes. Next, an initial set of categories were developed and each coded item was assigned a category. The researcher then added subcategories, and refined and collapsed categories as needed. Finally, the researcher derived concepts and themes from the categories of information. The researcher then viewed these themes in concert with the quantitative correlational data to determine if any patterns emerged among the quantitative and qualitative data.

Summary

The purpose of this study was to investigate the self-efficacy beliefs of general education classroom teachers and special education teachers in an RTI problem-solving model spanning kindergarten through sixth grade. Additionally, the study sought to determine the relationship between teacher self-efficacy beliefs and the estimated number of students they refer for potential special education eligibility in a given year.

Participants were recruited from a single, large suburban school in southeastern

Pennsylvania. These subjects had the opportunity to respond to survey questions and/or

participate in interviews. The researcher gathered data following the university protocol

for RERB approval. After data was collected, SPSS was used to determine correlations

between teacher-initiated special education referrals and self-efficacy variables. The

researcher also coded qualitative data to explore themes emerging in the open-ended

survey questions and interview questions. Both quantitative and qualitative data sets

were viewed in conjunction with one another for a mixed method approach that provided

a fuller understanding of the issue at hand. Results are reported in Chapter Four.

Chapter Four – Results

Introduction

The purpose of this study was to: (a) determine the self-efficacy beliefs of

kindergarten through grade six general and special education teachers in an RTI problem-

solving model, (b) analyze the relationship between teacher self-efficacy beliefs and the

number of teacher-initiated special education referrals in an RTI problem-solving model,

and (c) determine how teacher self-efficacy for instructional strategies, classroom

management, and student engagement relate to the number of teacher-initiated special

education referrals in an RTI problem-solving model. Chapter four reports the findings

of the surveys, open-ended questions, interviews, and inferential statistics.

Demographics

A total of 363 educators from a single, large, suburban district, District X, were

recruited to complete the electronic survey. Fifty-three (N=53) educators participated.

One respondent indicated in the qualitative component of the survey that his/her role was

that of a speech and language pathologist, therefore, all responses from that respondent

were excluded as the intended audience was general education and special education

classroom teachers. Hence, fifty-two (N=52) responses were reported.

Educators were initially asked whether they instructed primary grades

(kindergarten through grade three), intermediate grades (grades four through six), or both

primary and intermediate grades (kindergarten through grade six). Respondents were

also asked to indicate whether they were general education classroom teachers or special

education teachers. Table 4.1 provides demographic information on the survey

participants.

Table 4.1

Demographic Information of Survey Respondents - Characteristics

Characteristic	*n*	%
Role		
General Education Teacher	29	55.8%
Special Education Teacher	23	44.2%
Grade Range		
Primary	19	36.5%
Intermediate	25	48.1%
Both primary and intermediate	8	15.4%
General Education Teachers		
Primary	15	51.7%
Intermediate	14	48.3%
Both primary and intermediate	0	0%
Special Education Teachers		
Primary	4	17.4%
Intermediate	11	47.8%
Both primary and intermediate	8	34.8%

Demographic information indicated that 56% of survey respondents were general

education teachers, while 44% of participants were special education teachers. Overall,

37% of respondents taught students in primary grades, 48% instructed the intermediate

grades, and 15% taught students in both primary and intermediate grades. Of the general

education teachers, primary and intermediate grade respondents were near equal, with

52% of general educators instructing the primary grades and 48% of instructors teaching

intermediate grades. Greater variability in grade range was found among special

educators, with 48% instructing intermediate grades, 17% teaching primary grades, and

35% teaching students in both primary and intermediate grades.

Three general education teachers and three special education teachers were

selected for interviews through stratified random sampling. A total of 11 teachers

responded that they were interested in participating in interviews. Of the 11respondents,

three were general education teachers, seven were special education teachers, and one

was a speech and language pathologist who was excluded from participation. All three

general education teachers were selected, as the target number of general education

interviews was three. Two general education teachers, coded as GE-A and GE-C,

indicated they instructed students in the primary grades, while one general educator, GE-

B, taught at the intermediate level. Three out of the seven special education teachers who

expressed interest were randomly selected for interviews.   Two special education

teachers, SE-B and SE-C, taught students in the intermediate grades, while one special

educator, SE-A, taught students in both primary and intermediate grades.

Research Question One

What are the self-efficacy beliefs of kindergarten through grade six general and special

education teachers in an RTI problem-solving model?

Likert-scale survey data. The first research question sought to determine the

self-efficacy beliefs of educators in a single school district implementing an RTI

problem-solving model. Questions from the TSES (items three through 14 of the survey)

required respondents to indicate the extent to which they were able to control various

factors related to instructional strategies, classroom management, and student

engagement on a nine-point scale, with 1 indicating "nothing," to 9 indicating "a great

deal." Scores were computed for each area, as well as a composite score for overall

teacher self-efficacy. Results are reported in Table 4.2.

Table 4.2

Teacher Self-Efficacy Beliefs – Means from the TSES

Characteristic	Mean Efficacy for Instructional Strategies	Mean Efficacy for Classroom Management	Mean Efficacy for Student Engagement	Overall Mean Efficacy
All respondents (*N*=52)	7.3	7.3	6.9	7.1
Role				
General education teacher (*n*=29)	6.9	7.0	6.7	6.9
Special education teacher (*n*=23)	7.7	7.5	7.2	7.5
Grade Range				
Primary (*n*=19)	7.0	7.2	6.6	6.9
Intermediate (*n*=25)	7.8	7.6	7.2	7.5
General Education Teachers				
Primary (*n*=15)	6.9	7.0	6.9	7.0
Intermediate (*n*=14)	6.9	7.1	6.4	6.8
Special Education Teachers				
Primary[a] (*n*=4)	7.0	6.9	6.5	6.8
Intermediate (*n*=11)	8.0	7.8	7.5	7.8
Primary & int. (*n*=8)	7.7	7.4	7.2	7.4

[a]Interpret with caution due to small sample size.

The overall mean self-efficacy score for all survey respondents was 7.1 on a nine-point scale. Scores for individual teachers ranged from 3.8 to 8.8, with a median score of 7.3. When data was disaggregated by role, the mean averages for special education teachers in all areas were greater than the mean for general education teachers surveyed. To determine whether there was a statistically significant difference in the responses of general education teachers and special education teachers, an independent samples t test was computed. The independent samples t test revealed a significant difference in the scores for self-efficacy in instructional strategies for general education teachers ($M = 6.9$) and special education teachers ($M = 7.7$); $p = .045$. Differences in scores for overall self-efficacy, self-efficacy for classroom management, and self-efficacy for student engagement were statistically insignificant.

When accounting for differences in teaching primary or intermediate grades, general education teachers scored similarly regardless of age range taught. The mean for general education teachers' efficacy for instructional strategies was 6.9 in both primary and intermediate grades. Efficacy for classroom management was also similar, with primary general educators scoring a mean of 7.0 and intermediate general education teachers averaging 7.1. The greatest variability among general education teachers occurred in the efficacy for student engagement category. Primary general education teachers reported they were better able to engage students than intermediate general educators, scoring 6.9 and 6.4, respectively. Overall mean self-efficacy for primary general education teachers was 7.0, while self-efficacy for intermediate general educators was 6.8.

When disaggregating data for special education teachers by grade range, it was important to note that the results for primary special education teachers must be interpreted with caution due to a small sample size of only four respondents. Of the four primary special education teachers who responded, the mean for overall efficacy was 6.8, slightly below the 7.0 score for primary general educators. Intermediate special education teachers had the highest self-efficacy scores of all groups in overall efficacy, as well as for all subsets. The mean self-efficacy scores for intermediate special education teachers was 7.8, while their scores for instructional strategies, classroom management, and student engagement were 8.0, 7.8, and 7.5, respectively. Special education teachers who taught students in both primary and intermediate grades reported self-efficacy scores greater than their general education colleagues in all areas, regardless of the grade range taught. Mixed level special education teachers scored a 7.7 for instructional strategies, 7.4 for classroom management, 7.2 for student engagement and 7.4 for overall efficacy.

Open-ended survey data. Survey respondents were asked to answer three open-ended questions relating specifically to self-efficacy in instructional strategies, classroom management, and student engagement. The researcher assigned initial codes to the qualitative comments, reviewed the codes, and then collapsed similar items and recoded the data. Sub-codes were then assigned to describe major themes that emerged in the responses. For responses that included more than one theme, multiple sub-codes were assigned. Following the sub-code assignment, redundancies in sub-codes were identified and collapsed. Finally, the researcher then re-assigned sub-codes accordingly.

Instructional strategies. Survey participants were asked to respond to the question, "Describe what impact RTI has had (if any) for you as a teacher on your ability to implement instructional strategies." Of the 52 total survey participants, eight respondents did not provide answers to this question. The remaining 44 responses were then grouped into themes, depicted in Table 4.3. Several answers included multiple themes within a single response, thus the total number of responses was greater than 44.

Table 4.3:

Themes in Self-Efficacy for Instructional Strategies – Open-Ended Survey

Theme	Total Responses (N=53)	General Ed. Responses (n=28)	Special Ed. Responses (n=25)
I am better able to meet specific student needs.	19 35.8%	11 39.3%	8 32%
I am better able to implement specific instructional strategies.	7 13.2%	2 7.1%	5 20%
Smaller groups have a positive impact on learning.	7 13.2%	4 14.3%	3 12%
RTI has had a limited impact on my implementation of instructional strategies.	6 11.3%	4 14.3%	2 8%
RTI has had no impact on my ability to implement instructional strategies.	5 9.4%	2 7.1%	3 12%
Other – positive	4 7.5%	2 7.1%	2 8%
RTI interventions have helped guide my general instruction.	3 5.7%	2 7.1%	1 4%
Other - negative	2 3.8%	1 3.6%	1 4%

Educators most frequently noted that RTI allowed them to better meet specific student needs, with 19 responses (35.8%) revealing this theme. A general education teacher instructing the intermediate grades responded, "RTI has allowed me to hone in more specifically on what students need, creating clear goals and targets for their learning as well as growth" (GI-7). More specifically, 13 of the 19 responses cited benefits for students who needed additional support beyond core instruction. One special education teacher noted, "RTI has allowed us to provide supports for every student no matter what level they are at. It has made the student the center of the instruction instead of the materials" (SB-2).

In addition to RTI's impact on teachers' abilities to better meet unique student needs, 13.2% of responses noted a better ability to employ varied instructional strategies, while another 13.2% indicated that small group instruction positively impacted learning. Moreover, 5.7% found that RTI interventions guided their general instruction. Yet, not all survey participants felt RTI positively impacted their ability to implement instructional strategies. Two general education teachers and three special education teachers reported that RTI had no impact on their ability to deliver instruction. An additional four general educators and two special educators expressed that RTI had a limited impact on their instructional strategies. More specifically, two general education teachers noted limited impact for their instruction of tier one students not receiving additional interventions. Respondent GP-11 indicated, "I don't feel like RTI has a huge impact for Tier One students, but I do think it is very helpful for getting the Tier Two and Tier Three students some targeted instruction they need."

Seven survey respondents reported that small group interventions provided through tiers two and three positively impacted their ability to implement instructional strategies. Lower student-teacher ratio, the ability to target skill deficits, and teach specific strategies were all cited as benefits of RTI small group instruction. Four responses also indicated that RTI has helped better guide their general instruction. General education teacher respondent GP-14 summarized:

> RTI has had a tremendous impact on my professional growth and understanding of how to help diagnose where a student struggles, help to give them the support they need to succeed, and the ability to analyze growth the student is/is not making. It has helped to insure I tailor my instruction to meet the needs of all my students.

Finally, six responses recorded were mentioned only once, thus these answers were not categorized into themes. Single responses were categorized as either "other – positive," or "other – negative." Responses coded as "other-positive" noted that collaboration and the use of data to identify learning problems were beneficial to their instruction. Survey responses coded as "other-negative" included the belief that scripted programs associated with RTI were not engaging and that instructional differences among multiple teachers were problematic. Overall, 75.5% of open-ended survey responses indicated a positive impact of RTI on teachers' abilities to implement instructional strategies. Yet, 20.8% found no impact or limited impact on self-efficacy for instructional strategies, while 3.8% indicated negative effects.

Classroom management. The next open-ended survey question asked

respondents to "Describe what impact RTI has had (if any) for you as a teacher on your

ability to implement classroom management techniques." Of the 52 total responses

recorded, ten survey participants did not respond to this question. The remaining 42

responses were then grouped into themes, represented in Table 4.4. One response

incorporated multiple themes, thus, 43 responses are noted.

Table 4.4:

Themes in Self-Efficacy for Classroom Management – Open-Ended Survey

Theme	Total Responses (*N*=43)	General Ed. Responses (*n*=22)	Special Ed. Responses (*n*=21)
RTI has had no impact on my ability to implement classroom management techniques.	21 48.8%	11 50%	10 47.6%
Flexible groups and transitions associated with RTI groups pose classroom management challenges.	5 11.6%	3 13.6%	2 9.5%
Other - general	5 11.6%	2 9%	3 14.3%
Other - negative	4 9.3%	3 13.6%	1 4.8%
Other - positive	4 9.3%	2 9%	2 9.5%
Targeted instruction reduces frustration and is helpful to classroom management.	2 4.7%	1 4.5%	1 4.8%
Small groups support stronger classroom management.	2 4.7%	0 0%	2 9.5%

Nearly half (48.8%) of the comments indicated that RTI had no impact on the teacher's ability to implement classroom management techniques. Of the remaining responses, eight (18.6%) reported that RTI positively impacted their ability to implement classroom management techniques in the following areas: (a) targeted instruction reduces frustration, (b) smaller groups allow for better classroom management, and (c) other positive responses. General education teacher GP-15referenced the positive impact of targeted instruction on classroom management, stating, "Often times, there are fewer disruptive behaviors because no one is being expected to perform outside of their level. Less frustration = fewer disruptions." Respondent SI-4 further indicated that the smaller student-teacher ratio in groups made classroom management, "much easier at times." Responses coded as "other positive" included the following four single replies: (a) increased collaboration among staff, (b) better understanding of students, (c) structured schedule reduces misbehavior, and (d) teacher use of RTI framework for behavior.

However, an additional 11.6% of responses believed that the flexible groups and/or transitions associated with the grouping of students posed challenges for classroom management. Respondent GP-4 summarized:

My concern with RTI is that our team all goes in different directions. I have kids that are from other classrooms, and other teachers have mine. We often have a difficult time managing the group we are given, if it is a large group, because we are not as familiar with the kids and their needs. We spend the first 5-10 minutes sometimes just trying to get them settled down.

Four responses coded as "other negative" included: (a) a lack of consistency in behavioral expectations of teachers instructing small groups, (b) challenges cited by an Emotional Support teacher in providing instruction and managing behavior, (c) too much time required outside the school day to implement RTI properly, and (d) challenges with RTI groups being scheduled at the end of the day.

Finally, five additional responses (11.6%) were coded as "other – general." These responses did not provide answers that indicated the effects of the impact, but rather, provided general comments. For example, respondent GI-5 noted, "Talking through student/class needs informally with colleagues or formally with the team has resulted in changes to management systems." In this instance, the resulting changes were not further described, thus the researcher could not draw a conclusion on the impact of such changes.

Student engagement. Survey participants were asked to, "Describe what impact RTI has had (if any) for you as a teacher on your ability to increase student engagement." Eleven of the 52 total survey participants did not respond to this question. The remaining 41 responses were then grouped into themes, represented in Table 4.5. Similar to the responses found in the instructional strategies and classroom management questions, multiple themes were evident in several responses, thus, the total number reported in themes is greater than 41.

The majority of responses related to RTI's impact on teacher self-efficacy for student engagement were reported as positive, with 29 out of 45 comments (64.4%) indicating positive effects. The most frequently cited benefit of RTI on student engagement was noted to be small group instruction. Survey respondent SP-2 stated, "It

is easier to engage students in small group. They can't hide…so I have an understanding of what everyone is doing/learning." Further, four respondents (8.9%) indicated that targeted instruction kept students more engaged, while another three (6.7%) reported that the resources provided through RTI were engaging. Three responses (6.7%) indicated that RTI allowed them to explore a variety of teaching techniques, thus, increasing student engagement, while two (4.4%) felt that students better understood expectations for learning and were more engaged as a result. Three responses were referenced only one time each, thus, those responses were coded as "other positive" and included the following: (a) cooperative learning groups keep students engaged, (b) he structured schedule promotes engagement, and (c) teacher collaboration supports student engagement through better knowledge of students.

Although the majority of responses indicated that RTI had a positive effect on teacher ability to increase student engagement, nine respondents (20%) felt RTI had no impact in this area, while an additional five (11.1%) reported various negative impacts. The following areas were cited by teachers as factors contributing to difficulty engaging students: (a) the timing of RTI groups at the end of the day is problematic, (b) flexible groups cause challenges because students are less likely to listen to someone who is not their regular classroom teacher, (c) RTI programs are not engaging, (d) leveling in upper grades creates a stigma, and (d) "limited impact." Two responses provided general information rather than directly answering the question, thus, those responses were coded as "other – general."

Table 4.5:

Themes in Self-Efficacy for Student Engagement – Open-Ended Survey

Theme	Total Responses (*N*=45)	General Ed. Responses (*n*=25)	Special Ed. Responses (*n*=20)
Small groups increase my ability to engage students.	14 31.1%	6 24%	8 40%
RTI has had no impact on my ability to engage students.	9 20%	5 20%	4 20%
Other - negative	5 11.1%	4 16%	1 5%
Targeted instruction reduces frustration and helps better engage students.	4 8.9%	2 8%	2 10%
Other - positive	3 6.7%	2 8%	1 5%
Resources provided through RTI are engaging.	3 6.7%	2 8%	1 5%
RTI has allowed me to explore a variety of teaching strategies which have increased student engagement.	3 6.7%	2 8%	1 5%
Other - general	2 4.4%	2 8%	0 0%
Students better understand expectations for learning and are more engaged.	2 4.4%	2 8%	0 0%

Summary. To better gauge the overall impact of RTI on teacher self-efficacy

beliefs, the researcher assigned each response a sub-code as either "positive impact," "no

impact/limited impact," "negative impact," or "mixed impact." Table 4.6 depicts the

results of that coding from the open-ended survey.

Table 4.6

Impact of RTI Across All Self-Efficacy Domains – Open-Ended Survey

Impact	Instructional Strategies (*N*=37)	Classroom Management (*N*=37)	Student Engagement (*N*=41)
Positive impact	33 89.2%	3 8.1%	26 63.4%
Negative Impact	1 2.7%	7 18.9%	2 4.9%
No Impact/Limited Impact	0 0%	21 56.8%	9 22%
Mixed Impact	3 8.1%	1 2.7%	2 4.9%
Could not be coded	0 0%	5 13.5%	2 4.9%

Open-ended survey data found that the majority of responses indicated a positive impact of RTI on teachers' abilities to implement instructional strategies (89.2%) and better engage students (63.4%). However, 56.8% saw no impact or limited impact of RTI on their ability to implement classroom management techniques. Several themes in the open-ended responses related to the specific elements of RTI positively influencing teacher self-efficacy were evident. The positive impact of small groups and teacher ability to target instruction to meet student needs were noted across the three domains of instructional strategies, classroom management, and student engagement. Figure 4.1 depicts the frequency with which these specific elements were mentioned in each domain of teacher self-efficacy.

Figure 4.1

Positive Impacts by Domain - Open-Ended Responses

Positive Impact of Small Group Instruction — 30% n=7, 9% n=2, 61% n=14

Better Able to Target Instruction/Meet Student Needs — 9% n=2, 9% n=2, 82% n=19

■ Instructional Strategies
■ Classroom Management
■ Student Engagement
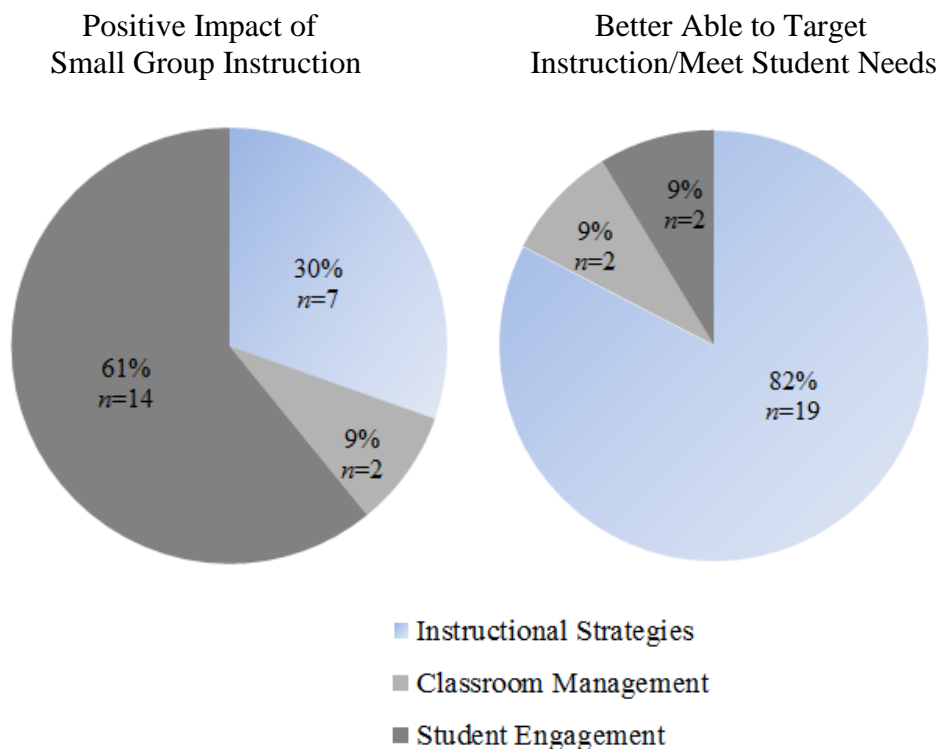
When data was disaggregated by role, overall, special education teacher responses indicated a more favorable view towards the impact of RTI on their self-efficacy beliefs than did general education teachers. Fifty-nine percent of special education teacher responses cited positive impacts of RTI, whereas 50.7% of general education teacher responses indicated positive effects. Similarly, general education teachers reported negative impacts of RTI on their self-efficacy beliefs at nearly double what special educators reported, with 14.7% of general educators and 7.6% of special education teachers citing negative results. Both general education teachers and special education teachers reported that RTI had no impact or a limited impact on their ability to implement

teaching techniques at roughly the same rate, 29.3% and 28.8% respectively. Data is

disaggregated by role in Table 4.7.

Table 4.7

Impact of RTI on Self-Efficacy Beliefs By Role – Open-Ended Survey

Impact	Instructional Strategies		Classroom Management		Student Engagement	
	Gen. Ed. *n*=18	Spec. Ed. *n*=19	Gen. Ed. *n*=18	Spec. Ed. *n*=19	Gen. Ed. *n*=21	Spec. Ed. *n*=20
Positive impact	15	18	2	1	12	14
	83.3%	94.7%	11.1%	5.3%	57.1%	70%
Negative Impact	1	0	4	3	1	1
	5.6%	0%	22.2%	15.8%	4.8%	5%
No Impact/Limited Impact	0	0	10	11	5	4
	0%	0%	55.6%	57.9%	23.8%	20%
Mixed Impact	2	1	1	0	2	0
	11.1%	5.3%	5.6%	0%	9.5%	0%
Could not be coded	0	0	1	4	1	1
	0%	0%	5.6%	21%	4.8%	5%

Interviews.   Interviews were conducted to explore more fully the impact of RTI

on teacher self-efficacy. Three general educator interviewees and three special educator

interviewees were asked to elaborate on the impact of RTI on their abilities to implement

instructional strategies, classroom management, and student engagement.

Instructional strategies. Three of the six participants (50%) specifically cited the

data gained from the RTI process as having positive effects. Interviewee SE-C

elaborated that RTI has, "provided me with more data-driven information that I might not

have necessarily had a few years ago." The ability to implement effective strategies was

also noted by two interviewees (33.3%) as a positive outcome of RTI. Additionally,

collaboration associated with the RTI process emerged as a theme, with two interview participants (33.3%) noting its positive effects. SE-B explained, "I would say it allows for a lot more collaboration. We're constantly meeting to look at data and collect data, review data…and kind of reaching out to each other to look at different resources."

All three special education teachers interviewed felt RTI positively impacted their ability to implement instruction. However, general education teacher responses were mixed. One general education teacher, GE-C, felt RTI had an "extremely positive" impact on her instruction and did not mention any negative effects. Yet, interviewee GE-B did not hold a favorable view of RTI's impact on teaching. GE-B cited large class sizes, challenges with instructing students from other homerooms during intervention time, and perceived philosophical differences between RTI and the inclusion of special education students, as problematic. Although GE-A stated that RTI had a limited impact on his/her ability to deliver instruction, the use of assessment data to focus instruction was noted as a strength of RTI.

Classroom management. Three of the interviewees (50%) stated that instructing students in smaller groups helped them better maintain classroom management, while two interview participants (33.3%) felt the focused instruction better helped students stay on task. Two special education teachers indicated that RTI has given them a better understanding of why behaviors may be occurring and how to intervene. SE-C commented:

> RTI helps me understand more why [students] may be making some of those
> [poor] choices. Maybe it's because they are frustrated with a particular task that

they've been given that is an area of weakness identified through RTI… so that

helps me be a little more sensitive to what may be occurring and maybe why they

are reacting the way they are.

Three interviewees (50%) expanded on this idea, implying that RTI required them to

implement motivational techniques and incentives to reach students with behavioral

needs.

Echoing some of the themes in the open-ended survey data, two general education

teachers, GE-A and GE-B, felt that the flexible grouping of students posed classroom

management challenges. The challenges referenced by the interviewees included the

time required to get to know a different group of students they did not see on a regular

basis, as well as consistency of expectations between teachers.

Student engagement. Four interviewees (66.7%), three special education

teachers and one general education teacher, reported that they were better able to engage

students as a result of RTI. Additionally, another general education teacher, GE-C, noted

that students receiving the most intensive interventions were more engaged, while

students "in the middle" were less engaged. Of the four teachers who responded that they

were better able to engage students, two of the four teachers specifically cited the positive

impact of small groups on increasing student engagement. Special education teacher, SE-

B, indicated that small groups permitted greater engagement because:

They [the students] know it's something that they are struggling with. We try to

approach it and say this is to help you. We know it's a struggle, we are going to

try some new techniques with you guys to help you to be more successful. So I

think that helps them know that they are getting what they need in order try to

apply it in the classroom.

No additional themes related to student engagement were apparent in the

interviews. The following comments were each noted only once by a single interviewee:

(a) faster-paced lessons better engage students; (b) the collaboration associated with RTI

supports student engagement; (c) students are less engaged as a result of RTI; (d) I am

better able to engage students with appropriate materials associated with RTI; (e) students

understand the language of reading; and (f) scripted RTI programs are not engaging.

Summary. The researcher categorized interview responses for RTI's impact on

teacher self-efficacy in each domain as having: "only positive impact," "only negative

impact," or "mixed impact – both positive and negative." Table 4.8 summarizes the

results of that coding.

Table 4.8

Impact of RTI Across All Self-Efficacy Domains – Interviews

Impact	Instructional Strategies	Classroom Management	Student Engagement
Only positive impact	4	2	4
	66.7%	33.3%	66.7%
Only negative impact	1	1	1
	16.7%	16.7%	16.7%
Mixed impact – both	1	3	1
positive and negative	16.7%	50%	16.7%

Responses for both the instructional strategies and student engagement domains

were similar with four out of six interviewees (66.7%) noting only positive impacts of

RTI on their ability to implement instructional strategies, one (16.7%) citing only

negative effects, and the remaining interviewee reporting mixed impacts. However, the
classroom management responses found three interviewees (50%) indicating mixed
impact of RTI on their management, two (33.3%) finding only positive impacts, and one
respondent (16.7%) noting only negative effects. It is important to note that a single
interviewee, GE-B, was the only respondent reporting "only negative effects" across all
three domains.

Research Question Two

What is the relationship between teacher self-efficacy beliefs and the number of teacher-
initiated special education referrals in an RTI problem-solving model?

    Estimated referrals. The online survey required participants to estimate the
number of general education students they "may refer to the Child Study Team (CST) in
a given year for consultation and possible special education evaluation." Teachers
surveyed referred an average of 2.1 students to the CST per year for possible special
education evaluation. The range of referrals spanned from zero to "more than ten." The
nine survey respondents who reported zero referrals were all special education teachers.
The two survey respondents who reported making more than ten referrals per year were
also special education teachers.

    All general education teachers surveyed referred at least one student per year to
the CST, ranging from one to six referrals. Although the greatest variability occurred
within the range of referrals reported by special education teachers, the mode score
revealed that special education teachers most frequently referred zero general education
students for possible evaluation (n=10). To determine whether there was a statistically

significant difference between the number of referrals made by general education teachers versus special education teachers, a one-way ANOVA was conducted and found there was not a statistically significant difference between the two means ($p=.7$). Table 4.9 depicts the mean, range, and mode scores for both general educators and special educators. Disaggregated results are included in Table 4.10.

Table 4.9

Estimated Referrals – Descriptive Statistics

Characteristic	Mean	Range	Mode
General education teacher (*n*=29)	2.5	1-6	2
Special education teacher (*n*=23)	1.4	0-10+	0

Table 4.10

Estimated Referrals by Characteristic

Characteristic	Estimated referrals in a given year
Role	
General education teacher (*n*=29)	2.5
Special education teacher (*n* =23)	1.4
Grade Range	
Primary (*n* =19)	2.3
Intermediate (*n*=23)	1.5
General Education Teachers	
Primary (*n*=15)	3
Intermediate (*n*=14)	2
Special Education Teachers	
Primary[a] (*n*=4)	3.7
Intermediate (*n*=11)	1.1
Both primary and intermediate (*n*=8)	1.0

[a]Interpret with caution due to small sample size.

Open-ended survey data. Survey participants were asked to respond to the

following open-ended survey prompt: "Describe what impact RTI has had (if any) on

your likelihood to refer general education students to the Child Study Team (CST) for

consultation, which may result in special education evaluation." Of the 52 participants,

eleven did not answer this question. The 41 remaining responses were grouped into

themes depicted in Table 4.11. Due to several responses encompassing multiple themes,

the total number of themes is equal to 45.

Table 4.11

Themes for RTI's Impact on Referral – Open-Ended Survey

Theme	*n*	%
Additional data exists to support/refute need for a referral.	15	33.3%
Interventions are attempted before making a referral.	10	22.2%
Limited impact/no impact	7	15.6 %
I am a special educator and do not refer general education students.	6	13.3%
Other	4	8.9%
I have not made any referrals.	3	6.7%

The most frequently cited impact of RTI on special education referrals was

reported as the existence of additional data used to support or refute the need for referral.

15 responses (33.3%) were categorized into this theme. Special education teacher SP-4

explained, "I feel that when I refer students to the CST there is more data to back up my

decision that a child requires more differentiation or help than I or the classroom teacher

can give them." In addition to providing additional data, ten teachers (22.2%) also indicated that interventions were attempted prior to making referrals. SP-2 summarized, "If students are in a tier 2 or 3 and still struggling, then I realize there may be more than just a missed skill keeping them from mastering the skills needed."

Respondent SI-10 commented explicitly on how his/her self-efficacy beliefs influenced the decision to refer:

Feeling confident in implementing interventions definitely does impact the likelihood of me referring students when I see they are in need of additional supports. I feel other teachers who are not comfortable with implementing interventions are more likely to put off referring a student to the CST.

Yet, seven of the survey respondents reported that RTI had little or no impact on their likelihood to refer students to the CST for potential special education evaluation. A primary general education teacher, GP-5, stated, "I refer students based on my own knowledge of student and not based on RTI." Two of the seven teachers who replied that RTI had limited impact on referrals noted that this was because they taught the intermediate grades and most student learning difficulties were already diagnosed by that point.

Three special education teachers commented that they have not referred students to CST, but did not indicate why. However, six special education teachers indicated that they had not referred general education students to the CST specifically due to their roles as special educators. SB-4 stated, "Since I am not a general education teacher I am not in a position to refer general ed. students for special ed. evaluation." Despite SB-4's

contention, thirteen special education teachers reported that they refer at least one general education student to the CST per year. Finally, four responses were mentioned only once each and were categorized as "other." These responses included: (a) deeper reflection on student needs prior to referral; (b) RTI lessens referrals; (c) better understanding of student needs prior to referral; and (d) collaboration with other personnel prior to referral.

Correlational data. Research question two sought to examine the impact of teacher self-efficacy beliefs on special education referrals. To determine the relationship between overall teacher self-efficacy and estimated referrals in a given year, a Pearson *r* correlation was calculated. The Pearson *r* correlation between overall teacher self-efficacy for all participants in the study and the number of estimated referrals in a given year was -.282. According to Orcher (2005), Pearson *r* correlations between 0.20 and 0.39 and -0.20 to -0.39 are considered weak correlations. However, the significance level, or *p* value, for this study was set at .05, with a *p* value less than 0.5 indicating statistical significance. The *p* value for this study was .043. Thus, correlational data revealed a weak, but significant, correlation for overall teacher self-efficacy and the number of students referred for potential special education evaluation.

Due to the wide range of referrals reported by special education teachers, Pearson *r* correlations were calculated for each subgroup of survey respondents – general educators and special educators. The Pearson *r* correlation for general education teachers was -.216, revealing a weak, inverse relationship between teacher self-efficacy and special education referrals. The *p* value for the general education teacher subgroup

was .261. As *p* values of less than .05 are considered significant, these data revealed the

results for the general education teacher subgroup were not statistically significant.

However, data for the special education teacher subgroup revealed different

results. The Pearson *r* correlation for overall teacher self-efficacy and special education

referrals for the special education teacher subgroup was -.452. According to Orcher

(2008), an *r* value between -.40 and -.59 indicates a moderately strong, inverse

relationship. The *p* value for this relationship was .031, indicating the relationship was

statistically significant.

Table 4.12

Relationship Between Overall Teacher-Self Efficacy and Referrals – By Role

Respondents	Value of *r*	Value of *p* (Sig. – 2 tailed)
Total – General Education and Special Education Teachers (*N*=52)	-.282	.043*
General Education Teachers (n= 29)	-.216	.261
Special Education Teachers (n=23)	-.452	.031*

*p < 0.05.

Interviews. Three special education teachers and three general education

teachers interviewed were asked to describe the impact of RTI on their likelihood to refer

general education students to the CST for consultation and potential special education

evaluation. Four of the six interviewees (66.7%), two general education teachers and two

special education teachers, indicated that they use the data from RTI progress monitoring

as part of their decision to refer students for potential special education services. One general education teacher (GE-B) and one special education teacher (SE-C) also noted they engage in more collaborative conversations regarding students when considering referral. GE-B and SE-C also indicated that RTI has resulted in a stronger referral process. SE-C stated:

> A few years ago I would have said…if there was a problem in your classroom you'd be bringing them up to Child Study. It didn't matter whether it was a true, ongoing problem or it was something that just happened in the last few weeks. And I think now our Child Study referrals are a little more purposeful.

General education teacher, GE-C, agreed, indicating he/she was less likely to refer students to special education as a result of RTI. Yet, GE-B indicated that RTI had limited impact on his/her likelihood to refer students, while GE-A stated that RTI was a factor in referral decisions, but "not the be all and end all." An additional comment made by GE-A suggested a relationship between self-efficacy beliefs and the decision to refer. GE-A indicated, "I refer them because I feel inadequate to meet their needs because most of the things I've tried have not been successful."

Finally, all six interviewees referenced student behavior as a potential reason they would refer students to the CST. Behaviors mentioned included: acting out, emotional concerns, inattention/difficulty focusing, and work refusal. While behavior was mentioned by all interviewees as a reason for referral, it was unclear whether these behaviors were specifically evident within the context of RTI, or in general.

Research Question Three

How does teacher self-efficacy for: (a) instructional strategies; (b) classroom

management; and (c) student engagement relate to the number of teacher-initiated

special education referrals in an RTI problem-solving model?

      Open-ended survey data. Survey question #19 asked, "To what extent does

your ability to implement RTI influence your likelihood to refer general education

students to the Child Study Team (CST) for consultation and potential special education

evaluation?" Qualitative answers grouped by theme in Table 4.11 were reviewed and re-

categorized to determine if any responses highlighted particular sub-sets of teacher self-

efficacy. Responses that indicated "limited impact/no impact" were excluded, as were

responses indicating no referrals were made. Twenty-five responses (55.6%) could be

interpreted as related to self-efficacy for instructional strategies. Themes in these

answers included the use of additional data and attempting interventions prior to referral.

Four survey responses (8.9%) did not clearly align with a particular subset of teacher

self-efficacy.   Of those four responses, two individuals referenced a better understanding

of students prior to referral, one cited better collaboration, and another referenced self-

reflection. Thus, zero responses were coded as related to teacher self-efficacy for either

classroom management or student engagement.

      Correlational data. In addition to calculating the Pearson *r* correlation for

overall teacher self-efficacy beliefs and special education referrals, correlations were also

calculated for each sub-set of teacher self-efficacy beliefs. The purpose of this analysis

was to determine if certain areas of self-efficacy had differential relationships with

special education referrals. When general education teachers and special education teacher results were viewed as a whole, self-efficacy for instructional strategies, classroom management, and student engagement all revealed weak, inverse relationships with special education referrals. Correlations were -.278, -.274, and -.252, respectively. Similar to the overall teacher self-efficacy results, the correlations between special education referrals and teacher self-efficacy for instructional strategies and classroom management were significant. The *p* value for instructional strategies was .046, while it was .049 for classroom management. Yet, the significance of the relationship between self-efficacy for student engagement and the number of potential special education referrals was .071, revealing a statistically insignificant relationship. In other words, the relationship between self-efficacy for student engagement and special education referrals could have been due to sampling error alone (Orcher, 2005). Data revealed that weak, but significant inverse relationships existed for all areas except self-efficacy for student engagement.

General education teacher results revealed a very weak, inverse relationship between self-efficacy for instructional strategies and special education referrals, with a Pearson *r* correlation of -.162, and an insignificant *p* value of .4. Pearson r correlations between self-efficacy for classroom management and student engagement were considered weak and inverse for general education teachers, with r values of -.217 and -.248 respectively. Both relationships were statistically insignificant with p values of .259 for self-efficacy in classroom management, and .194 for self-efficacy in student engagement.

When disaggregating data for special education teachers, results differed from that of their general education counterparts. A moderately strong, inverse relationship existed between self-efficacy for instructional strategies and special education referrals, with a Pearson *r* correlation of -.452. The *p* value for self-efficacy in instructional strategies and referrals was .031, indicating statistically significant results. Similarly, a moderately strong, inverse, and significant relationship was also present for self-efficacy for classroom management and special education referrals, with a Pearson *r* correlation of -.413 and a *p* value of .05. The relationship between self-efficacy for student engagement and special education referrals was weak and inverse, with a Pearson *r* correlation of -.357, however, the *p* value of .09 revealed the relationship to be statistically insignificant. Table 4.13 summarizes the Pearson r correlation values and values of p for each for teacher self-efficacy and special education referral by participant groups.

Table 4.13

Relationship Between Teacher Self-Efficacy Domains and Referrals By Role

Participants	Instructional Strategies		Classroom Management		Student Engagement	
	Value of *r*	Value of *p*	Value of *r*	Value of *p*	Value of *r*	Value of *p*
All respondents (*N*=52)	-.278	.046*	-.274	.049*	-.252	.071
General Education Teachers (*n*= 29)	-.162	.4	-.217	.259	-.248	.194
Special Education Teachers (*n*= 23)	-.466	.031*	-.413	.05*	-.357	.09

$*p < 0.05$.

Interviews. Interview responses were reviewed and re-categorized to determine if any referral patterns existed which could be specifically linked to a subset of teacher self-efficacy. Similar to the open-ended response questions, four out of six responses (66.7%) could be interpreted as related to self-efficacy for instructional strategies, particularly the use of data prior to referral. Also akin to the open-ended responses, no interviewees commented on the relationship between self-efficacy for student engagement and the likelihood to refer.

A theme apparent in interviews which was not evident in the survey responses related to student behavior as a pattern for referral. All interviewees referenced student behavior as a factor that potentially contributed to special education referral. While these responses could be linked to self-efficacy for classroom management, no interviewees expressed additional concerns with their abilities to manage student behavior. Therefore, it is not recommended to conclude that self-efficacy for classroom management contributed to the likelihood of referrals for interviewees. Rather, it is more likely that due to the nature of the interview format, participants elaborated in greater detail on all potential reasons for referral.

Summary

The purpose of this mixed methods research study was to examine the self-efficacy beliefs of general and special education teachers within a Response to Intervention (RTI) framework. Furthermore, the study sought to determine the relationship between teacher self-efficacy beliefs and special education referrals. The study, which yielded 52 participants, comprised of 29 general educators and 23 special

educators, used Likert scale survey questions, open-ended survey and interview questions, and inferential statistics.

The overall mean self-efficacy score for survey respondents was 7.1 on a nine-point scale. When data was disaggregated by role, the mean averages for special education teachers in all areas were greater than the mean for general education teachers surveyed in all areas of self-efficacy. This difference for was statistically significant (p=.045) for self-efficacy in instructional strategies. . Research question two sought to examine the impact of teacher self-efficacy beliefs on special education referrals. To determine the relationship between overall teacher self-efficacy and estimated referrals in a given year, a Pearson r correlation was calculated. The Pearson r correlation between overall teacher self-efficacy for all participants in the study and the number of estimated referrals in a given year was -.282. According to Orcher (2005), Pearson r correlations between 0.20 and 0.39 and -0.20 to -0.39 are considered weak correlations. However, the significance level, or p value, for this study was set at .05, with a p value less than 0.5 indicating statistical significance. The p value for this relationship was .043. Thus, correlational data revealed a weak, but significant, correlation for overall teacher self-efficacy and the number of students referred for potential special education evaluation when viewing respondents as a whole.

However, when analyzing data by role, the relationship between self-efficacy and special education referrals for general education teachers was not statistically significant in any area. However, there were moderately strong, significant relationships between teacher self-efficacy and special education referrals for special education teachers in the

following areas: (a) overall teacher self-efficacy (r=-.452, p=.031*), (b) self-efficacy for instructional strategies (r=-.466, p=.025*), and (c) self-efficacy for classroom management (r=-.413, p=.05*).

Open-ended survey data revealed that the majority of teacher responses indicated a positive impact of RTI on their abilities to implement instructional strategies (75.5%) and better engage students (64.4%). Yet, 48.8% saw no impact or limited impact of RTI on their ability to implement classroom management techniques.   Several themes in the open-ended responses related to the specific elements of RTI positively influencing teacher self-efficacy were evident. The positive impact of small groups and teacher ability to target instruction to meet student needs were noted across the three domains of instructional strategies, classroom management, and student engagement.

Overall, open-ended responses of special education teachers indicated a more favorable view towards the impact of RTI on their self-efficacy beliefs than did general education teachers. Fifty-nine percent of special education teacher responses cited positive impacts of RTI, whereas 50.7% of general education teacher responses indicated positive effects. Similarly, general education teachers reported negative impacts of RTI on their self-efficacy beliefs at nearly double what special educators reported, with 14.7% of general educators and 7.6% of special education teachers citing negative results. Both general education teachers and special education teachers reported that RTI had no impact or a limited impact on their ability to implement teaching techniques at approximately the same rate, 29.3% and 28.8% respectively.

Interviewees held positive views of RTI at a greater rate than the overall survey participants. Of the six interviewees, four respondents (66.7%) noted only positive effects of RTI on their ability to engage students, while one respondent (16.7%) mentioned only negative effects. Finally, the remaining interviewee (16.7%) noted a mixed impact on student engagement, with students receiving intensive interventions more engaged and those "in the middle" as less engaged.

On average, teachers in this study estimated they refer 2.1 students per year for potential special education services. The relationship between increasing teacher self-efficacy and decreasing special education referrals, albeit weak, was statistically significant in all areas except student engagement. Relationships to other research and recommendations for further research are discussed in Chapter Five.

Chapter Five – Discussion

Summary of the Study

This study examined teacher self-efficacy beliefs and the relationship of those beliefs to special education referrals within the context of a Response to Intervention (RTI) framework. The researcher employed a mixed methods approach to more fully capture the complexity of the topic. Qualitative methods included a Likert-style survey, an open-ended survey, and interview prompts. Quantitative analysis involved the use of descriptive and inferential statistics. A two-tailed Pearson *r* correlation between the estimated number of special education referrals in a given year and mean teacher self-efficacy scores was calculated. Three major research questions formed the basis of this study: (a) what are the self-efficacy beliefs of kindergarten through grade six general and special education teachers in an RTI problem-solving model; (b) what is the relationship between teacher self-efficacy beliefs and the number of teacher-initiated special education referrals in an RTI problem-solving model; and (c) how does teacher self-efficacy for instructional strategies, classroom management, and student engagement relate to the number of teacher-initiated special education referrals in an RTI problem-solving model?

The study was conducted in a single, large, suburban school district in southeastern Pennsylvania. Twenty-nine general education teachers and 23 special education teachers participated in an online survey, while three general educators and three special educators selected through stratified random sampling participated in interviews to elaborate on the topic. Finally, descriptive statistics were reported and

inferential statistics were applied to determine the strength and direction of relationship between teacher self-efficacy beliefs and special education referrals.

This study sought to contribute to the limited body of research available on the intersecting factors of RTI, teacher self-efficacy, and special education referrals. Chapter Five provides a summary of the findings of the study and an interpretation of results. Additionally, Chapter Five describes implications of the research for educational practitioners, and provides recommendations for future research.

Summary of Results

The first research question sought to determine the self-efficacy beliefs of general education and special education teachers within a Response to Intervention (RTI) framework. Qualitative data were triangulated through three methods including the calculation of teacher self-efficacy scores on the TSES, analysis of open-ended survey response items, and analysis of interview responses. The mean overall teacher self-efficacy score for educators surveyed in this study was 7.1 on a nine-point scale. Specifically, the mean overall scores for self-efficacy in instructional strategies and classroom management were both 7.1, while the mean overall score for self-efficacy in student engagement was 6.9. Little variability was found among the subsets of instructional strategies, classroom management, and student engagement when survey respondents were viewed as a whole. However, when viewed by role, special education teacher self-efficacy beliefs were greater than general educators. These results were found to be statistically significant ($p=.045$) for self-efficacy in instructional strategies.

Open-ended survey responses were analyzed and assigned sub-codes based upon whether teachers felt RTI had a positive impact, no impact/limited impact, or negative impact on their abilities to implement teaching techniques. Open-ended survey data revealed that the majority of teacher responses indicated a positive impact of RTI on their abilities to implement instructional strategies (75.5%) and better engage students (68.2%). However, nearly half of the responses (48.8%) indicated that RTI had no impact or limited impact on their ability to implement classroom management techniques. Across all three areas of teacher-self efficacy, several themes emerged related to specific factors positively influencing teacher self-efficacy within RTI. The positive impact of small instructional groups and teacher ability to target instruction to meet student needs were found.

Similar to the open-ended survey responses, the six interviewees generally indicated that RTI had a greater impact on their abilities to implement instructional strategies and increase student engagement and noted a lesser impact on their abilities to implement classroom management techniques within the RTI framework. Likewise, the positive impact of small group instruction and a better ability to focus instruction for student needs were found in interview responses across the domains of instructional strategies, classroom management, and student engagement.

Research question two examined the relationship between overall teacher self-efficacy beliefs and teacher-initiated special education referrals. The third research question expanded upon research question two, specifically analyzing how teacher self-efficacy in the sub-categories of instructional strategies, classroom management, and

student engagement related to teacher-initiated special education referrals. Survey

respondents were asked to estimate the average number of students they refer to the CST

per year for possible special education evaluation. On average, teachers in this study

estimated they refer 2.1 students per year, with the range of referrals spanning from zero

to "more than ten." All ten teachers who reported making zero referrals identified

themselves as special education teachers. However, the two survey respondents who

reported making more than ten referrals per year were also special education teachers.

Greater consistency was found among general education teacher referrals, with all

teachers estimating they refer at least one student per year to the CST.

Pearson r correlations were calculated to determine the relationship of teacher

self-efficacy beliefs to the estimated number of special education referrals made in a

given year. When general education teachers and special education teachers were viewed

as a whole, weak, inverse relationships were found across all areas: (a) overall teacher

self-efficacy; (b) self-efficacy for instructional strategies; (c) self-efficacy for classroom

management; and (d) self-efficacy for student engagement. These weak relationships

found that as teacher self-efficacy increased, special education referrals decreased. The

relationship between increasing self-efficacy and decreasing special education referrals,

albeit weak, was statistically significant in all areas except student engagement. In other

words, the relationship between increasing self-efficacy in student engagement and

decreasing special education referrals could be due to chance.

However, due to variability in responses among special education teachers

surveyed, the researcher conducted additional Pearson r correlations for the subgroups of

general education teachers and special education teachers. General education teacher

results found insignificant, weak, inverse relationships for overall teacher self-efficacy

(r=-.216, p=.4), self-efficacy for classroom management (r=-.217, p=.259), and self-

efficacy for student engagement (r=-.248, p=.194). Further, the relationship between

self-efficacy for instructional strategies and special education referrals was very weak

and statistically insignificant for general educators (r=-.216, p=.261). While results were

statistically insignificant in all areas for general education teachers, moderately strong,

inverse relationships existed for special education teachers in overall teacher self-efficacy

(r=-.452, p=.031), self-efficacy for instructional strategies (r=-.466, p=.025), and self-

efficacy for classroom management (r=-.413, p=.05).   A weak and statistically

insignificant relationship was evident for special educators in self-efficacy for student

engagement and special education referrals (r=-.357, p=.09).

Open-ended survey data were analyzed to determine the reasons teachers may

refer students for potential special education evaluation, and how those factors potentially

related to self-efficacy. The most frequently cited impact of RTI on special education

referrals was the existence of additional data used to support or refute the need for

referral (33%). An additional ten responses (22.2%) noted that interventions were

attempted prior to referring students to the CST. Yet, seven open-ended responses

(15.5%) indicated that RTI had little or no impact on their likelihood to refer students to

the CST for potential special education evaluation. Considering that RTI was initially

conceived for the purpose of more accurately identifying students with learning

disabilities, this theme may prove cause for concern.

Interview data revealed similar themes related to referrals. Four of the six interviewees (66.7%), two general education teachers and two special education teachers, indicated that they use the data from RTI progress monitoring as part of their decision to refer students for potential special education services. The use of data was the most frequently cited reason for referral among interviewees.

Limitations

The selection of subjects from a single, public school district in southeastern Pennsylvania presented as a limitation to the generalization of findings in this study. Further, while a total of 363 teachers were recruited for participation, including 277 general education teachers and 86 special education teachers, only 52 respondents who met criteria for inclusion in the study participated. The response rate of 14.3% presented as an additional limitation for generalization. Although 76.3% of teachers in the total pool recruited for participation were general education teachers, only 10.5% of that population chose to participate. Yet, while special education teachers represented 23.7% of the total recruited pool, a 26.7% response rate was obtained from this group. Thus, the reported results may be skewed in favor of special education teacher beliefs.

Although the study met the research design condition of interviewing three general education teachers and three special education teachers, only three general educators total indicated willingness to participate in interviews, thus they were all selected. This may not represent a true picture of general educator beliefs within the study because of the limited number of participants willing to be interviewed. When results of the survey were disaggregated by role, only four respondents indicated that they

were special education teachers who taught the primary grades. Therefore, due to the small sample size for this subgroup, generalization of findings for primary special educators cannot be recommended.

The survey portion of the study asked participants to: (a) rate their self-efficacy beliefs on a nine-point scale, (b) estimate the number of potential special education referrals they make in a given year, and (c) answer four open-ended questions on these intersecting variables. While all respondents rated their self-efficacy beliefs and estimated the number of referrals made, not everyone chose to respond to the open-ended prompts. Thus, the omission of open-ended responses may potentially limit the reliability of data reported for this component of the study.

It is also important to note that the positive effects of RTI as identified in this study are related to teacher self-efficacy beliefs rather than actual efficacy of instruction. In other words, the results reported reflect teachers' perceived beliefs of competence rather than actual performance.

Relationship to Other Research

This study provided information on the intersecting variables of teacher self-efficacy and special education referrals within a Response to Intervention problem-solving framework. Tschannen-Moran et al. (1998) argued that teacher self-efficacy was critical because the estimation of one's own abilities may impact actions and the effort exerted in various situations. This research study found higher overall self-efficacy scores among special education teachers as compared to general education teachers, with a statistically significant difference in self-efficacy for instructional strategies.

There were no statistically significant relationships present between general education teacher self-efficacy beliefs and special education referrals. However, moderately strong, inverse relationships were evident for special education teachers. Results were statistically significant for special education teachers in all areas except self-efficacy for student engagement. As results cannot be generalized beyond the single school district in which the study was conducted, larger-scale replication is recommended to determine if this phenomenon is specific to the district or more widespread. Reasons for the presence of statistically significant relationships for special education teachers but not general education teachers are unknown. However, when applying prior research to the findings, there are factors worthy of investigation which may have contributed to these results.

The absence of a statistically significant relationship between teacher self-efficacy and special education referral for general education teachers could be related to belief systems about student ability. Brady and Woolfson (2008) found that teachers with less experience instructing students with learning difficulties more frequently attributed those challenges to internal student causalities. Additionally, Brady and Woolfson contended that special education teachers saw student behavior as more amenable to change than general education teachers. Thus, general education teachers without as much experience working with struggling students may attribute poor performance to factors internal to the child rather than their beliefs about their own effectiveness as teachers. In contrast, special education teachers in the study with high self-efficacy beliefs may have

been less likely to refer students for potential special education services because of their beliefs in student ability to change, as well as their own effectiveness as teachers.

Special education teachers in this study possessed higher mean self-efficacy scores than general educators. A possible explanation for higher self-efficacy beliefs among special education teachers could be related to the number of years in education. Klassen and Chiu (2010) found that the three self-efficacy areas identified by the TSES – student engagement, instructional practices, and classroom management – exhibited a nonlinear relationship over time. Self-efficacy beliefs were found to be lower for beginning teachers, increase steadily over time with experience, and then decline for teachers in the latter stages of their careers. The length of time in education was not a variable investigated in this study. Further investigation is needed to determine if this factor contributed to higher special education teacher self-efficacy beliefs.

Nunn and Jantz (2009) found that teachers with more experience implementing RTI demonstrated greater efficacy. Applying their contention to this study, one would presume that primary teachers in District X, who had been implementing RTI for a longer period of time than intermediate teachers, would exhibit greater self-efficacy beliefs. However, the converse was true with intermediate teachers demonstrating greater self-efficacy beliefs.

Prior research found that practitioners identified benefits of the problem-solving RTI model as the early provision of support to struggling learners and the ability to meet unique student needs (D. Fuchs et al., 2003; Rinaldi et al., 2010; Swanson et al., 2012). Participants in this study were asked to comment on the impact of RTI on their teaching

abilities. Similar to earlier findings, the ability to target instruction to meet specific

student needs was noted by study participants as a positive effect of RTI. Yet, the early

provision of support for struggling learners did not emerge as an overall theme in the

data. Instead, study participants frequently cited small instructional groups as a benefit of

RTI on their ability to implement effective teaching strategies.

Research indicated that the lack of consensus on the purpose of RTI as either an

instructional framework, a model for learning disability identification, or a combination

of the two, resulted in implementation inconsistencies (L.S. Fuchs & D. Fuchs, 2009b;

McKenzie, 2009). Evidence of inconsistencies related to practice and understanding

were apparent in this study. Of particular note is the variability in special education

teacher responses related to the number of general education students they refer to the

CST for potential special education services. Nine special education teachers reported

making zero referrals in a given year, and six of those teachers explicitly stated that they

do not refer general education students due to their roles as special educators. SB-4

summarized, "Since I am not a general education teacher I am not in a position to refer

general ed. students for special ed. evaluation." It is unlikely that a district policy

prohibiting special educators from referring general education students for potential

services has been communicated since 13 special education teachers surveyed indicated

that they made at least one referral in a given year. Yet, this belief was apparent in at

least six responses of special educators. Thus, similar to prior research, inconsistencies in

RTI implementation were evident even within a single school district.

While proponents of RTI cited a benefit as eliminating bias in special education referrals due to data-based decision making (Rinaldi, Averill, & Stuart, 2011; Wanzek & Vaughn, 2011), critics argued that this ideal had not been realized (Gotshall & Stefanou, 2011).   Of concern in this study were the responses of seven survey participants who indicated that RTI had little or no impact on their likelihood to refer students to the CST for potential special education evaluation. Respondent GP-5 plainly stated, "I refer students based on my own knowledge and not based on RTI."   Dunn, Cole, and Estrada (2009) indicated that although RTI does not promote the idea of referring students based on student characteristics or demographics, factors such as socioeconomic status, race, and language may ultimately influence referral to special education.   Thus, if teachers ignore or discredit the data resulting from RTI and rely solely on personal judgment for special education referrals, RTI's goal of reducing biased special education referrals may not be realized.

Podell and Soodak (1993) argued that teachers' beliefs in their own competence were highly relevant to special education referral decisions and that poor students were especially vulnerable to special education referral when teachers perceived themselves as ineffective. However, additional research on this theory was limited in the years that followed. The results of this study supported Podell and Soodak's claim to some extent. Correlational data suggested that weak, but significant relationships existed between increasing teacher self-efficacy and decreasing special education referrals in all areas except self-efficacy for student engagement.

However, the qualitative response of one special education teacher in the study, SI-10, suggested the opposite effect. SI-10 stated:

Feeling confident in implementing interventions definitely does impact the likelihood of me referring students when I see they are in need of additional supports. I feel other teachers who are not comfortable with implementing interventions are more likely to put off referring a student to the CST.

This belief runs counter to Podell and Soodak's (1993) earlier research and may reflect a changing attitude towards referrals. While SI-10's comment was not repeated throughout the study, it is nonetheless an interesting suggestion that highly confident teachers may refer students more quickly.

Recommendations for Future Research

The results of this study provided insight into the self-efficacy beliefs of educators within the context of an RTI framework and how those beliefs are related to special education referral. Recommendations for future research in this area may include the following:

1. Replicate the study on a larger scale to determine if results are limited to the district in which the study was conducted or whether they are more widespread.

2. Examine the role of special education teachers as initial sources of referral for general education students within the context of RTI. As school districts have moved towards more inclusive special education service delivery models where students with disabilities are educated alongside their non-disabled

peers, special education teachers are emerging as a greater presence in the general education environment. Their expertise in working with students with unique learning needs could prove to be a valuable resource in the potential identification of disabilities. The relationship between increasing self-efficacy and decreasing special education referrals was moderately strong for special educators in this survey. Examining reasons for this relationship is necessary.

3. Research general education teacher beliefs regarding student ability and the relationship of those beliefs to special education referrals. As a statistically significant relationship between teacher self-efficacy and referrals was not found for general education teachers in this study, additional investigation into subjective reasons for special education referral within the RTI context is needed.

4. Analyze the relationship between collective teacher self-efficacy and special education referrals. This study examined the relationship of individual teacher self-efficacy beliefs on their likelihood to refer students for potential special education services. According to Tschannen-Moran and Barr (2004), collective teacher self-efficacy refers to the beliefs a faculty holds regarding its ability to attain meaningful learning outcomes regardless of obstacles to learning. Examining these beliefs and their relationship to special education referrals would provide valuable insight into how the overall belief systems of a school influence special education referrals.

5. Examine the relationship between principals' sense of self-efficacy and total special education referrals with the RTI context to determine the extent of influence of leadership beliefs.

6. Analyze the self-efficacy scores of teachers pre and post-RTI implementation. Such a study would engender beneficial understanding as to how the implementation of RTI affects teacher beliefs.

7. Evaluate the relationship between student achievement outcomes and teacher self-efficacy beliefs within RTI models. Exploring the linkage between perceived efficacy and actual outcomes is fertile ground for future research.

8. Further investigate the relationship between teacher self-efficacy beliefs and special education referrals with a regression analysis design. A qualitative survey response of particular interest suggested that highly confident teachers may refer students more quickly than those who are not as comfortable implementing interventions (SI-10). SI-10's suggestion implies that teachers with high levels of self-efficacy may more quickly refer students for special education evaluation because they trust their abilities to meet student needs, and resort to referrals when they feel they are unable to effectively reach students. Thus, exploring the possibility of a non-linear relationship through regression analysis would prove valuable.

Conclusion

The purpose of this study was to examine the self-efficacy beliefs of teachers within an elementary RTI problem-solving framework, and to determine how those self-

efficacy beliefs were related to special education referrals. The mean overall teacher self-efficacy score for educators surveyed in the study was 7.1 on a nine-point scale. When viewed by role, special education teacher self-efficacy beliefs were greater than general educators. This difference was found to be statistically significant ($p=.045*$) for self-efficacy in instructional strategies. Open-ended survey responses revealed that the majority of teachers found RTI to positively impact their abilities to implement instructional strategies and increase student engagement, with lesser effects on their abilities to execute classroom management. The benefits of small instructional groups and teachers' ability to target instruction were evident in both open-ended survey and interview responses.

On average, teachers in this study estimated they refer 2.1 students per year for potential special education services. The most frequently cited impact of RTI on special education referrals was the existence of additional data and attempting other interventions prior to referral. The greatest variability existed among special education teacher referrals, spanning from zero to more than ten referrals in an average year. Correlational data found that the relationship between special education referrals and teacher self-efficacy was not statistically significant in any area for general education teachers. However, moderately strong, inverse relationships were evident for special education teachers in the areas of overall teacher self-efficacy ($r=-.452$, $p=.031*$), self-efficacy for instructional strategies ($r=-.466$, $p=.025*$), and self-efficacy for classroom management ($r=-.413$, $p=.05*$). Thus, as special education teacher self-efficacy increased in these areas, special education referrals decreased. Results were statistically significant.

Results of this study expand upon the limited body of research available on the intersecting variables of teacher self-efficacy and special education referrals, particularly within the RTI framework. The rapid expansion of RTI without consensus on its purpose as a method of learning disability identification, an instructional framework, or both, has led to implementation inconsistencies. This study provides a basis upon which to further examine reasons for special education referral within the RTI model.

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Appendix A – Permission to Use the TSES

William & Mary
School of Education

MEGAN TSCHANNEN-MORAN, PHD
PROFESSOR OF EDUCATIONAL LEADERSHIP

July 9, 2015

Jenna,

You have my permission to use the Teacher Sense of Efficacy Scale (formerly called the Ohio State Teacher Sense of Efficacy Scale), which I developed with Anita Woolfolk Hoy, in your research. You can find a copy of the measure and scoring directions on my web site at http://wmpeople.wm.edu/site/page/mxtsch . Please use the following as the proper citation:

Tschannen-Moran, M & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*, 783-805.

I will also attach directions you can follow to access my password protected web site, where you can find the supporting references for this measure as well as other articles I have written on this and related topics.

I would love to receive a brief summary of your results.

All the best,

Megan Tschannen-Moran
The College of William and Mary
School of Education

Permission to Use Teachers' Sense of Efficacy Scale in Doctoral Study

3 messages

Jenna Mancini Rufo <jenna.rufo@gmail.com>   Thu, May 21, 2015 at 6:13 PM
To: mxtsch@wm.edu, Hoy.17@osu.edu

Dear Drs. Woolfok Hoy and Tschannen-Moran,

I am a doctoral student in the Educational Leadership program at Immaculata University, located outside Philadelphia, Pennsylvania. I have recently completed my coursework and am beginning my dissertation. I am writing to request your permission to use The Teacher Sense of Efficacy Scale in my study. Thank you for your consideration.

Respectfully,

Jenna Mancini Rufo

Anita Woolfolk Hoy <anitahoy@me.com>   Thu, May 21, 2015 at 9:52 PM
To: Jenna Mancini Rufo <jenna.rufo@gmail.com>

You are welcome to use the TSES in your research.

Anita

Anita Woolfolk Hoy, PhD
Professor Emerita
The ohio state university
7655 Pebble Creek Circle, Unit 301
Naples, FL 34108

anitahoy@mac.com
415-640-2017

http://u.osu.edu/hoy.17/

Appendix B - Online Survey

Research Study on Response to Intervention (RTI), Teacher Self-Efficacy, and Special Education Referrals

Welcome and thank you for agreeing to participate in this online survey examining the relationship between teacher self-efficacy beliefs and special education referrals within a Response to Intervention (RTI) model.

Clicking on the "continue" button below and completing the survey indicates that you have read and understand the consent form sent to you via email in its entirety and that you agree to have your responses used in this research study. If you do not consent to study participation, please discontinue completion of this survey.

Continue »

16% completed

Research Study on Response to Intervention (RTI), Teacher Self-Efficacy, and Special Education Referrals

Definition of Terms

For purposes of this survey, the terms below are defined as follows:

Child Study Team (CST) – A group of general and special education teachers, administrators, school nurses, clinical and school psychologists, related service providers, and counselors who meet frequently to review student progress and discuss pre-referral strategies and student referrals for special education (Guirdy & van den Pol, 1996).

Response to Intervention (RTI) – An instructional framework that may be used for the identification of specific learning disability which screens all children for academic difficulties, monitors student progress, and provides increasingly intense interventions based on student response (Fletcher & Vaughn, 2009); also referred to as Responsiveness to Intervention, Response to Instruction and Intervention (RTII), and Multi-Tiered Systems of Support (MTSS).

Teacher self-efficacy - the "teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (Tschannen-Moran et al., 1998, p. 22).

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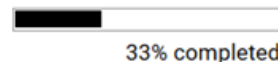
33% completed

Research Study on Response to Intervention (RTI), Teacher Self-Efficacy, and Special Education Referrals

1. What is your position?

- ⊚ General education classroom teacher
- ⊚ Special education teacher

2. What grade range do you primarily instruct?

- ⊚ Primary (K-3)
- ⊚ Intermediate (4-6)
- ⊚ Both Primary and Intermediate (K-6)

« Back   Continue »

50% completed

Research Study on Response to Intervention (RTI), Teacher Self-Efficacy, and Special Education Referrals

Directions: This section of the survey is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the following statements below. Your answers are confidential.

3. How much can you do to control disruptive behavior in the classroom?

1 2 3 4 5 6 7 8 9

Nothing ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ A great deal

4. How much can you do to motivate students who show low interest in school work?

1 2 3 4 5 6 7 8 9

Nothing ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ A great deal

5. How much can you do to calm a student who is disruptive or noisy?

1 2 3 4 5 6 7 8 9

Nothing ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ A great deal

6. How much can you do to help your students value learning?

1 2 3 4 5 6 7 8 9

7. To what extent can you craft good questions for your students?

1 2 3 4 5 6 7 8 9

Nothing ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ A great deal

8. How much can you do to get children to follow classroom rules?

1 2 3 4 5 6 7 8 9

Nothing ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ A great deal

9. How much can you do to to get students to believe they can do well in school work?

1 2 3 4 5 6 7 8 9

Nothing ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ A great deal

10. How well can you establish a classroom management system with each group of students?

1 2 3 4 5 6 7 8 9

Nothing ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ A great deal

11. To what extent can you use a variety of assessment strategies?

1 2 3 4 5 6 7 8 9

Nothing ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ A great deal

12. To what extent can you provide an alternative explanation or example when students are confused?

1 2 3 4 5 6 7 8 9

Nothing ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ A great deal

13. How much can you assist families in helping their children do well in school?

1 2 3 4 5 6 7 8 9

Nothing ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ A great deal

14. How well can you implement alternative teaching strategies in your classroom?

1 2 3 4 5 6 7 8 9

Nothing ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ A great deal

« Back   Continue »
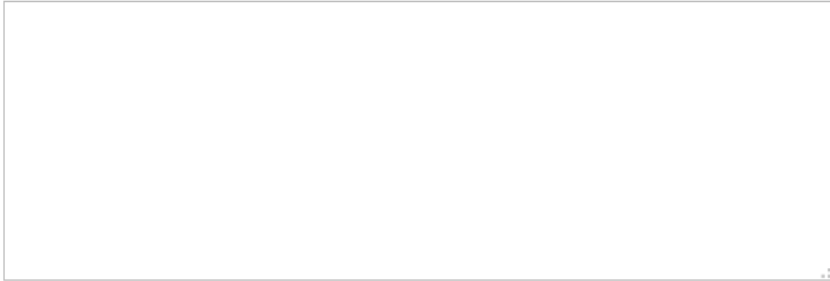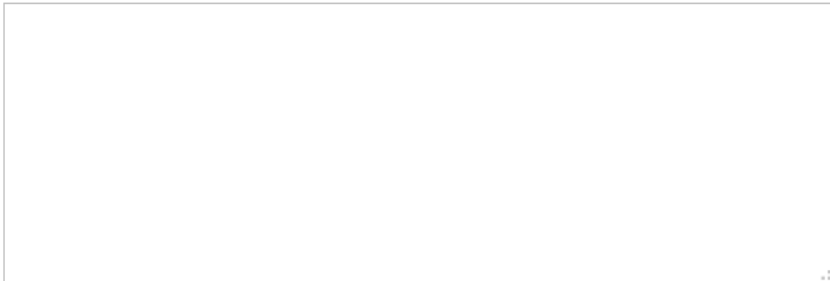
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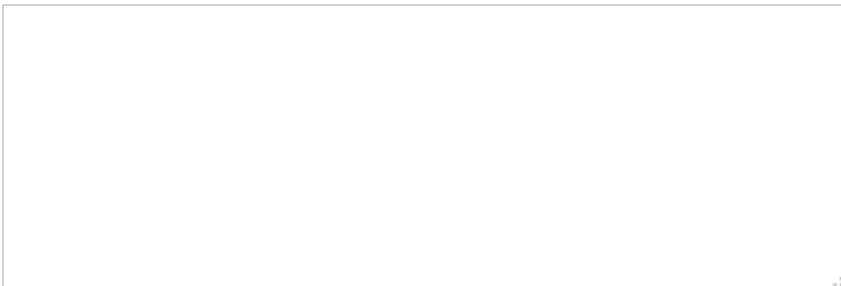# Research Study on Response to Intervention (RTI), Teacher Self-Efficacy, and Special Education Referrals

15. Estimate the number of general education students you may refer to the Child Study Team (CST) in a given year for consultation and possible special education evaluation.

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10
- ○ More than 10

« Back   Continue »

83% completed

Research Study on Response to Intervention (RTI), Teacher Self-Efficacy, and Special Education Referrals

16. Describe what impact RTI has had (if any) for you as a teacher on your ability to implement instructional strategies.

17. Describe what impact RTI has had (if any) for you as a teacher on your ability to implement classroom management techniques.

18. Describe what impact RTI has had (if any) for you as a teacher on your ability to increase student engagement.

Research Study on Response to Intervention (RTI), Teacher Self-Efficacy, and Special Education Referrals

Thank you for your participation in this survey. If you are willing to participate in an optional twenty-minute interview, please review the information contained in the interview invitation letter sent to you via email and indicate your interest via the following link: https://goo.gl /7wDqRC.

This form was created using Google Forms.
Create your own

Google Forms

Appendix C – Interview Questions

1. What is your current position?

2. What grade(s) do you primarily instruct?

3. Describe how your own personal knowledge, beliefs, and experience impact your ability to be successful instructing students within an RTI framework.

4. Describe how your own personal knowledge, beliefs, and experience impact your ability to work with struggling students within an RTI framework.

5. What do you perceive as your personal strengths and weaknesses related to instructional strategies within RTI?

6. What do you perceive as your personal strengths and weakness related to managing student behavior within RTI?

7. What do you perceive as your personal strengths and weaknesses related to engaging students within an RTI model?

8. Describe at what point you would refer a struggling student to the building Child Study Team for consultation, and ultimately, potential special education evaluation.

Appendix D – University RERB Approval

**IMMACULATA UNIVERSITY RESEARCH ETHICS REVIEW BOARD
REQUEST FOR PROTOCOL REVIEW--REVIEWER'S COMMENTS FORM
(R1297)**

Name of Researcher: Jenna Rufo

Project Title: The Relationship Between Teacher Self-Efficacy and Special Education Referrals in an Elementary RTI Model

Reviewer's Comments

Your proposal is **Approved.** You may begin your research or collect your data.

PLEASE NOTE THAT THIS APPROVAL IS VALID FOR ONE YEAR **(365 days)** FROM DATE OF SIGNING.

Reviewer's Recommendations:

____ Exempt	**X** **Approved**
____ Expedited	____ Conditionally Approve
____ Full Review	____ Do Not Approve

Thomas F. O'Brien   January 4, 2016

Thomas F. O'Brien, Ph.D., Ed.D.   DATE
Chair, Research Ethics Review Board