4-1-2015

Identification of specific learning disability in New Jersey: an illuminative evaluation

Jennifer Garwood

IDENTIFICATION OF SPECIFIC LEARNING DISABILITY IN NEW JERSEY: AN ILLUMINATIVE EVALUATION

by
Jennifer K. Garwood

A Thesis

Submitted to the
Department of Language, Literacy and Special Education
College of Education
In partial fulfillment of the requirement
For the degree of
Master of Arts in Reading Education
at
Rowan University
December 2014

Thesis Chair: Susan Browne, Ed. D.

Dedication

This thesis is dedicated to my sister, Beth Lauren, for teaching me that our greatest strengths are often uncovered in the process of overcoming our greatest weaknesses. I am so proud of the depth of your accomplishments and am honored to follow in your footsteps little sister. I also dedicate this work to my daughter, Tuula Josephine, for the generous heaping of hugs, kisses, and patience that helped mommy endure her many assignments. You are my greatest joy!

Acknowledgements

I would like to acknowledge my professor, Susan Browne, for the guidance, encouragement, and expertise she provided me in completing this thesis. I would also like to thank all of the participants who voluntarily gave their time and knowledge to assist me in this study. Their support of research centered on evolving the service of students with learning disabilities is greatly appreciated.

I would also like to acknowledge my family, who made the completion of this thesis possible. I thank my husband, Dave, for his continuous love, help, and humor. I would also like to recognize my parents, Joseph and Pamela, for their unending support and guidance not only during this program, but in every endeavor. Lastly, I thank the rest of my friends and family for your steadfast belief in me. Your encouragement has nourished my resolve.

Abstract

Jennifer K. Garwood
IDENTIFICATION OF SPECIFIC LEARNING DISABILITY IN NEW JERSEY: AN ILLUMINATIVE EVALUATION
2014/15
Susan Browne, Ed.D.
Master of Arts in Reading Education

Many studies have examined changes in state legislation and guidance in response to IDEIA (2004) with regard to identification of specific learning disability (SLD). However, it is difficult to find research examining the diagnostic practices for SLD within various states. Investigators in the present study aim to isolate the significant features of practices used to identify SLD in New Jersey, delineate relationships between district characteristics and diagnostic practices, and detect trends in the use of response to intervention (RTI). This qualitative research study utilizes an illuminative evaluation model, in which survey and interview data was analyzed to explore aspects of diagnostic practices that reflect or conflict with research-based understandings of reading disability. An analysis of the data reveals that there is a strong reliance on severe discrepancy (SD) methods in the identification of SLD within NJ, a finding that conflicts with current research about the diagnosis of reading disability. The study shows a very slow progression in the growth of RTI programs, a practice that allows for early, targeted intervention and identification of reading disabilities. The data reveals a lack of correlations between diagnostic methods and demographic characteristics. The collective data also demonstrates considerable variation within the methods that are being employed. Inconsistencies within both SD and RTI approaches raise concerns about the reliability of each method.

Table of Contents

Table of Contents (Continued)

List of Figures

List of Tables

Chapter 1

Introduction

Scope of the Study

My interest in the subject of reading disability began well before I considered a career in education. The attention surfaced the day my little sister was diagnosed with dyslexia. From that day forward I became an observer of her struggle to overcome an obstacle, and found myself constantly contrasting her experience with reading and my own. I was one of those kids who learned to read easily. She was not. I was one of those kids who always had a book in hand. To this day, I cannot recall my sister ever reading for pleasure. For me, reading was a liberating experience that contributed only positively to my self-discovery. For her, it was a constricting experience that played a complicated role in her identity. In those early years, her dyslexia negatively impacted my sister's self-esteem and confidence when it came to academics. Thankfully, my parents and my sister worked very hard to keep her disability from defining her, from becoming her single story. Eventually, her greatest strengths arose from that weakness and today she is a successful special education teacher serving children with similar struggles.

When I finally began my teaching career, I found myself in a first grade classroom with a group of thirteen emergent readers. During the course of that first year, I began to understand how complex literacy learning can be. Not just the mechanics of it, but the feelings that children experience in response to it. I witnessed how early on in a child's education they begin to internalize their reading ability as part of their identity. I

taught students who reminded me of myself, those who were eager about any literacy activity and picked up reading skills naturally and intuitively. I also taught many students who reminded me of my sister, those children who became frustrated during literacy activities and struggled to secure reading skills. Reading tasks, which bolstered the confidence of some students, had devastating consequences to the self-efficacy of others.

In my subsequent years as a 1st, 2nd, and 3rd grade classroom teacher, I have taught many children who I felt were displaying characteristics of a reading disability. These children were not making the typical growth that the other students in my class were making. I work in a district where many of the students are living in poverty. We also have a very large population of students who are English Language Learners. These two factors result in much of our student population falling below grade level expectations in reading (Eamon, 2002; Reardon & Galindo, 2009). Although many of my students entered my classroom reading below grade level, most of them would make wonderful growth throughout the year. They did not all learn at the same pace though. Some of my students that showed slower growth required intervention and were able to participate in afterschool tutoring programs, Reading Recovery, or basic skills tutoring. However, there were many students who, despite these intervention efforts, made very limited growth in their spelling, writing, and reading abilities. Each time I encountered one of these children I went through the process of referring students to our Child Study Team for evaluation. Frequently, these students were tested and did not qualify for classification or accommodations because there was not a large enough discrepancy between their IQ and achievement level. In many instances the student had a low-IQ and

low achievement level. Their evaluation scores indicated that they were already working at their capability level. Therefore, this struggling student continued in a general education classroom and was offered no additional supports.

As a classroom teacher, I found it extremely frustrating that my intuition, based on weeks of close observation, told me that a particular child's reading difficulties were stemming from more than developmental lag. I also strongly believed that these children were capable of more, if only they had the opportunity to receive intensive intervention. Often, as that child progressed through various grade levels, often around fourth grade, they finally qualified for special services. I found this even more upsetting. I had attempted to help that child acquire early intervention, and I knew that those lost years would be detrimental to that child's confidence, motivation, and reading success.

During these early years, I have to admit I knew very little about special education laws and the classification process. I wondered if the diagnostic practices used by my school district were different from the practices that other schools used. I also began to wonder if the evaluation that these students had undergone was an effective one.

Story of the Question

During the last few years, there have been several events that have helped me understand the laws and procedures for diagnosing learning disabilities. The first was a workshop provided by my school district. I believe the goal of this workshop was to address the frustrations of teachers like me by explaining the IQ-achievement discrepancy approach and how the law supported its use. This workshop did not make me any less frustrated with the process, but it did clarify that our district was using procedures of diagnosis that were allowed by the state and federal governments.

Not long after this workshop, I began coursework for my Masters in Reading Education. At the same time, my best friend was working toward acquiring her certification as a Learning Disabilities Teacher Consultant. As our coursework progressed we had many conversations about reading disabilities and diagnostic practices. Through my classes I learned a great deal about the intricacies of reading development and reading disabilities. As I read and learned more about these subjects, I found myself revisiting my inquiries relating to the diagnostic practices for reading disabilities. In addition, my friend shared information about the different tools used in the evaluation process, and I came to realize that there was considerable variation in how schools approached identification of learning disabilities. As we synthesized our learning experiences, I realized that my inquiries about the diagnosis of reading disabilities were evolving.

Then, as fate would have it, in one of the final courses for my Masters program, I was assigned a theory project on Keith Stanovich, a developmental psychologist with a particular interest in the psychological processes involved in reading. In investigating this theorist, I read many studies about reading development and reading disability. During my research I became aware of the great debate over the use of IQ in the identification of reading disability and I began to find answers to some of the questions that had been consuming me. However, the answers that I uncovered during this process led to even more questions, many of which I was unable to resolve. Many of which I am attempting to explore in this study.

Statement of the Problem

In the field of education, professionals are accustomed to navigating shifting tides triggered by evolving research, theory, and policy. The turning of these theoretical tides can often result in powerful changes in the direction of thought and behavior in educational practices. From the gravitational forces that drive these shifts, conflicting evidence and perspectives often arise and result in great controversy and debate. One controversial issue that is currently causing conflict in the field of education is how to effectively diagnosis and remediate reading disabilities such as dyslexia.

Dyslexia is defined as a specific learning disability (SLD) under the *Individuals with Disabilities Act (IDEA)*. SLD is "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 the 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" (IDEA, 1997). Reauthorizations made through the *Individuals with Disabilities Education Improvement Act* (IDEIA) in 2004, offer states several options in establishing procedures for identifying individuals with SLD. These revised regulations reflect an extreme change in perspective from previous regulations which allowed only for the use of severe IQ-achievement discrepancy to establish a classification of SLD (IDEA, 1997). Although the use of severe discrepancy continues, the allowances of alternative methods of identification have resulted in greater variability in diagnostic practices.

The transformation that is occurring in response to IDEIA 2004 has sparked much debate in the education community. Along with administrators, reading specialists,

educators, child-study team members, parents and students, today's leading theorists and researchers question whether these shifts in evaluation procedures are channeling us toward the goal of increased effectiveness in the diagnosis and remediation of SLD, specifically dyslexia.

The current IDEA regulations give states considerable flexibility in the criteria they use to identify SLD in individuals. While many states have created updated regulations for making a determination of SLD, they are passing much of this flexibility on to local school districts. Although this results in much inconsistency across the nation, and within states, it also gives local school districts the power to define their own criteria for identifying SLD, and use varying methods to determine subcategories of this disability such as dyslexia and dyscalculia.

While there have been investigations into the legislation and guidance that states outline for public school districts, it is difficult to find published research on how school districts have responded to this legislation and guidance. For example, an investigation about the diagnostic practices used within New Jersey reveals a lack of information provided by both the state and independent researchers. The current research is an attempt to provide insight about the practices that contribute to the diagnosis of SLD at the district level within the state of New Jersey.

Statement of the Research Question

Collecting information about the diagnostic practices used in New Jersey school districts would be beneficial for many reasons. A qualitative analysis of patterns in diagnostic procedures can provide insight into the variation that exists within the state. Once prevalent practices and sources of variation are identified, it will be possible to spur

discourse about the effectiveness of dominant models, and variations of different models, in light of current research about learning disabilities. It will also make it possible to look for correlations between diagnostic models and demographic factors. This will allow individuals to consider the forces acting in support of or against various models. An analysis of trends can also provide professionals in the field of education with a clearer description of the practices occurring within New Jersey. This information can be compared and contrasted to local, state, and possibly even federal trends. The following questions outline the major focuses addressed in the current study.

What practices are local school districts in New Jersey using to identify reading disabilities? The purpose of this study is to examine survey and interview responses about the diagnostic process for reading disabilities to identify patterns in the diagnostic practices being used in New Jersey's schools. An analysis of the data collected will reveal correlations between diagnostic practices and the schools' demographic, social, and economic background.

Did local NJ school districts adapt their policies for diagnosing reading disabilities due to changes made to state policy in 2010? This study will also examine how district policies for diagnosing SLD have been affected by the Individuals with Disabilities Education Improvement Act of 2004. The goal is to determine if the use of RTI approaches are growing.

What aspects of these practices reflect or conflict with research-based understandings about the underlying cognitive and biological foundations of students with reading disabilities? A critical aspect of this study will be to examine which of the

diagnostic practices occurring in New Jersey reflect or conflict with current research finding about the nature of reading disabilities.

Organization of the Thesis

Chapter two provides a review of the literature surrounding the diagnosis of reading disability, including research on reading development, cognitive factors involved in reading disability, early intervention, and diagnostic procedures for identification of SLD. Chapter three describes the design and context of the study, including my plan for implementing the literature, as well as vital facts about the New Jersey counties in which the study will be conducted. Chapter four reviews and analyzes the data and research and discusses the findings of the study. Chapter five presents the conclusions of this study and implications for teaching and learning as well as suggestions for further research regarding the diagnosis of SLD.

Chapter 2

Review of Literature

Reading Development: A Complex, Interactive Cognitive Process

Over many decades researchers have debated whether literacy development is a *natural* process. Proponents of Whole Language Theory believe that children develop the ability to process written language much as they do oral language; through experience they naturally learn the parts from the whole (Goodman, 1987). On the other side of the debate, there are those who believe that strong literacy development occurs through systematic, explicit skills instruction. Lyon (1998) argues that research has proven that phonemic awareness and phonics are important components to reading development, and that children benefit from being taught these skills directly and sequentially.

Although individuals on both sides of this debate voice distinct stances on literacy learning, there is a common theme expressed in the discourse acknowledging the complexity of reading development. Smith and Goodman (2008) describe two levels of language, the physical surface structure (oral or written) and the deep meaning structure, that are related to each other through a complex system of rules. They suggest that during literacy development, individuals instinctively discover order and develop the ability to manipulate the structures of the language system. Plaut (2005) describes reading as a highly complex process that involves the rapid coordination of various cognitive processes (as cited in Goswami, 2008). Cooperation between these various systems results in efficient and productive reading. Learning to read requires proficiency with a number of skills including phonemic awareness, knowledge of letters and

phoneme-grapheme relationships, development of automaticity, vocabulary acquisition, and the ability to extract meaning (Shaywitz & Shaywitz, 2008). It is the intricacies of these complex cognitive processes that have intrigued psychologists around the world and triggered decades of research. From this research scholars have developed theories and models that attempt to illuminate the visual, linguistic, phonological, and semantic processes involved in reading.

Many of the theories and models derived from this research represent attempts to describe or illustrate the interaction of the multiple cognitive processes that occur during the reading process. For example, following the publication of numerous, linear bottom-up and top-down models of reading, Rumelhart (1977) proposed an interactive model of reading in which bottom-up and top-down processes occur simultaneously. According to this model, a reader uses external visual data and internal conceptual information to inform their word reading. Stanovich (1980) built on this model when he proposed the interactive-compensatory model of reading in which higher level processes can compensate for deficiencies in lower-level processes. This theory has been confirmed through multiple studies which show that poor readers rely more heavily on context in word reading, while strong readers depend more heavily on orthographic cues (Briggs, Austin, and Underwood, 1984; Leu, DeGroff, and Simons, 1986). Another model that strives to illustrate the cognitive interactions that occur during reading, and continues to be investigated today, is the dual-route cascaded model (Coltheart, Rastle, Perry, Langdon, & Ziegler, 2001). This model posits that there are two routes involved in reading, a nonlexical route in which the reader "sounds out" a word using knowledge

about graphemes and phonemes, and a lexical route in which the reader is able to process the word as a whole and read by sight.

In recent years, advances in neurobiology and brain imaging have confirmed the complex, interactive nature of reading. Goswami (2008) emphasizes that "reading is one of the most complex cognitive skills that humans can learn" (p. 73). He highlights that it is a process supported by multi-modal neural networks that synchronize motor, language, semantic, and reasoning systems. Literacy success is largely, although not solely, dependent on the interaction of these cognitive factors. Disruption in one of these areas can impact a reader's ability to decode or comprehend text.

Reading Disability: Cognitive Deficits that Impede Literacy Development

Lerner (1989) identified reading disability as the most common learning disability, affecting over 80% of those identified as learning disabled (as cited in Shaywitz & Shaywitz, 2008). In addition to evolving our understanding of literacy development, researchers have also endeavored to identify deficits that underlie reading disability and impede literacy development. The quest to uncover the cognitive and biological foundations of the disorder is driven by the desire to develop more effective methods for identifying and treating reading disability. Research has shown that deficits can occur in both the nonlexical and lexical routes involved in reading (Peterson, Penington, Olson, 2009). Cognitive deficits that have been examined include phonological, rapid naming, semantic, and attention processes. According to Stothard (1994), research suggests that about 10% of poor readers are "word callers," individuals who can read accurately but have difficulty comprehending a text (as cited in Aaron, Joshi, Gooden, & Bentum, 2008). However, a majority of the students with reading disabilities struggle with the

ability to decode words and read accurately and fluently. This category of reading disability, known as developmental dyslexia or specific reading disability, has been linked to deficits in several cognitive processes.

Many developmental psychologists were integral in developing the phonological model of dyslexia, which theorizes "that dyslexics have a specific impairment in the representation, storage and/or retrieval of speech sounds" (Ramus et al., 2003). The phonological model recognizes that deficits in the ability to manipulate phonemes, the smallest units of sound, generate difficulties in word decoding and identification. Stanovich (1988) proposed the Phonological-Core Variable-Difference Model (PCVDM), a framework that suggests phonological processing abilities as the defining characteristic of a dyslexic reader. The PCVDM differentiates between a dyslexic reader and a "garden-variety poor reader" by underscoring that a dyslexic reader will exhibit a processing deficit localized in the phonological core, while the "garden-variety poor reader" will exhibit more globalized deficits. A longitudinal study conducted by Wagner, Torgesen, & Rashette (1997) confirmed the link between phonological processing and the ability to read words, identifying that phonological processing ability was the factor that had the strongest correlation to word-level reading over time. Today, although various competing theories of dyslexia have been argued, there is strong agreement that the most influential cause of reading disabilities is a weakness in phonological coding (Vellutino, Flethcher, Snowling, & Scanlon, 2004).

Although converging evidence has substantiated the phonological theory of dyslexia, researchers continue to explore other factors that may contribute to the development of reading disability. The double-deficit hypothesis proposes that in

addition to phonological core deficits, there is evidence of a second core deficit related to naming-speed (Wolf & Bowers, 1999). According to this theory, a naming speed deficit can exist independent from a phonological deficit, or both deficits could exist concurrently. Individuals with deficits in both processes experience greater difficulty with the reading process.

Additional research has examined the role of automaticity and attention in reading development and reading difficulties. LaBerge and Samuels (1974) introduced the theory of automatic information processing which maintains that reading processes are strengthened through repetition and practice. Readers first learn lower level processes and once these skills become automatic, and demand less attention, more focus can be allocated to higher level processes. Logan (1997) also examined the role of attention in reading development, postulating that automaticity in reading processes occurs through episodic memory. Attention is required for a process to be stored in memory and become available for automatic retrieval. Shaywitz and Shaywitz (2008) suggest that the disruption of attentional mechanisms should be explored as a factor in reading disabilities.

Recent advancements in the field of neurobiology have strengthened the consensus that networks in the brain that serve phonological and rapid naming processes behave differently in nonimpaired and dyslexic readers. Converging evidence in brain research also suggests that disruption in attention mechanisms may contribute to reading difficulties.

Early investigations into the biological foundations of dyslexia, scientists used post mortem studies and anatomical magnetic resonance imaging (aMRI) to study the

brains structure of dyslexic individuals. Many of these studies produced evidence that the brain structure of dyslexics differed from individuals without dyslexia (Vellutino et al., 2004). More recently, functional magnetic resonance imagining (fMRI) and other neuroimaging tools have enabled neurologists to examine brain function during specific cognitive tasks. Shaywitz and Shaywitz (2008) identify three neural systems in the left hemisphere involved in the reading process: an anterior system involved in articulation and word analysis, and two posterior systems, one serving word analysis and one believed to be responsible for the rapid, automatic identification of words. The coordination of these networks is crucial for reading processes to occur efficiently and effectively. Evidence collected by Shaywitz (1998, 2002) shows significant differences in brain activation patterns between nonimpaired and dyslexic readers on phonological tasks, specifically in the posterior left hemisphere (as cited in Shaywitz & Shaywitz, 2005). The two posterior systems critical to word analysis and rapid naming are underactivated in dyslexic individuals.

Neuroimaging tools have also revealed compensatory behaviors in dyslexic readers. While nonimpaired readers rely heavily on left-brained networks during the reading process, a dyslexic reader relies on right brained networks. Shaywitz et al. (2002a) found that during reading tasks, dyslexic readers displayed increased activation in a left anterior system, as well as in two right brained networks. These results indicate that dyslexic readers utilize compensatory brain networks to aide them with reading tasks. Shaywitz et al. (2007) also revealed that the neural reading systems of nonimpaired and dyslexic readers develop differently with age (as cited in Shaywitz & Shaywitz, 2008). Nonimpaired readers activate a system for reading that builds on

knowledge of how letters and sounds are linked, while dyslexic readers activate a system for reading that functions as a memory based system.

Reading Intervention: Importance of Early Identification

There has been much research showing the need for early identification and remediation of delays with regard to reading ability. In outlining the Matthew effects in reading, Stanovich (1986) explains how isolated deficits in reading ability can compound over time and develop into more generalized reading deficits. For example, a student who struggles with phonemic awareness as a kindergarten student may develop poor word identification and fluency skills. This in turn could lead to decreased print exposure and motivation to read, which will ultimately impact vocabulary development and impede comprehension of text (Cunningham & Stanovich, 1998; Oka & Paris, 1986; Brown, Palincsar, & Purcell, 1986, as cited in Torgesen, 2002). By the time this student reaches middle school, an isolated reading deficit could develop into a multifaceted reading problem.

Perhaps most intriguing, are studies that have used imaging to record brain activity prior to and after intervention, revealing that after intervention efforts, dyslexic children showed increased activity in the neural circuits necessary for successful reading (Vellutino et al., 2004). These findings suggest that instructional methods and environmental factors can impact brain functioning. Richards et al. (2000) found that after an intervention period, dyslexic boys experienced more efficient brain metabolism. This suggests that treatment can improve brain functioning. Similarly, Aylward et al. (2003) found that brain systems in the left and right hemispheres of dyslexic adults experienced increased activation after an intervention period of eight weeks. These

finding have important implications for the development of intensive early intervention and special education programs. Therefore, it is imperative that we examine current practices for effectiveness in identifying "at-risk" children and providing intervention early in elementary school.

Specific Learning Disability: Federal and State Level Guidance

Dyslexia, along with other subgroups of reading disability, is a specific learning disability (SLD) under the *Individuals with Disabilities Act (IDEA).* SLD is "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 the 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" (IDEA, 1997). Reauthorizations made through the *Individuals with Disabilities Education Improvement Act* (IDEIA) in 2004, specify procedures for identifying individuals with SLD. The revisions indicate that states must adopt criteria for classification of SLD, and that the policies they establish must meet the following three conditions: IQ-achievement discrepancy must not be required, processes based on response to research-based intervention must be permitted, and alternative research-based procedures for determining SLD must be permitted. These regulations reflect an extreme change in perspective from previous regulations which required a severe IQ-achievement discrepancy to establish a classification of SLD (IDEA, 1997). Although the use of severe discrepancy continues, the allowances of alternative methods of identification have resulted in greater variability in diagnostic practices.

This change in federal legislation has brought about shifting currents in state policies and district approaches to diagnosis of SLD. For example, survey results published by Reschly and Hosp (2004) revealed that 48 states used a severe IQ-achievement discrepancy. Conversely, a survey conducted by Zirkel and Thomas (2010), well after the new regulations had gone into effect, show that 12 states required response to intervention (RTI), 5 prohibited severe discrepancy methods, and 38 states allowed the use of severe discrepancy *or* RTI models to identify SLD. More recently, Hauerwaus, Brown, and Scott (2013) reported that 17 states require RTI, and 8 prohibit severe discrepancy models to identify SLD. The survey results collected in this research study, collected from 2011 sources, revealed that many of the states that require the use of RTI require additional data be collected through cognitive or achievement testing. The series of surveys represented here produced data that show a definite trend toward the use of RTI in the diagnosis of SLD.

New Jersey is one of the many states who responded to changes in IDEIA (2004) by enacting regulations permitting the use of RTI methods, in addition to IQ-achievement discrepancy, to classify SLD [N.J.A.C.6A:14-3.5(12)]. As of 2011, New Jersey was one of 33 states that allowed RTI, but did not require it (Hauerwaus, Brown, & Scott, 2013). This group represents the majority, with a fewer number of states opting for full requirement of the RTI process. Conversely, New Jersey was in the minority with regard to RTI guidance. It was one of only 5 states that provided no published guidance on RTI as a multitiered framework involved in the special education process and diagnosis of SLD.

Models for Diagnosing Reading Disability

Prior to IDEIA (2004), SLD was identified through a severe IQ-achievement discrepancy (SD). This assessment approach is linked to the notion that dyslexia, and other categories of SLD, are characterized by an "unexpected" difficulty with a particular facet of learning (Ferrer, Shaywitz, Holahan, Marchione, & Shaywitz, 2010). Using this approach, states employed various methods for measuring intelligence and determining "severe" discrepancy. The effectiveness of the discrepancy model, promoted by the federal government since 1977, has long been scrutinized. Arguments against SD methods highlight evidence that refute correlations between intelligence and reading disability, and show that different types of IQ tests will identify different groups of students as severely discrepant. Stanovich and Siegel (1994) present data suggesting IQ-achievement discrepancy has no correlation to indicators of reading disability. Thus, SD is a poor marker of SLD because IQ-discrepant low achievers and nondiscrepant low achievers do not differ on measures of reading processes. Vellutino (1996) reinforced this argument with data showing that IQ scores were not an accurate predictor of reading achievement in struggling or normally achieving readers (as cited in Gresham & Vellutino, 2010).

The discrepancy model does not reflect current understandings about the phonological nature of dyslexia. To clarify, it is not the search for discrepancy that is disconcerting, but rather the role that IQ has in identifying discrepancy. Neuroscientist Sally Shaywitz (2003) asserts, "now that the central role of the phonological deficit has been proven, the diagnosis of dyslexia can be far more specific" (p.137). It is the presence of phonological deficits in an individual that has otherwise strong language

abilities that is the essential condition that characterizes dyslexia. Many researchers suggest that the discrepancy model should evolve to assess discrepancies between phonological and nonphonological abilities, such as using listening comprehension to measure aptitude and comparing it to reading comprehension (Stanovich, 1991; Bishop & Snowling, 2004).

As evidenced by research, there is a growing trend in the use of RTI to identify individuals with SLD. The RTI model seeks to identify students who are resistant to intervention. Students who are not responsive to effective reading instruction in the regular classroom will participate in a series of tiered interventions (Fuchs & Fuchs, 2006 as cited in Brown Waesche, Schatschneider, Maner, Ahmed, & Wagner, 2011). If a student is resistant to the most intensive interventions over a significant period of time, they may be classified with SLD. In this approach, students with severe, cognitive and biological reading disability can be distinguished from "garden-variety" poor readers whose reading difficulties may be the result of experience or instruction and are easier to remediate (Vellutino et al., 2004). Another benefit of this model is that it can be applied school-wide so "at risk" students are identified early and intervention efforts can be employed. This addresses one of the shortfalls of the discrepancy approach which often results in a "wait to fail" period. The inability to establish "severe" discrepancy in the early years often exacerbates reading problems. According to the Matthew Effects, reading difficulties experienced over time may impact IQ scores negatively (Stanovich, 1986). Therefore, in older individuals, it may be difficult to differentiate someone who is reading disabled from a "garden variety" poor reader.

Although there is value in the RTI model, inconsistencies in the implementation of this approach make it difficult to draw conclusions about its effectiveness. For example, resistance in an RTI program could be determined through a growth measure, a one-time benchmark assessment, or through a dual discrepancy measure. Based on collected data, Brown Waesche et al. (2011) suggest that this variation presents a problem because different approaches may identify different groups of children as SLD.

Chapter 3

Methodology

Context

The present study will take place in the state of New Jersey. According to the United States Census Bureau (2014) population estimates the projected population of NJ in 2013 was close to 8,899,339. This accounts for 3% of the country's total population. The expected composition of this population is 57.6% White, 14.7% African American, 18.9% Hispanic or Latino, 9.2% Asian, and 2.7% other. Approximately 29.6% of individuals residing in NJ speak a language other than English at home, and 22.7% are under 18 years of age. Data collected from 2008-2012 reveals that 87.9% of the population has graduated from high school, which is slightly over the national average. In addition, 35.4% of NJ residents have a bachelor's degree or higher, which is again higher than the national average. The median household income based on data collected from 2008-2012 is $71,637 with 9.9% of persons below the poverty level.

The state of NJ has twenty-one counties. Eight of these counties are included in the present study. The combined population of these counties is 2,218,628, which accounts for 25% of the state's total population (U.S. Census Bureau, 2014). The estimated composition of this population is 67.5% White, 16.1% African American, 13.2% Hispanic or Latino, 4.4% Asian, and 3.0% other. Approximately 16.9% of individuals residing in these eight NJ counties speak a language other than English at home. Throughout these counties, an average of 22.2% are under the age of 18. Data collected from 2008-2012 for these regions reveals that 86.5% of the population has

graduated from high school, and 26.7% of residents have a bachelor's degree or higher. The average median household income is $66,877, with 10.8% of persons below the poverty level. A breakdown of key demographic factors for each of the eight counties is reported on table 3-1.

Table 1

Demographics of Target New Jersey Counties

County	Population	White (Not Hispanic or Latino)	Black or African American	Hispanic or Latino	Asian	Other	Median Household Income*
Atlantic	275,862	57.2%	17.3%	18.2%	8.1%	3.3%	$54,559
Burlington	450,838	69.4%	17.5%	7.3%	4.8%	3.1%	$78,229
Camden	512,854	70.4%	21.0%	15.4%	5.6%	2.9%	$62,320
Cape May	95,897	86.0%	5.0%	7.0%	1.0%	2.3%	$56,370
Cumberland	157,332	48.6%	21.8%	28.6%	1.4%	4.4%	$51,530
Gloucester	290,265	80.0%	10.6%	5.4%	2.9%	2.3%	$74,915
Mercer	370,414	52.6%	21.1%	16.2%	10.0%	2.9%	$73,759
Salem	65,166	75.8%	14.7%	7.7%	1.0%	2.5%	$59,336

Note. Population data based on 2013 projections made by the United States Census Bureau (USCB). * Medium household data reflects data collected by the USCB between 2008-2012.

According to the U.S. Department of Education, National Center for Education Statistics (2013), 13% of children 3 to 21 years old enrolled in public school were classified with a disability in 2011. Of these classified students, 36% were identified

with SLD, accounting for 4.8% of all enrolled students (National Center for Education Statistics, U.S. Department of Education, 2014) . A higher percentage of students received special education services for SLD than for any other type of disability. Each year, the New Jersey Department of Education (NJDOE) Office of Special Education Programs collects information on the number of students classified under various disabilities. In 2011, the NJDOE (2013) reports that 77,117 students, ages 3-21, received special education services under the classification of SLD. This group represents 35.4% of all students with disabilities encompassed by all eligibility categories. This figure is consistent with national averages. In 2013, data shows that the number of students diagnosed with SLD dropped slightly to 33.6% (NJDOE, 2013).

Design

The framework for the current study is a qualitative research paradigm. This paradigm is typically used to acquire an in-depth understanding of a behavior or phenomenon and the perceptions that drive that behavior or phenomenon. Like quantitative research, the qualitative method involves collecting, analyzing and interpreting data. However, rather than focusing on controlling variables, hard data, and statistical analysis, qualitative research focuses on collecting data in a natural setting and considering context in the interpretation of that data. "Applied to an educational context qualitative or naturalistic research recognizes that what goes on in our schools and classrooms is made up of complex layers of meanings, interpretations, values and attitudes" (Hitchcock, G., & Hughes, D., 1995, p. 25). Thus, in this type of research, a qualitative interpretation made by an inside participant is favored over a quantitative interpretation made by an outside observer.

In addition to a qualitative framework, the present study also utilizes the illuminative evaluation model. "Illuminative evaluation has three overlapping stages: investigators observe; inquire further; and then seek to explain" (Parlett & Hamilton, 1972, p. 18). Data methods used in this approach can include observation, questionnaires, interviews, and collection of background information. "The primary concern of illuminative evaluation is with description and interpretation rather than with measurement and prediction" (Parlett & Hamilton, 1972, p.10). Its aim is to examine features and processes in an attempt to describe and understand practice. The researcher is to collect data to explore emerging patterns and themes, and then "examine the situation, using knowledge drawn for experience and research findings to illuminate it, in order to improve it" (Hitchcock, G., & Hughes, D., 1995, p. 28). Investigators in the present study aim to isolate the significant features of practices used to identify SLD in New Jersey, delineate cycles of cause and effect, understand relationships between legislation, school characteristics, beliefs and practices, and explain the findings. The qualitative inquiry strategies used to conduct this study include online surveys, one-on-one interviews, and the collection of demographic data from online databases.

Participants

Participants included in this study consist of New Jersey school districts located in the following eight counties: Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, and Salem. All public school districts in these regions were included regardless of demographic background. However, participation was voluntary. School districts were recruited by contacting the special education supervisor through email. Only participants who signed consent forms were able to take part in the study. The

informed consent statement clearly stated the purpose of the research, the potential risks and benefits, as well as information about the confidentiality of the data collected. Our target population within the eight New Jersey counties was comprised of 186 school districts. 41 of these districts participated in the online survey phase of the study and 3 districts participated in the interview phase of the study. Table 2 outlines enrollment data and demographics for the participating school districts.

Table 2

*Characteristics of Participating Districts**

District Code	DFG	Number of Schools	Grades	2011-2012 Enrollment	Students with IEPs	Spending per Student	Federal Revenue	Local Revenue	State Revenue	Focus or Priority
1	DE	1	PK-12	418	37	$12,598.00	4%	48%	48%	0
2	A	8	PK-12	4990	571	$17,372.00	12%	12%	76%	4
3	B	1	PK-12	338	61	$18,585.00	6%	25%	69%	0
4	B	5	PK-12	1789	355	$20,112.00	6%	36%	58%	0
5	FG	2	7TH-12TH	2507	322	$14,117.00	3%	52%	45%	0
6	A	2	PK-12	633	123	$15,775.00	10%	14%	76%	0
7	CD	9	PK-12	4365	711	$14,312.00	5%	54%	41%	0
8	A	2	PK-8	504	106	$26,597.00	12%	45%	44%	0
9	CD	7	PK-12	7800	1030	$15,223.00	5%	58%	37%	2
10	DE	1	K-12	99	17	$16,055.00	5%	66%	29%	0
11	A	1	PK-8	609	61	$17,739.00	9%	12%	79%	1
12	FG	23	PK-12	12441	2307	$14,824.00	5%	52%	43%	0
13	GH	2	PK-6	1481	207	$13,117.00	3%	61%	36%	0
14	B	1	K-12	255	43	$37,409.00	5%	73%	22%	0
15	A	1	PK-12	468	63	$16,027.00	8%	25%	67%	0
16	GH	7	PK-12	4051	782	$17,878.00	4%	86%	10%	0

Table 2 (continued)

District Code	DFG	Number of Schools	Grades	2011-2012 Enrollment	Students with IEPs	Spending per Student	Federal Revenue	Local Revenue	State Revenue	Focus or Priority
17	GH	2	PK-8	890	165	$15,712.00	2%	81%	17%	0
18	CD	1	PK-12	193	13	$16,745.00	3%	73%	24%	0
19	B	2	7TH-12TH	1547	501	$18,384.00	5%	62%	33%	0
20	FG	4	PK-8	1624	300	$19,133.00	3%	66%	31%	0
21	CD	1	PK-12	164	16	$14,735.00	5%	72%	23%	0
22	DE	2	PK-12	492	82	$20,652.00	3%	89%	8%	0
23	B	1	PK-12	395	72	$14,369.00	5%	37%	58%	0
24	I	6	PK-12	4068	628	$16,581.00	3%	87%	10%	0
25	CD	4	PK-6	1259	263	$21,111.00	43%	11%	46%	0.00
26	CD	1	PK-12	469	89	$16,808.00	4%	64%	32%	0.00
27	DE	3	PK-12	2073	369	$35,694.00	3%	90%	7%	0.00
28	CD	1	K-8	228	23	$21,610.00	3%	59%	38%	0.00
29	B	4	PK-12	1896	430	$22,839.00	5%	46%	48%	0.00
30	CD	5	PK-12	1794	285	$17,590.00	4%	43%	53%	0.00
31	B	3	PK-8	838	177	$14,391.00	5%	50%	45%	0.00
32		2	K-12	652						0.00
33	CD	3	PK-8	1098	200	$16,060.00	9%	51%	40%	0
34	CD	3	PK-6	1363	198	$13,759.00	5%	48%	47%	0.00
35	FG	3	PK-12	1405	236	$16,448.00	3%	67%	30%	0.00
36	A	17	PK-12	9734	1297	$17,584.00	7%	13%	81%	1.00
37	I	5	PK-8	3173	514	$16,345.00	2%	82%	16%	0.00
38	DE	1	PK-6	58	10	$26,196.00	3%	79%	18%	0.00
39	B	1	PK-12	261	45	$20,170.00	3%	86%	12%	0.00
40	A	4	PK-12	796	206	$24,122.00	10%	58%	31%	2.00
41	A	1	K-12	195	26	$20,437.00	11%	37%	52%	0.00

Note. District Factor Group (DFG) data was collected from NJDOE (n.d.). Demographic data represented is from the 2011-2012 school year (National Center for Education Statistics, U.S. Department of Education, 2014). Blank cells indicate that data was not available. * Numbers in the table reflect traditional public school districts. (Charter schools are not included in this data.)

The New Jersey district factor groups (DFGs) reported in Table 2 are approximate measures of a school district's relative socioeconomic status based on the most current census and a "useful tool for examining student achievement and comparing similarly-situated school districts in other analyses" (New Jersey Department of Education, n.d.). There are currently eight district factor groups (i.e., A, B, CD, DE, FG, GH, I, and J, respectively). DFG A represents the lowest socioeconomic status and DFG J represents the wealthiest districts (New Jersey Department of Education, n.d.).

Instruments

To gather data for this study, multiple qualitative research techniques were employed. To establish the context of the study, state demographic information about New Jersey, as well as information about the demographics of the eight counties being researched, was collected. Statistical information about the prevalence of SLD at the national and state level was also gathered.

Next, an online data collection tool was used to survey local school districts in New Jersey about their practices for diagnosing specific learning disability. This survey was created using the Google Forms application, which was then sent by email to the 186 public school districts located in the eight targeted counties. The first section of the

survey included a letter of consent. Once the participants had consented, they completed ten survey questions. The questions included on the survey asked about the methods their district currently uses to identify students with SLD. The questions specifically probe for information about the district's implementation of an IQ-achievement discrepancy model and/or a response to intervention model (see Appendix A). The survey was designed to take participants approximately 15 minutes to complete.

In addition to the online surveys, one-on-one interviews were also conducted with one Special Education Supervisor and three Learning Disability Teacher Consultants that work within the eight New Jersey counties researched. Prior to the interview, participants completed one or two consent forms. The first consent form obtained permission to conduct the interview, while the second sought allowance of audiotaping during the interview. The interview process consisted of an unset number of questions and followed a conversational structure. Interviews lasted for approximately one hour.

Finally, data was collected about the demographics, social characteristics, and economics of all of the individual school districts who participated in the survey and/or interview process. This data was collected from reports published by the New Jersey Department of Education, the United States Census Bureau, or the National Center for Education Statistics.

Procedure and Timeline

This research was conducted from November 5th to December 1st, 2014. In the first phase of the study, online surveys were distributed through email to 186 school districts in New Jersey. Participants had until November 26th to complete these surveys. In the second phase of the study, interviews were conducted with special education

supervisors or Learning Disability Teacher Consultants in three New Jersey public school districts. These interviews took place between November 11th and December 3rd. The final phase of the study, the data analysis, occurred from November 26th - December 6th.

In phase one, survey data was collected on a digital spreadsheet on a personal computer. Survey data self-populated on the spreadsheet through the use of a Google form, which connects the survey and spreadsheet. The co-investigator was the only person with access to this data. The school districts that participated in this study were coded so that data could not be tied to the name of the school district. All data remains confidential and will be deleted after a six year period.

In phase two, one hour, one-on-one interviews were carried out with one special education supervisor and three LDTCs. The interviews were conducted on site in each of the three school districts. During the interviews, participants were asked about the methods and tools their district uses to identify students with SLD, as well as the methods and tools their district uses to identify and remediate students who are "at-risk" with regard to reading ability. Responses were collected through written notes and/or an audio recording device, when consent was given. All data remains confidential and will be deleted after a six year period.

Analysis

The data collected throughout the course of this study was examined in an attempt to draw conclusions about patterns and themes that emerged from the data. The survey responses were analyzed to see which practices are the most prevalent in the diagnosis of SLD throughout the eight New Jersey counties being researched. The collected data was also examined to detect trends in the use of RTI after the implementation of IDEIA 2004.

Demographic information collected on each of the participating districts was then used to explore relationships between diagnostic practices and district characteristics. Finally, interview responses were considered to provide further insight about the diagnostic practices being used.

After patterns and themes in the data were established, the diagnostic practices of local districts were examined to see which practices reflect or conflict with current understandings about the cognitive and biological basis of reading disabilities, such as dyslexia. The prevalent diagnostic methods being used were evaluated in the context of current understandings and research about reading disabilities. The intent of this process was to illuminate how patterns of diagnostic practice correspond to knowledge of reading disability.

Methodological triangulation employing multiple qualitative data collection tools was used to examine diagnostic practices for identifying SLD. The results from surveys, interviews, and demographic data collection was compared to look for consistencies in the data and draw valid conclusions. Environmental triangulation was also used to strengthen the analysis phase. Many different local school districts were surveyed and/or interviewed about their practices for identifying SLD and to determine if there are correlations between diagnostic practices and environmental factors, such a school demographics, social characteristics, and economics.

Chapter 4

Results

Introduction

The purpose of the present research is to explore the practices that local school districts in New Jersey are using to identify reading disabilities categorized under SLD. Survey and interview responses were examined to identify patterns in the methods that are used for the identification of SLD in NJ. An analysis of the data collected explored correlations between diagnostic practices and the participating schools' demographic, social, and economic background. Survey and interview responses were also scrutinized to detect patterns that occurred within the employment of various methods. In addition to a pattern analysis, a trend analysis was conducted to examine how district policies for diagnosing SLD have been affected by the Individuals with Disabilities Education Improvement Act of 2004. A look across all data sources seems to suggest four main themes that reoccur throughout the research study. These include the prevalence of the IQ-achievement discrepancy (SD) model in diagnosing SLD in NJ, a lack of correlations between diagnostic methods and district characteristics, a slow progression of RTI in NJ, and inconsistent implementation of diagnostic methods.

Response Rate

As reported in the previous chapter, participants for the study were recruited for two types of qualitative data collection. For the survey, the special education supervisors of New Jersey school districts were contacted through email. Email was also used to recruit special education coordinators to participate in the interview phase of the study. Participants included in the study consisted of NJ school districts located in the following

eight counties: Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, and Salem. With regard to the survey, of the 186 supervisors contacted, 41 traditional school districts and 2 charter school districts responded. This reflects a response rate of 22%. Due to limited demographic data, the two charter schools were not included in the data analysis. The counties that had the largest percentage of the student population represented in the data were Cape May and Cumberland County (see Table 3).

Table 3

*Number of Participating School Districts by County**

County	Total Number of Districts	Number of Participating Districts	Percentage of County's Student Population Represented by Participating Districts
Atlantic	28	5	24%
Burlington	42	4	8%
Camden	46	6	8%
Cape May	16	7	49%
Cumberland	16	6	63%
Gloucester	28	4	20%
Mercer	17	2	23%
Salem	15	7	31%

Note. Data based on 2011-12 school year (National Center for Education Statistics, U.S. Department of Education, 2014). * Numbers in the table reflect traditional public school districts. (Charter schools are not included in this data.)

Atlantic, Gloucester, Mercer, and Salem counties experienced moderate participation rates, with approximately 1/5-1/3 of the student population represented. The counties that had the lowest participation rates were Burlington and Camden County.

Of the three special education coordinators contacted for the interview phase of the study, all three responded, reflecting a response rate of 100%. Two of the special education coordinators asked if one or more Learning Disabilities Teacher Consultants (LDTCs) could represent the district in the interview. Therefore, interviews were conducted with1 special education coordinator and 3 LDTCs.

Use of Severe Discrepancy Method Dominates in New Jersey

Out of the 41 schools who responded to the online survey, 27 of the schools currently use SD only to identify SLD. The other 14 schools use a combination of methods, utilizing both RTI and SD procedures to diagnose SLD. There were not any schools who reported using RTI only to determine eligibility under the SLD category (see Figure 1). Thus, IQ-achievement discrepancy continues to be the prevalent method in the identification of SLD in New Jersey.

Responses from the conducted interviews support this finding. All three of the districts interviewed participated in the survey phase of this study, and currently use the SD method in some manner. Furthermore, interviewees shed light on why IQ-achievement discrepancy continues to be favored. In one of the interviews, a participant suggested that IQ-achievement is the "easier and cleaner" of the two methods because the criteria is definitive. An evaluator can clearly establish whether a child has a large

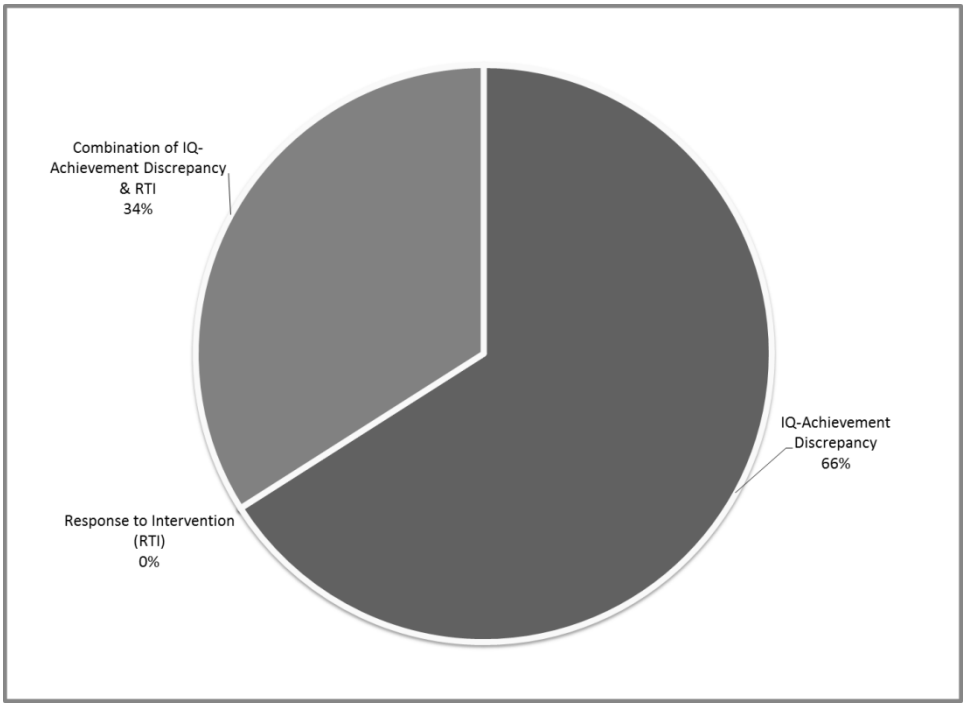

Figure 1. Method frequency distribution. Data has been rounded to the nearest percent.

enough discrepancy or not by looking at two standard scores and calculating a difference between them. Concerning RTI progress, this participant explained that the "system is stalled" due to a lack of RTI guidance and sample models on the part of the state.

A second participant, whose district has a well-established RTI program, revealed that members of the district had received extensive RTI training as a participant in the state of New Jersey's Plan to Revise Special Education (P2R) pilot back in the late 1980's and early 1990's. Subsequently, the entire district received training in 2000, the year that the district-wide RTI initiative began. This district now uses RTI to assist with SLD identification. In this example, efforts by the state seemed to support pilot districts in RTI implementation. During the pilot, the state was very active in collecting information about school practices and investigating "how and what" districts were using.

However, the interviewee stated that after the pilot period, state efforts to support RTI and to collect data about intervention and referral practices dwindled, and the state is "now not monitoring" methods. This participant also pointed out that during the P2R pilot they often "communicated with other schools involved," but "lost that community when the pilot ended."

Another factor that was discussed during this interview was the amount of time that it takes to administer various evaluation instruments. The participant indicated that an IQ test, completed by the school psychologist could be completed in two hours or less, while an LDTC might require three to four hours to administer a series of reading achievement assessments. Thus, time constraints can impact the evaluation process.

Absence of Correlations between Diagnostic Methods and Demographics

A pattern analysis of the survey data demonstrates no strong correlations between the school districts' methods for identifying SLD and various demographic factors that characterize the districts. For example, a comparison of diagnostic methods and the grade levels served by districts does not reveal a clear pattern (see Figure 2). School districts serving grades PK/K-12 were represented most heavily; 73% of which use SD only. There were two categories of districts that did not serve high school students. One of these categories consisted of districts serving a PK/K-6 population. Data analysis shows that the SD only method is slightly more popular with this group of districts. Conversely, districts serving PK/K-8 populations slightly favored a combination of SD and RTI methods. Two high schools districts participated, one of which used SD only and one that used a combination of methods. It is important to note that the sample size of the PK/K-12 category was much higher than the other categories.

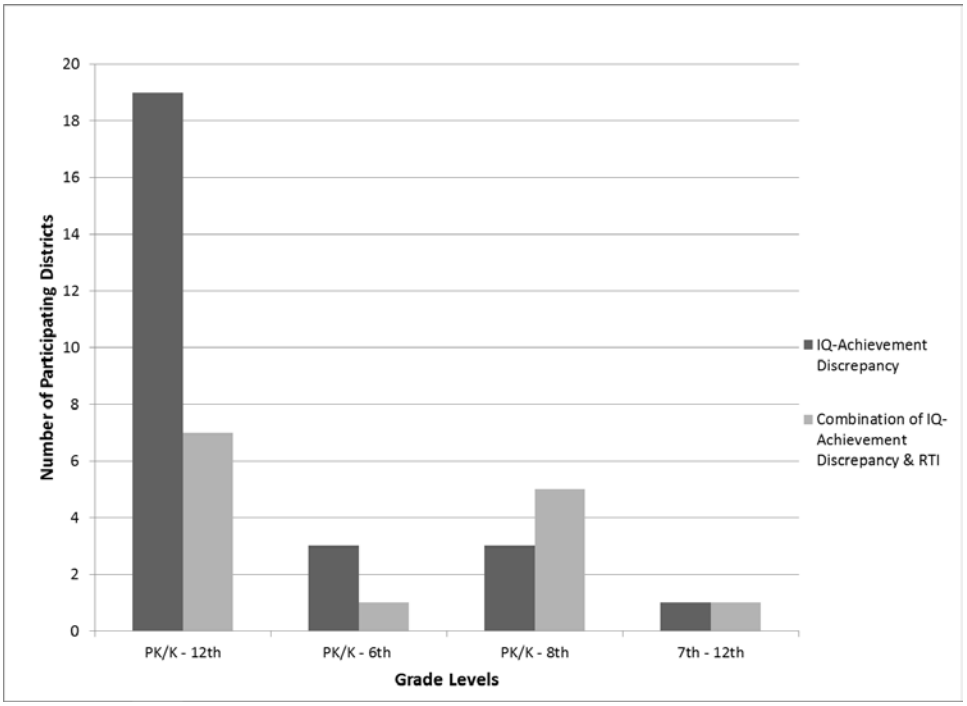

Figure 2. Bar graph of diagnostic method and district grade levels. Demographic data represented is from the 2011-2012 school year (National Center for Educational Statistics, U.S. Department of Education, 2014).

Another relationship that was investigated was that of diagnostic method and District Factor Group (DFG), which are reflective of the socioeconomic characteristics of a region (see Figure 3). The SD only method was most prevalent in most of the district factor group categories. Districts with DFGs of DE had the highest rate of the combined SD and RTI method. The FG and I categories had an equal distribution of SD only and combination schools. DFGs that were more broadly represented were A, B, and CD. In all three of these categories combined, the SD only method is used by 73% of districts. The DE, FG, GH, I, and J categories were represented by a smaller sample size.

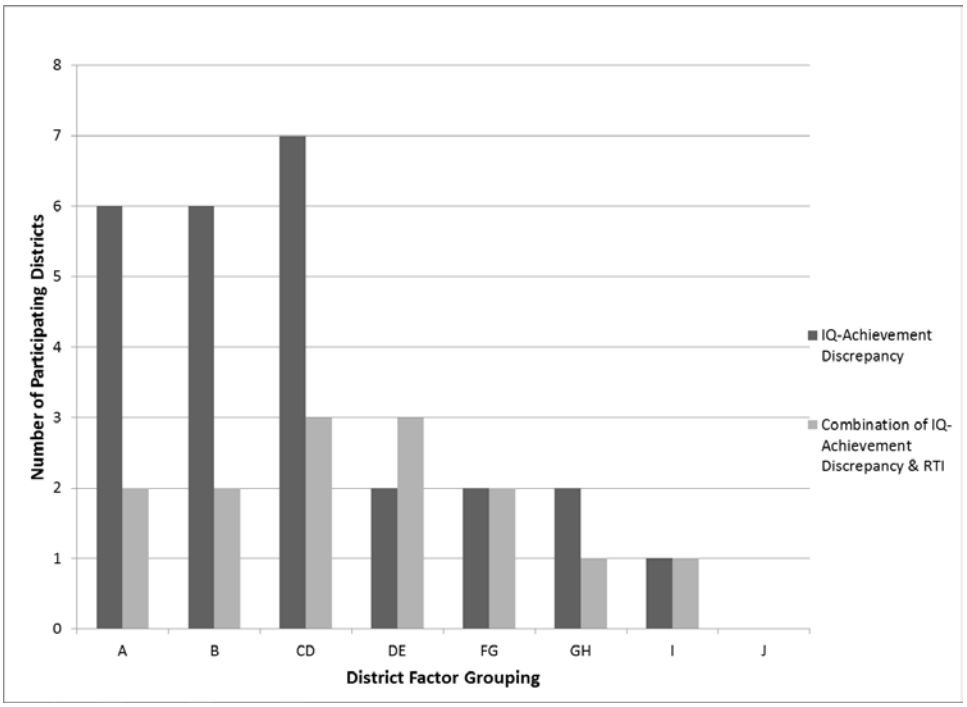

Figure 3. Bar graph of diagnostic method and District Factor Groups. District Factor Group data was collected from the New Jersey Department of Education (n.d.).

In addition to socioeconomic compositions, the size of the participating districts were also considered during data analysis. The first variable examined was the number of schools that comprised a district (see Figure 4). Smaller districts, with 1-3 schools, accounted for 63% of participating districts. In this sampling, 18 out of 26 districts utilized SD only, while 8 employed a combination of methods. A particular component of this data provides insight about the practices of many of these smaller school districts. One individual responded to the survey on behalf of 10 traditional public school districts. All of these districts are small in size and outsource Child Study Team services from the same resource, and therefore employ identical practices.

SD was also the predominant method among slightly larger districts, with 4-6 schools, although this category consisted of a smaller sample size. Among the six largest

districts that participated in the survey, there was an even distribution of SD only and SD/RTI schools. Again these categories were represented by a much smaller sample, 4 districts with 7-10 schools, and 2 districts with over 10 schools.

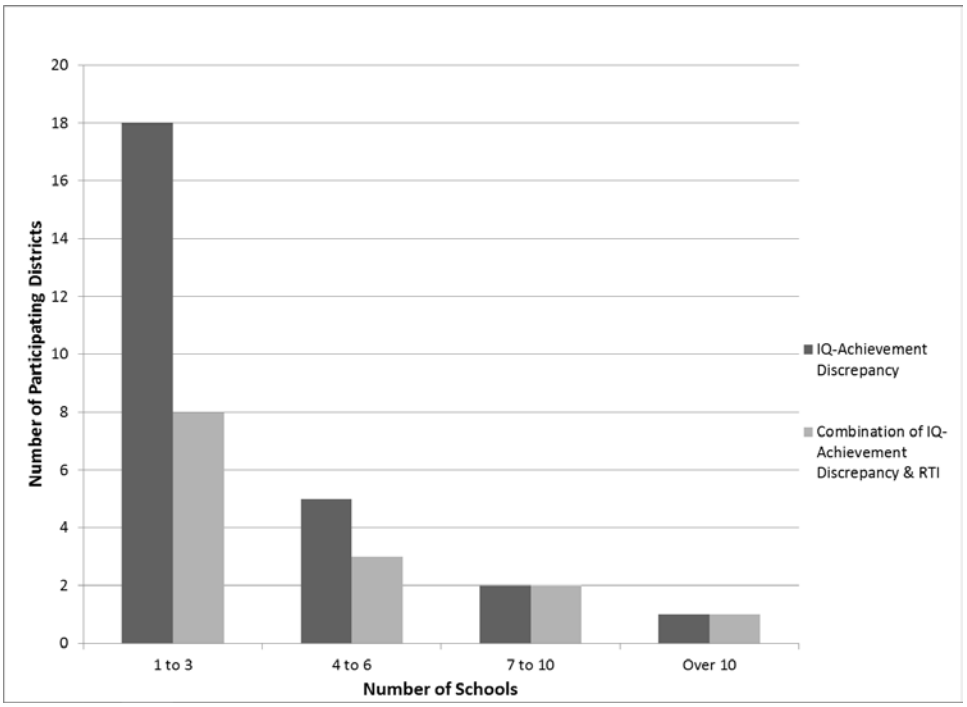

Figure 4. Bar graph of diagnostic method and number of schools in district. Demographic data represented is from the 2011-2012 school year (National Center for Educational Statistics, U.S. Department of Education, 2014).

Another feature related to the size of a district is the number of students enrolled. Among the participants, there was a higher response rate of smaller districts with lower student enrollment numbers. The SD only method clearly overshadowed the SD/RTI combination method in districts with lower student enrollment numbers (see Figure 5). Data shows that the SD only method was less dominant in larger districts with more students enrolled, but there was also a smaller sampling of schools in these categories.

The SD/RTI combination approach was distributed throughout schools of varying sizes with no clear pattern established.

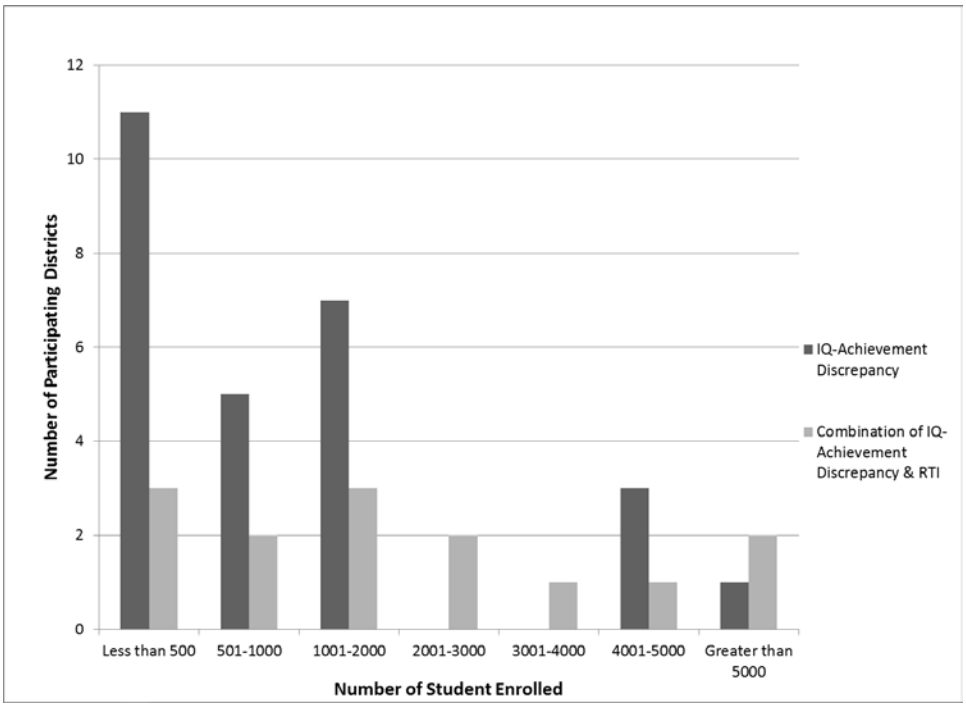

Figure 5. Bar graph of diagnostic method and district student enrollment. Demographic data represented is from the 2011-2012 school year (National Center for Educational Statistics, U.S. Department of Education, 2014).

While many aspects of the pattern analysis showed a majority of the participating districts concentrated in a certain category, an examination of the relationship between diagnostic method and spending per students reveals a more varied distribution. A majority of participating districts spend $16,000-$16,999 per student (see Figure 6). The bar graph suggests a bell curve which peaks at this amount. This data shows that the SD only method prevails in most of the spending categories, with a few exceptions. For example, in both the $15,000-$15,999 and the $19,000-$19,999 categories there is a

greater incidence of the SD/RTI combination method. In addition, in the $20,000-$20,999 grouping there is an even division of SD only and SD/RTI combination schools.

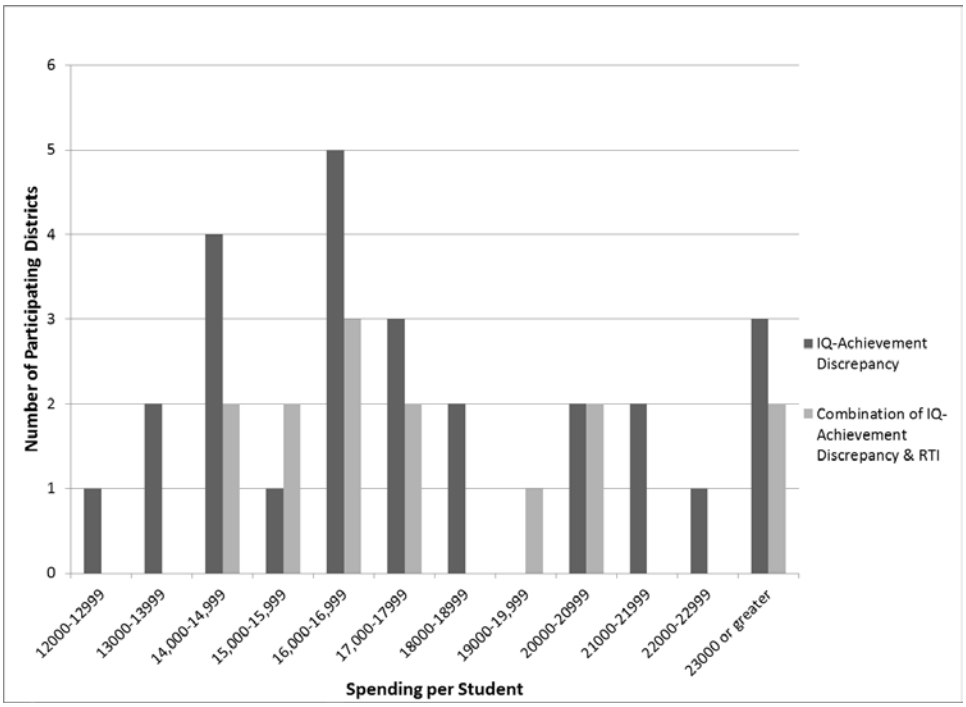

Figure 6. Bar graph of diagnostic method and district spending per student. Fiscal data represented is from the 2010-2011 school year (National Center for Educational Statistics, U.S. Department of Education, 2014).

The last relationship that was explored was that of diagnostic method and revenue source. An examination of SD/RTI districts and their funding sources reveal that 11 out of 14 of these schools are predominantly locally funded and 3 get most of their revenue from the state (see Figure 7). However, a majority of SD only schools (14) are also predominantly locally funded while a smaller number (6) receive a majority of funding from the state (see Figure 8). Therefore, the major revenue source did not seem to correlate with one diagnostic method over the other.

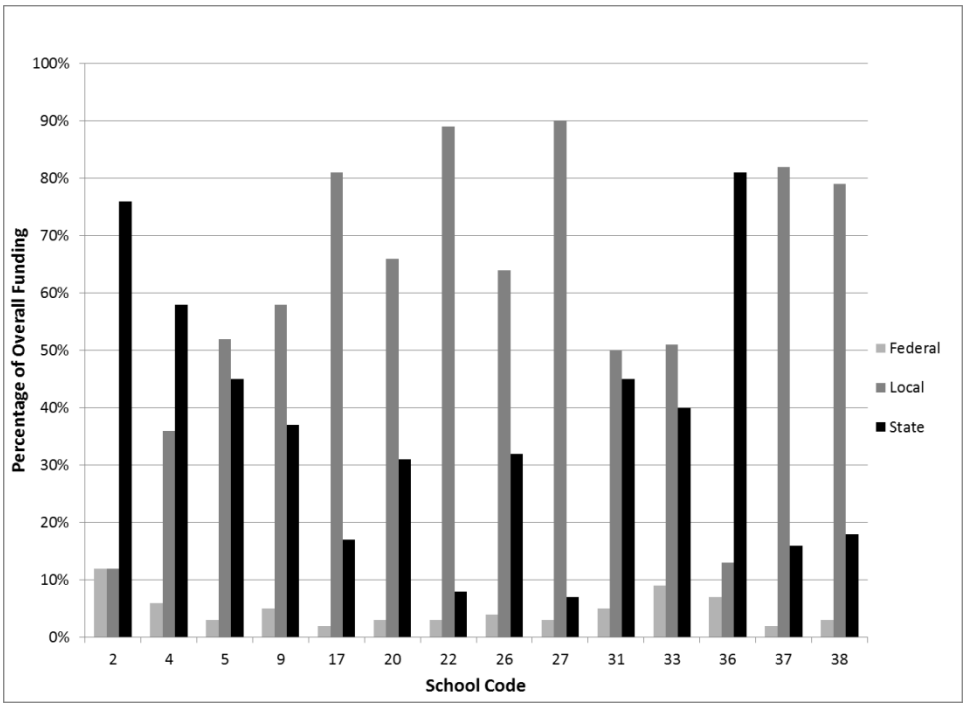

Figure 7. Bar graph of revenue sources for districts using a combination of SD and RTI. Fiscal data represented is from the 2010-2011 school year (National Center for Educational Statistics, U.S. Department of Education, 2014).

During an analysis of revenue source, attention was also given to New Jersey priority and focus school classifications. Priority schools have been identified as among the lowest-performing of schools in the state over the past three years, and focus schools have an achievement gap in an identified subgroup. These schools work with state representatives to develop school improvement plans and raise achievement. Within the SD/RTI category, two of the districts that are primarily state funded have focus schools within the district and a larger student enrollment. The SD category also includes several districts with focus schools, but these schools have smaller student enrollment. In general, the inclusion of focus or priority schools in a districts does not seem raise the prevalence of RTI.

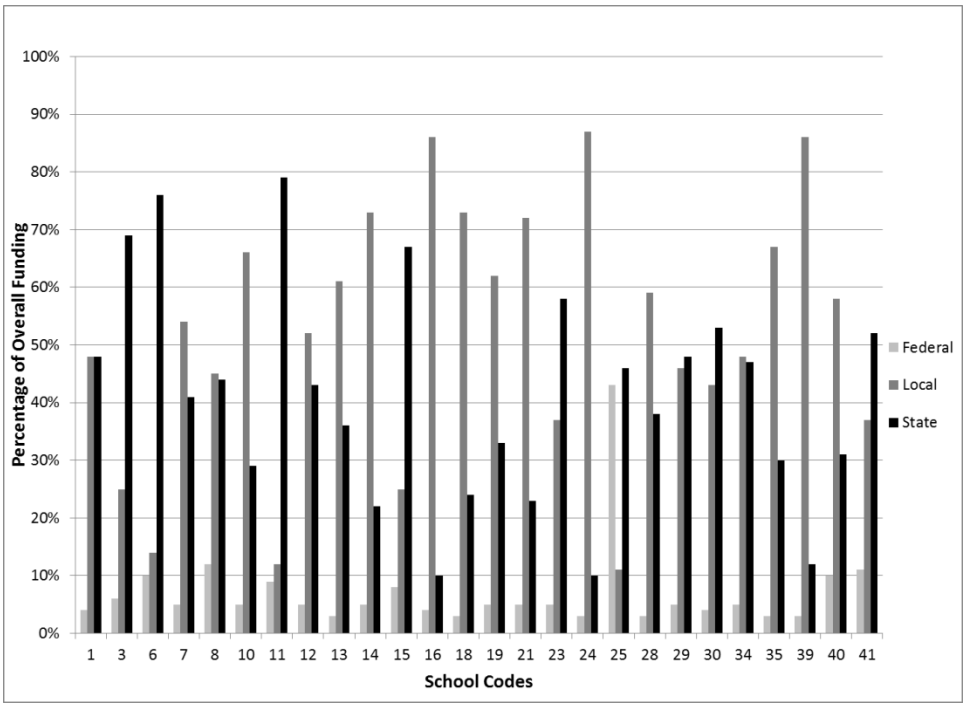

Figure 8. Bar graph of revenue sources for districts using SD only. Fiscal data represented is from the 2010-2011 school year (National Center for Educational Statistics, U.S. Department of Education, 2014).

Overall, in each of relationships that were explored, categories representing a larger sample size tended to illustrate the overall pattern of SD only dominance. Categories which represented smaller samples of respondents tended to fluctuate with regard to which methods were dominant. Therefore, it was very difficult to detect strong correlations between diagnostic methods and the demographic data that was collected. This is perhaps due in part to the limited sample size. Regardless of this, an examination of the data did raise questions that encourage further exploration of the relationship between these factors.

Interview data elucidated these findings given that, of the three districts that were interviewed, there was a unclear relationship between the diagnostic method used by the district and the demographic factors. For example, the two districts with very different demographics employed a combined SD/RTI method, while the two districts that had similar demographics employed different methods (one SD only and one SD/RTI). This was evident from survey responses. Interviews conducted with these districts, however, revealed similarities and differences were revealed stronger similarities between the two districts that reported different methods, but had comparable demographics. To clarify, although one of the districts did not have a formal RTI program established tied to identification of SLD, the interview phase revealed that this district did offer many interventions identical to that of the district with the formal tiered RTI program. These interventions include the Wilson Fundations and Wilson Reading Programs, as well as the use of teachers who provided remediation outside of the classroom teacher. One difference however, is that the district without formal RTI utilized reading specialists for special education students only who had established Individualized Education Plans, while the district with the formal RTI model utilized reading specialists for both general and special education students.

Deeper analysis which occurred through interviews also reveals that there are significant differences in the RTI program design of the two districts that use a combination of SD/RTI. For example, in one district the I&RS team is a critical factor in determining who will receive RTI and placing students in various tiers. Conversely, in the other district students are selected for RTI participation separate from the I&RS process. Although students can be recommended for RTI during the I&RS process, RTI

teachers are primarily responsible for selecting participants for tiered intervention based on set criteria. A second significant difference is that in one district, they have the resources to address the needs of all "at-risk" students and certified reading specialists impart the interventions. However, the other district does not have the resources to provide all "at-risk" children with the proper tier of intervention. They also do not use certified reading specialists to provide the intervention. It is important to note that this second district has a much higher student enrollment and a lower DFG than the first district.

Slow Progression of Response to Intervention in New Jersey

As previously stated, 14 of 41 participating districts reported that they use a combination of SD and RTI methods to identify SLD. None of the participating districts reported that they relied solely on RTI methods to diagnose SLD. In addition to the 14 districts who use RTI for classification purposes, 6 schools who employ SD only did respond to questions that asked about the use of a multi-tiered intervention system within the district. This highlights the important fact that there are districts that have RTI programs, but may not use them for identification of SLD. In addition, 2 schools indicated that they are in the process of building a formal RTI program, one in the early stages and one in the later stages.

An analysis of the starting dates of RTI programs reveals trends in the growth of RTI in NJ (see Figure 9). From 2004-2006, the period during which changes in SLD legislation were occurring, there was some growth in the use of RTI. Survey data shows that 3 of the participating school districts established RTI programs during this time period, although not necessarily for diagnostic purposes. There was 1 school district

which implemented an RTI model prior to changes in legislation. Data shows that slow growth continued throughout the period of 2007-2009, with 2 additional districts initiating RTI programs. The greatest period of growth occurred between 2010-2013. During this time 9 new RTI programs were launched among districts who took part in the study. Although data shows a dip in growth in 2014, 2 of the respondents indicated through survey responses that RTI programs were in the process of being established.

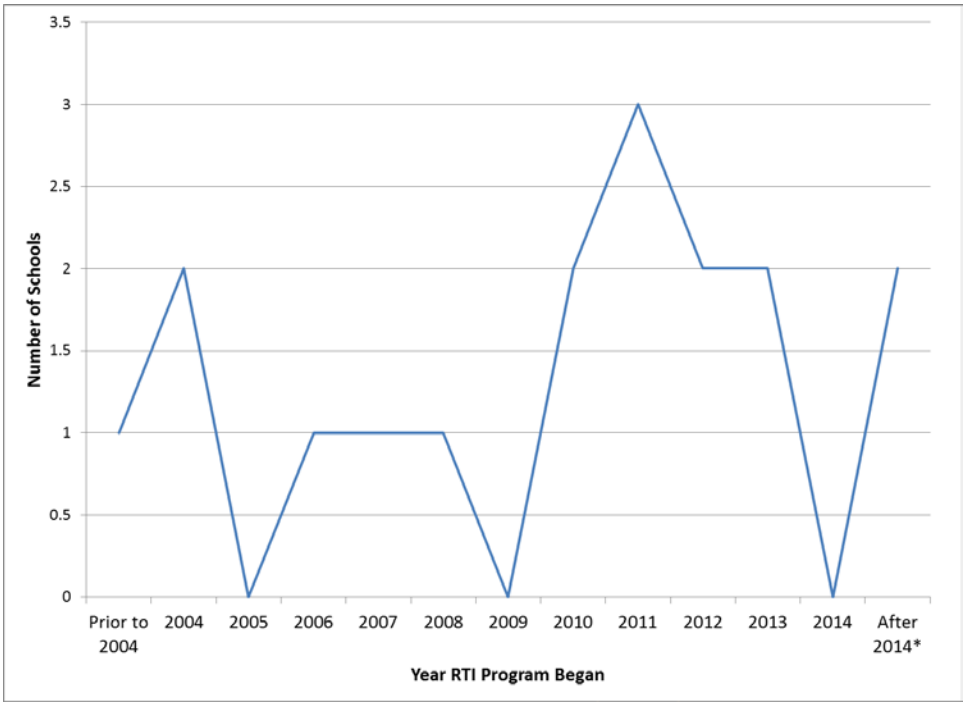

Figure 9. Line graph of RTI program establishment dates.

Interview data also reveals trends in the growth of RTI in New Jersey. All three districts that participated in this phase of the study represent various stages of growth. For example, one of the districts was an early adopter and established a formal RTI program in 2000, before drastic changes in legislation had been made. This district, as a participant in the P2R pilot, received training in RTI. The representative interviewed

from this district shared The RTI Guide: Developing and Implementing a Model in Your Schools (McCook, 2006). This manual, first published in 2000, was introduced to them through training and they used it as a guide to building an RTI program. This establishment of the RTI program in this district "came out of I&RS." One of the main focuses of the P2R pilot was to initiate Pupil Assistance Committees (PACs), which then evolved into Intervention and Referral Services (I&RS). Therefore, exploration of RTI was tied heavily to special education initiatives intended to impact referral and evaluation processes.

Another of the districts interviewed, established their RTI program in 2011, which falls during the period of greatest growth according to the data collected. According to the district's RTI Handbook: "The district will utilize the framework for early detection and intervention of students in danger of inadequate learning outcomes in the content areas of literacy and mathematics. RTI will be an intricate piece to increasing performance levels of the students in the school district. RTI will include the identification of students with academic delays, the implementation of research based interventions and the systematic monitoring of progress to determine student responsiveness. The RTI program will not only provide early interventions for students at risk, but also provide the district with a valid procedure for identifying students with learning disabilities." However, this district is unable to service all "at-risk" students due to limited resources. An LDTC from this district recalled reading many research studies during graduate school highlighting the success of RTI. However, in many of these studies graduate students were coming into the classroom to impart the intervention. The LDTC explained that in reality, when RTI has to be implemented by a district, it is not as

easy and there are challenges such as students getting pulled out of class multiple times a week.

The third district interviewed in this phase of the study represents future growth. A conversation with the special education supervisor revealed the Child Study Team in the district was currently researching RTI practices. The supervisor explained that the goal was to be "bottom-up" about this process, so that those who would be integral to implementation would feel ownership for it. Therefore, the supervisor is encouraging research to "promote discussion." The goal is to "sometime in the 15-16 school year to have the CST layout a plan to the superintendent and principals." This is another district, in addition to the 2 schools who referred to future RTI programs in survey responses, who implicated future RTI growth. The supervisor of this third district did indicate that a lack of guidance on the part of the state could be impeding the growth of RTI programs.

Variation in Implementation of Diagnostic Methods

Beyond looking at an overall pattern in the diagnostic methods being used in New Jersey, an important purpose of the survey administered was to explore variations in how each method is being employed. An analysis of survey responses with regard to procedures for establishing SD and executing RTI reveals that there is inconsistent implementation of both methods.

An examination of SD methods shows differences in perspectives about what constitutes a severe discrepancy, the allowance of an override, and in the tools used to establish an IQ score and an achievement score (see Table 4). For instance, although a majority of schools (51%), require a standard deviation between 1.1-1.5 (16-23 points) to establish a severe discrepancy, there is a wide range of criteria used by participating

Table 4

IQ-Achievement Discrepancy Model Results

Discrepancy Procedures	Schools Using SD Only	Schools Using SD & RTI	All Schools
SLD Requirements			
1 standard deviation	15%	14%	15%
1.1-1.5 standard deviations	59%	36%	51%
1.6 - 2 standard deviations	7%	14%	10%
Washington Tables (SD varies with IQ)	15%	29%	20%
Allowance of Override			
Yes	52%	93%	66%
No	48%	7%	34%
Number of IQ Instruments Utilized			
1	22%	14%	20%
2-3	33%	64%	44%
4-5	7%	7%	7%
Greater than 5	37%	7%	27%
Number of Reading Achievement Tools Utilized			
1	15%	0%	10%
2-3	30%	64%	41%
4-5	56%	21%	44%
Greater than 5	0%	14%	5%

Note. All calculations were rounded to the nearest percent. Blank responses are not represented on the table.

districts. Some districts require a standard deviation of 1 (15 points) while others use a standard deviation of 2.0 (30 points). Furthermore, there are additional districts that use the Washington Tables (see Appendix B) which use a sliding scale based on IQ and achievement scores. An intriguing trend that revealed itself in the data is that SD only districts tended to use a smaller standard deviation. Also, while a majority of districts using a combination of SD/RTI used a standard deviation between 1.1-1.5, districts in this category were more likely to use a larger standard deviation or the Washington tables.

Another factor that varied among schools was the allowance of an override which gives the CST the ability to classify a student even in the absence of a severe discrepancy. A majority of schools allowed for an override (see Table 4). However, a breakdown of the data by diagnostic method indicates that districts who utilize RTI are more likely to allow an override. Specifically, 93% of SD/RTI districts allowed for an override versus 52% of SD only districts.

Regarding evaluation instruments, there is also great variation among the number of tools that a district makes use of and which instruments are used. A majority of districts (44%) cite the use of 2-3 tools to ascertain IQ (see Table 4). This is especially true of SD/RTI districts, 64% of which named 2-3 tools. While many SD only districts utilize 2-3 tools as well (33%), a slightly greater percentage (37%) of these districts named over 5 tools. The same CST, however, services all ten of the districts represented by this percentage. Also, important to note is that 20% of districts named only 1 instrument used for establishment of an IQ score. Survey data reveals districts that

named more IQ instruments were more likely to allow an override, while districts that named fewer instruments were more likely to not allow an override. With regard to reading achievement, a majority use multiple assessment tools, with 41% using 2-3 instruments and 44% using 4-5 instruments (see Table 4). A greater number of SD/RTI districts use 2-3 instruments, while a greater number of SD only districts use 4-5 instruments. Again, the same CST team services many of the SD only districts using 4-5 instruments. In assessing achievement, fewer districts (10%) utilized only 1 tool.

An examination of the data also reveals great variation in the actual tools used by these districts to determine SD. For example, there were over 10 IQ measurement tools named in survey responses. The Wechsler Intelligence Scale for Children (WISC) was by far the most prevalent of these tools, used by all of the districts who responded to the survey (see Table 6 in Appendix C). Other instruments used with great frequency to obtain an IQ score include the Wechsler Preschool & Primary Scale of Intelligence (WPPSI), Woodcock Johnson III (WJIII), and the Stanford-Binet Intelligence Scale (SBIS). There were also a great number of reading achievement tools reported in survey responses. Specifically, there were over 10 norm-reference standardized instruments names, as well as additional assessments such as informal reading inventories and criterion-referenced assessments, such as the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) and the Fountas and Pinnell Benchmark Assessment (see Table 7 in Appendix C). Of the norm-referenced instruments, the Wechsler Individual Achievement Test (WIAT) and Woodcock-Johnson Test of Achievement (WJ) were most popular. Informal Reading Inventories, such as the Jerry Johns, Qualitative Reading Inventory, and the Diagnostic Reading Inventory were also cited frequently. Many of these IQ and

reading achievement instruments are designed to assess individuals of varying ages and grades on a number of different skills. Thus, the broad range of tools being utilized could be connected with the ages of students being served by a district.

Once more, interview responses shed light on the variation that exists with regard to employment of these methods. This was the case during a conversation about the use of standard deviations with participants from two different districts. In one interview an LDTC explained the district had changed the method for standard score comparison from 1 standard deviation to 1.5 standard deviations because too many students were qualifying for special educations services. This led to a discussion of the state citing districts who classify too many students. A second participant happened to be representing a district who used 1 standard deviation and did not encounter a problem with using a 15 point discrepancy. This suggests that one factor affecting a districts' practices could be manipulating criteria to classify "enough" students, but not "too many" students.

With regard to SD methods, interviewees had different perspectives on the use of multiple tools. One LDTC felt that in most cases the Wechsler Individual Achievement Test (WIAT) was sufficient to assess reading achievement, but was permitted to use the Jerry Johns Basic Reading Inventory for additional data. On the other hand, an LDTC in a different district provided an extensive overview of multiple instruments that could be used to assess different reading processes. This LDTC agreed that the WIAT had many strengths, but seemed to appreciate the flexibility the district afforded her in selecting from a deep selection of assessments based on the individualized needs of a child.

There are also diversities in the implementation of RTI methods as well. From the data it is immediately clear that schools using RTI as a component of their diagnostic procedure do so with much variation. In fact, it was very difficult to organize the data in terms of the criteria used to identify "at-risk" students because there were so many different methods used. These included benchmark assessments, state test scores, reading level data, achievement-grade level comparisons, screening and progress monitoring tools. However, the factors that were mentioned repeatedly with regard to identifying "at-risk" students were teacher referral and Intervention & Referral Services (I&RS). I&RS seems to be an integral part of RTI implementation in that in many cases the individuals who serve on this team are the ones deciding who will receive intervention. These teams are also involved in progress monitoring as well.

Another observation that arose from the data is that there is great variation in the structure of intervention cycles (see Table 5). For example, a majority of the respondents (43%) indicate that there is a set number of cycles that a student would need to participate in before a CST referral could occur. The other 36% of respondents indicated that there was not a set number of cycles mandated in their district. Additionally, when asked to explain further, responses show great divergences in the number of cycles that a student would need to participate in and the length of these cycles. Many participants who indicated there was a set number of cycles did not clarify the number required. However, those who did, indicated anywhere from 4-5 marking periods. The range of the length of cycles reported was between 6-16 weeks. In addition, 50% of respondents indicated that failure to respond to intervention would result in an immediate referral to CST, while 29% indicated that it would not.

Table 5

RTI Model Results

RTI Procedures	Schools Using SD & RTI
Year RTI Program Began	
Before 2004	7%
2004-2006	7%
2007-2009	7%
2010-2013	57%
After 2013	0%
District Services all "At-risk" Students	
Yes	43%
No	36%
Set Number of Cycles	
Yes	43%
No	36%
Failure to Respond Results in Immediate CST Referral	
Yes	50%
No	29%

Note. All calculations were rounded to the nearest percent. Blank responses are not represented on the table.

A significant finding that emerged from an analysis of RTI practices involves the ability to serve all "at-risk" students (see Table 5). Survey results demonstrate that of the

14 districts using RTI data for classification purposes, 36% could not serve all "at-risk" students. Many respondents mentioned limited resources as a roadblock to RTI. Interestingly, the enrollment of districts who could not serve all "at-risk" individuals ranged from 1098-4990, while the enrollment of districts who could serve "at-risk" ranged from 58-2073. Most of the schools who had the resources to match needs had enrollments below 900 students.

During the interview phase of the study, participants also shared their experiences with RTI implementation, shedding light on patterns detected in the survey data. For example, the two districts interviewed that have formal RTI programs have very different approaches to RTI implementation. One program is closely tied to the district's I&RS process which closely case manages the participating students, while a district RTI supervisor and RTI teachers primarily monitor the other program. One LDTCs explanation of the role of the I&RS team in the RTI process successfully highlighted the seamless connection between RTI intervention and CST identification. Rather than using one or two criteria to identify "at-risk" students, this LDTC outlined a process that integrated classroom achievement, progress monitoring, and teacher input.

Another intriguing point that several participants raised is that RTI inconsistency exists because of a lack of guidance or a model of best practice. One supervisor mentioned "that New Jersey could have put out sample models" to support RTI implementation. Several participants confirmed that New Jersey is not currently surveying local districts about their diagnostic practices. The fact that the state is not collecting data about variation in RTI practices suggests that they are not facilitating the evaluation of RTI programs with regard to effectiveness and best practices.

Summary of Data Analysis

After looking across the data, it is evident that there is a strong reliance on SD methods in the identification of SLD within NJ. All of the participating districts use SD procedures in the identification of SLD. However, some rely on IQ-achievement discrepancy more heavily than others. Although there is slow growth in the number of RTI programs within the surveyed areas, a dependence of SD methods pervades New Jersey's diagnostic practices. The data shows that the growth of RTI programs in NJ peaked during the 2010-2013 period, and that exponential growth in the immediate future unlikely. In addition, the data reveals a lack of correlations between diagnostic methods and demographic characteristics. In this study there was not one socioeconomic, fiscal, or demographic factor that seemed to pair strongly with one SD only or SD/RTI methods.

The collective data also demonstrates considerable variation within the methods that are being employed. This inconsistency exists between districts using different diagnostic methods, but also between districts using the same method. This can be problematic for students moving between districts in the state because they may qualify as SLD in one district, but not in another. Within the SD only approach, the data shows variation relating to definitions of severe discrepancy, instruments used to establish IQ and reading achievement scores, and the allowance of an override decision by the CST. As for RTI methods, variation exists with regard to identifying criteria, number and duration of cycles, and the ability to service all identified students.

Chapter Five presents the conclusions and implications of this study as well as recommendations for further research.

Chapter 5

Discussion

Review

An earlier review of the literature revealed that criticism exists with regard to the diagnostic practices being used to identify SLD. Research has demonstrated that there is great variation in the implementation of both IQ-achievement discrepancy and response to intervention methods. The literature also suggests that diagnostic approaches for SLD may not reflect current understandings about reading disability, specifically dyslexia. This study aimed to explore variations and trends in the diagnostic practices employed by local school districts in the state of New Jersey in the identification of SLD. It also sought to evaluate these practices in light of recent research about the nature of dyslexia.

Results of this study indicate that SD dominates in NJ, with a majority of participating school districts (66%) continuing to use SD methods only to determine classification of SLD. However, there were a number of school districts (34%) who currently employ a combination of SD and RTI methods to identify SLD. Moreover, none of the participating schools used RTI only to identify students in the SLD category. A majority of the combination SD/RTI districts allowed the CST to make the decision to classify a student in the absence of a severe discrepancy (override). This indicates that although these schools are considering IQ-achievement as a significant factor, they are not as likely to use SD as the defining criteria for SLD.

Results of the present study confirm the findings of previous studies which have uncovered great variation in the use of both SD and RTI methods. With regard to the SD approach, participating districts varied in the measurements they used for establishing a

severe discrepancy, the evaluation tools they use to determine IQ and reading achievement scores, the number of evaluation tools utilized, and the allowance of a CST override in the absence of a severe discrepancy. For example, districts used very different criteria to identify SD, ranging from 1.0–2.0 standard deviations (15-30 points). Many schools use the Washington tables (see Appendix B), which use a sliding scale based on standard IQ and reading achievement scores. Further analysis of this data revealed that although a majority of all schools used a standard deviation of 1.1-1.5, SD only districts were more likely than SD/RTI districts to use a lower standard deviation of 1.0 and SD/RTI districts were more likely than SD only districts to utilize a larger standard deviation from 1.6-2.0 or the Washington Tables. In addition, SD/RTI schools are more likely to allow the CST to override and classify a student as SLD even when a SD has not been established. This finding suggests that schools that utilize RTI may push to establish a SD that is more statistically significant with the understanding that in the absence of a SD they may be permitted to consider a variety of other evidence.

Another important discovery is that 20% of participating school districts named one instrument in the determination of an IQ score and 10% named one instrument in the determination of a reading achievement score. A majority of schools do allow the use of 2-5 instruments which can be matched to the relevant needs and ages of the student. It is unclear what the motivations are driving the decision to limit or permit the use of multiple tools. However, these findings raise important questions about consistency and differentiation according to need.

As for RTI methodology, school districts varied in the criteria used to identify "at-risk" students for tiered intervention, the instruction and progressing monitoring tools

employed, and in the number and duration of cycles required before CST referral could occur. One interesting finding relating to RTI implementation, is that 36% of school districts that use RTI in the SLD identification process report that they are unable to service all "at-risk" students. Overall, the districts who experience difficulty providing tiered intervention to all students who need it tend to display larger student enrollment numbers than districts who are able to meet the needs of all "at-risk" students. This is a significant finding because if the RTI program is integral to SLD identification and referral to CST, a districts inability to provide intervention to all students in need may actually contribute to a delay in identification.

An encouraging discovery is that a majority of participating districts mentioned the Intervention and Referral Services (I&RS) team as having a role in the identification of "at-risk" students who will participate in RTI. This suggests that many districts are attempting to establish a connection between general education intervention and special education identification, and promote a discourse about multiple data points and collaborative input from classroom teachers and specialists. Another interesting finding that is closely connected to the importance of discourse is that 50% of districts reported that failure to respond to intervention would result in an immediate CST referral. Although responding to resistance to intervention with immediate attention is critical, several of the interview participants acknowledged that it is important to discuss why a student may be resistant before deciding to conduct a formal CST evaluation. Both of these LDTCs pointed out that in the case of English Language Learners, lack of adequate progress could be due to a limited period of exposure to the English language. This

example illustrates the importance of considering multiple factors and collaborative discussion prior to any CST referral.

A pattern analysis of the survey data revealed no strong correlations between diagnostic practices and school characteristics such as demographics, size, and funding. Overall, in each of the relationships that were explored, categories representing a larger sample size tended to illustrate the overall pattern of SD only dominance. Categories which represented smaller samples of respondents tended to fluctuate with regard to which methods were dominant. Therefore, it was very difficult to detect strong correlations between diagnostic methods and the demographic data that was collected. An analysis of the relationship between diagnostic method and a district's revenue source was particularly intriguing. There was no evidence that districts that received state and federal funding were more likely to use RTI. This evidence suggests that there is not a push on the part of the federal or state level to encourage RTI programs within New Jersey. This was also true of districts that contained focus or priority schools. Thus, it can be assumed that RTI is not a practice pressed by the Regional Achievement Center (RAC) teams throughout the state as a means of improving student achievment.

Additionally, results show that there is a slow progression of RTI in New Jersey. Of the 41 school districts that participated, 14 are currently using RTI to aide in identification of SLD. In addition, 6 participating school districts have established RTI programs that are not utilized in the identification of SLD. An examination of the program start dates show that from 2004-2006, the period during which changes in SLD legislation were occurring, there was some growth in the use of RTI. Survey data shows that 3 of the participating school districts established RTI programs during this time

period, although not necessarily for diagnostic purposes. Data shows that slow growth continued throughout the period of 2007-2009, with 2 additional districts initiating RTI programs. The greatest period of growth occurred between 2010-2013. During this time 9 new RTI programs were launched among districts who took part in the study. Although data shows a dip in growth in 2014, 2 of the respondents indicated through survey responses that RTI programs were in the process of being established. An additional interview participant also noted that the development of a formal RTI program was being researched in their district.

Even though a few of the participating districts suggested future growth, it is important to reflect upon reasons for stalled growth. For example, many respondents cited limited resources as a roadblock to RTI implementation and some mentioned having to scale intervention efforts back. It is also important to note the current climate in New Jersey schools. Within the last several years there have been several converging initiatives that have dominated the focus and resources of district decision makers. These include adoption of the Common Core State Standards, execution of a new evaluation system, and preparation for the upcoming transition to PARCC summative assessments. All of these shifts have consumed time, budgets, and staffing resources and could be impeding growth in other areas.

Conclusions

The present study has revealed considerable insight into the practices that New Jersey school districts are using to diagnosis SLD. A secondary purpose of this study was to evaluate these practices to ascertain how they reflect or conflict with research-based understandings about the underlying cognitive and biological foundations of

students with reading disabilities. After reconnecting with the literature surrounding the diagnosis of SLD and the nature of dyslexia, a reading disability that falls under this category, it is clear that there are gaps between existing theory and practice. However, there is encouraging evidence that practices and philosophies are beginning to shift in response to recent research.

This study has shown that SD continues to be the dominant method for identifying SLD within the eight New Jersey counties that were investigated. However, a significant amount of research has indicated that IQ scores are not an effective predictor of reading achievement. Many studies have demonstrated that IQ scores cannot differentiate impaired readers from normal readers, and impaired readers who respond to intervention from impaired readers who resist intervention (Vellutino, Scanlon, & Lyon, 2000; Fletcher et al., 1994). Research has also provided evidence that impaired readers and normal readers do differ on tasks of phonological skills, rapid naming, and verbal memory (Stanovich, 1988; Wolf & Bowers; 1999; Vellutino, Scanlon, & Lyon, 2000). Thus, there is a stark contrast between the practice of diagnosing dyslexia through SD and what many leading researchers believe to be the defining characteristics of dyslexia. SD remains the principal focus of diagnosis efforts, rather than establishing a pattern of strengths and weaknesses with regard to reading processes.

Within the application of the SD method, the findings of this study reveal great variation in the practices being used within New Jersey. Different standard deviations are employed to set the criterion for "severe" discrepancy, and a variety of instruments are used to establish IQ and reading achievement scores. Peterson and Shin (2002) stress the inconsistency of SLD identification within and across states (as cited in Restori, Katz, &

Lee, 2009). This irregularity has been confirmed by the present study. What this means for a child who moves from school to school within the state, or perhaps between states, is that they could qualify for special services under the category of SLD in one school, but be found ineligible elsewhere. Districts are able to manipulate variables within the practice so that they are identifying "enough," but not "too many," children for special education services. This inconsistent application of the SD method must raise uncertainty about its effectiveness.

With regard to SD evaluation tools, this study has revealed great variation in the number and type of tools used to assess IQ and reading achievement. Interview responses shed light on factors that go into the decision of which and how many tools to use. In several of the districts that were interviewed, a great number of tools were at the disposal of the CST to evaluate a child based on their specific needs, which takes into consideration grade level and age. However, another district that participated in the interview phase of the study revealed that their CST uses a very limited number of tools to establish IQ or reading achievement scores. While a multi-instrument approach allows for perhaps a more comprehensive assessment offering numerous data points, a limited instrument approach lends itself to consistency and is perhaps more conducive to time restraints.

One critical theme that arose from the interview phase of this study is that professionals who work within special education and have served on various CSTs, show support for the disuse of SD as the qualifying criteria for identification of SLD. During one interview a participant suggested that IQ is statistically not the best for identifying SLD and indicated they would be supportive of not using SD. Another participant

clarified that IQ tests are designed to provide a range, and that the SD method actually utilizes these tests in an unintended manner. It is important to note that all interview participants expressed that an IQ score is an important data point to consider. In fact, many would agree that IQ can be an essential component of a comprehensive assessment, but not the determining factor (Hale, Naglieri, Kaufman, & Kavale, 2006). For example, an IQ score when used in coordination with achievement scores can help detect overall cognitive impairment or an unexpected deficit. However, to use it as the defining criteria for the establishment of a reading disability is insufficient. Many participants in this study indicated that a CST could override and classify a student with SLD in the absence of SD. This shows that some districts that use SD do not necessarily use it as the defining characteristic. A higher percentage of these districts also use RTI. The practice of RTI, along with the allowance of overrides, bring districts closer to connecting diagnosis of SLD with research-based understandings about reading disability.

In addition to the SD method, an examination of RTI trends within the state is also valuable. There seems to be very slow growth in the practice of using a formal multi-tiered intervention program either to assist districts in identifying SLD or for general remediation purposes. This progression is encouraging, but underwhelming, considering that IQ-achievement discrepancy methods often result in a "wait-to-fail" period. Lyon, Fletcher, Fuchs, and Chhabra (2006) draw attention to the fact that special education statistics indicate that the odds of being diagnosed with SLD peak in 3rd and 4th grade (as cited in Restori, Katz, & Lee, 2009). Thus, many students do not receive much needed intervention until this time. This outcome can be detrimental considering how a localized reading difficulty can compound overtime and become more severe and

generalized (Stanovich, 1986). Conversely, practices that promote early intervention for "at-risk" students can help remediate and identify simultaneously. Snowling (2013) optimistically highlights RTI as a model that "involves monitoring the progress of a group of children through a program of intervention rather than undertaking a static assessment of their current skills" (p.10). This suggests that the 34% of participating districts who are using a combination of SD/RTI methods are beginning the process of identification much earlier than districts using SD solely. This allows for a more comprehensive assessment over a longer period of time, and also promotes instructional methods and environmental factors that can impact brain functioning changes in brain activity (Vellutino et al., 2004, Richards et al., 2000, Aylward et al., 2003). The use of a combined SD/RTI approach is one way to reduce a disconnect between general education and special education processes, and stimulate smooth transitions between increasingly more intense levels of intervention. It is also a method that promotes early intervention, which is a key factor in the treatment of reading disabilities.

While the growing presence of RTI is promising, there are concerns about the implementation of this method. As with SD, there is a great deal of variation in the approaches being used to define RTI processes. One inconsistency is that the structure of a formal multi-tiered intervention program can look very different from district to district. This study has shown that there are many decisions made about the screening criteria, number of intervention cycles, duration of intervention cycles, and progress monitoring tools employed in an RTI program without any guidance from the state of New Jersey. Just as with the SD method, this has resulted in great variation occurring within the state. While flexibility often affords opportunities of self-discovery, experimentation and

success, lack of support and guidance can often lead to anxiety, apprehension, and ineffective application. This lack of support can come from the absence of resources and/or information. This was a theme that was brought up several times as respondents shared their experiences. Several interview respondents noted frustration that the state has provided little guidance with regard to the implementation of RTI. Several survey respondents cited lack of resources as a roadblock for RTI, which could include limited funding or staffing.

There are other states, however, that provide extensive guidance on the implementation of RTI. Hauerwas, Brown, and Scott (2013) conducted a study revealing that as of 2011, New Jersey was one of five states that offered no RTI guidance. In the study the authors reveal that of the 45 states that offer RTI guidance, 13 offer guidance on RTI as an instructional and identification tool, and 16 states offer specific guidance on how to use RTI in the diagnosis of SLD. This shows that New Jersey, in comparison to the country as a whole, is weak in efforts to support RTI implementation. Some states have even made RTI programs mandatory. Hackett (2010) provides a description of Illinois' efforts to support statewide implementation of an RTI framework, in which RTI is defined as "a comprehensive process that provides a greater context for decision-making" (p. 37). In its efforts to support this RTI initiative, Illinois created documents that outlined a framework for using RTI to identify students under the category of SLD, but also for broader applications. Furthermore, they provided statewide training, coaching, and resource support. The absence of these supports in the state of New Jersey may contribute to the slow progression of RTI within the state.

Limitations

There are several limitations to the current study. The obvious limitation is the limited sample size of New Jersey school districts represented in this study. A small sample decreases the generalizability of the findings to similar contexts. However, the framework for this research was qualitative and illuminative in nature. Unlike quantitative research, which strives to make generalizations and predictions, the goal of qualitative research is to deepen an understanding of a behavior or phenomenon. This goal was achieved even with the smaller sample size. However, in the future, quantitative studies that attempt to collect data about the use of SD and RTI from a larger sample would be extremely beneficial in establishing patterns.

Another limitation of this study was that it focused on a certain geographic region within New Jersey that included the entire southern part of the state and some central counties. This region of the state differs greatly from northern New Jersey and results may have varied had the investigation been carried out in the northern region or the entire state. Again, this research was qualitative in nature and conducted in a region surrounding the university which sponsored the study. Thus, the investigator was exploring a familiar context with the aim of expanding insight about local practices. To expand on the findings of this study, future research could explore different regions in New Jersey or perhaps strive to include participants from all 21 counties in the state.

Implications

The findings of the current study hold many implications for future research and inquiry. Foremost, is the relationship between the construct of SLD and diagnostic method of IQ-achievement discrepancy. These two concepts have a long history which

has entwined them. While some states have made strides in redefining processes for identifying SLD, it seems that New Jersey is experiencing difficulty in evolving diagnostic practices. Future research which explores perspectives about SLD and SD at various levels (e.g. state legislators, NJDOE, special education supervisors, school psychologists, LDTCs) could help us understand overall attitudes toward diagnostic practices and the use of SD and RTI within the state.

A second implication that is worthy of further investigation, is the lack of data collected about diagnostic methods. A more widespread research study, including a larger geographic region within the state or a larger sample, could facilitate a deeper understanding of the relationships that exist between diagnostic practices and district characteristics. While generating and distributing an online survey to collect this data would be relatively simple, a larger study would require extensive data analysis efforts. Thus, it may be necessary to focus on fewer factors within the study. This type of data collection would be most effective if conducted by the state, which has the authority to ensure high participation rates and the tools to conduct extensive data analysis.

The current study holds implications for the evaluation of shifts in practice that will occur due to newer legislation as well. During the completion of this study, schools within New Jersey have been in the process of providing training to their staff about new legislation regarding reading disability. A new law, P.L.2013, c.131, enacted in chapter 14 of Title 6A of the New Jersey Administrative Code provides a specific definition of dyslexia under the category of SLD. The definition, from the International Dyslexia Association (IDA), is as follows:

> Dyslexia is a specific learning disability that is neurological in origin. Dyslexia is characterized by difficulties with accurate and / or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge (IDA, 2002).

Just as IDEIA (2004) was a progressive change in legislation, the inclusion of this definition is a wonderful evolution in New Jersey legislation. However, it is far from a paradigm shift in that it does little to evolve diagnostic practices to align with the definition of dyslexia. For instance, a companion law, P.L.2013, c.210, requires New Jersey districts to use screening instruments to screen students who have exhibited an indicator of dyslexia. "In the event that a student is determined through the screening conducted pursuant to section 3 of this act to possess one or more potential indicators of dyslexia or other reading disabilities, the board of education shall ensure that the student receives a comprehensive assessment for the learning disorder" (C.18A:40-5.4). These new laws hold implications for both general and special education programs within the state, yet the state has not released any guidance with regard to screening processes, instruments or the subsequent comprehensive assessment that would need to occur should the screening process identify a student in need.

This study has revealed that one factor that may be impeding growth of the RTI movement within the state of New Jersey is a lack of guidance and model of best practice. Other states have proactively established RTI and dyslexia guidance for local school districts years before New Jersey. While many states are aggressively evaluating old archetypes and moving forward with creating new paradigms ground in current research, the state of New Jersey is taking small steps in the right direction. Although these steps have progressive intentions, in order to truly impact practice, larger strides need to be made in the support that the state of New Jersey offers local districts in the form of guidance documents, models of best practice, training, and resources.

References

Aaron, P. G., Joshi, R. M., Gooden, R., & Bentum, K. E. (2008). Diagnosis and treatment of reading disabilities based on the component model of reading: An alternative to the discrepancy model of LD. *Journal of Learning Disabilities, 41*(1), 67-84.

Aylward, E. H., Richards, T. L., Berninger, V. W., Nagy, W. E., Field, K. M., Grimme, A. C., et al. (2003). Instructional treatment associated with changes in brain activation in children with dyslexia. *Neurology, 61*(2), 212-219.

Bishop, D. V., & Snowling, M. J. (2004). Developmental dyslexia and specific language impairment: Same or different? *Psychological Bulletin, 130*(6), 858.

Briggs, P., Austin, S., & Underwood, G. (1984). The effects of sentence context in good and poor readers: A test of stanovich's interactive-compensatory model. *Reading Research Quarterly*, , 54-61.

Brown Waesche, J. S., Schatschneider, C., Maner, J. K., Ahmed, Y., & Wagner, R. K. (2011). Examining agreement and longitudinal stability among traditional and RTI-based definitions of reading disability using the affected-status agreement statistic. *Journal of Learning Disabilities, 44*(3), 296-307. doi:10.1177/0022219410392048 [doi]

Coltheart, M., Rastle, K., Perry, C., Langdon, R., & Ziegler, J. (2001). DRC: A dual route cascaded model of visual word recognition and reading aloud. *Psychological Review, 108*(1), 204.

Eamon, M. K. (2002). Effects of poverty on mathematics and reading achievement of young adolescents. *The Journal of Early Adolescence, 22*(1), 49-74.

Ferrer, E., Shaywitz, B. A., Holahan, J. M., Marchione, K., & Shaywitz, S. E. (2010). Uncoupling of reading and IQ over time: Empirical evidence for a definition of dyslexia. *Psychological Science, 21*(1), 93-101. doi:10.1177/0956797609354084 [doi]

Fletcher, J. M., Shaywitz, S. E., Shankweiler, D. P., Katz, L., Liberman, I. Y., Stuebing, K. K., et al. (1994). Cognitive profiles of reading disability: Comparisons of discrepancy and low achievement definitions. *Journal of Educational Psychology, 86*(1), 6.

Goodman, K. S. (1987). Acquiring literacy is natural: Who skilled cock robin? *Theory into Practice, 26*, 368. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=bsh&AN=6267178&site=ehost-live

Goswami, U. (2008). Reading, complexity and the brain. *Literacy, 42*(2), 67-74.

Gresham, F. M., & Vellutino, F. R. (2010). What is the role of intelligence in the identification of specific learning disabilities? issues and clarifications. *Learning Disabilities Research & Practice, 25*(4), 194-206.

Hackett, J. (2010). Developing state regulations to implement the response-to-intervention requirements of IDEA: The illinois plan. *Perspectives on Language and Literacy, 36*(2), 36-39. Retrieved from http://search.proquest.com/docview/1022994017?accountid=13605

Hale, J. B., Kaufman, A., Naglieri, J. A., & Kavale, K. A. (2006). Implementation of IDEA: Integrating response to intervention and cognitive assessment methods. *Psychology in the Schools, 43*(7), 753-770.

Hauerwas, L. B., Brown, R., & Scott, A. N. (2013). Specific learning disability and response to intervention: State-level guidance. *Exceptional Children, 80*(1), 101-120. Retrieved from http://search.proquest.com/docview/1430460527?accountid=13605

Hitchcock, G., & Hughes, D. (1995). *Research and the teacher: A qualitative introduction to school-based research* Psychology Press.

Individual with Disabilities Amendments of 1997, 64 Fed. Reg. 12406 (Mar. 12, 1999) (to be codified at 34 CFR Parts 300 and 303).

Individuals with Disabilities Education Improvement Act of 2004, 71 Fed. Reg. 46540 (Aug. 14, 2006) (to be codified at 34 CFR Parts 300 and 301).

LaBerge, D., & Samuels, S. J. (1974). Toward a theory of automatic information processing in reading. *Cognitive Psychology, 6*(2), 293-323.

Leu, D. J., DeGroff, L. C., & Simons, H. D. (1986). Predictable texts and interactive-compensatory hypotheses: Evaluating individual differences in reading ability, context use, and comprehension. *Journal of Educational Psychology, 78*(5), 347.

Logan, G. D. (1997). Automaticity and reading: Perspectives from the instance theory of automatization. *Reading & Writing Quarterly: Overcoming Learning Difficulties, 13*(2), 123-146.

Lyon, G. R. (1998). Why reading is not a natural process. *Educational Leadership, 55*(6), 14-18.

McCook, J.E. (2006). *The RTI Guide: Developing and Implementing a Model in Your Schools*. West Palm Beach, FL: LRP Publications.

New Jersey Department of Education. (n.d.). Executive summary (District Factor Groups). Retrieved from: http://www.state.nj.us/education/finance/rda/dfg.shtml

New Jersey Department of Education. Office of Special Education Programs. (2013). *Statewide rate trends,ages 3-21*. Retrieved from http://www.state.nj.us/education/specialed/data/2013.htm

Parlett, M., & Hamilton, D. (1972). " Evaluation as illumination: A new approach to the study of innovatory programs". occasional paper.

Peterson, R. L., Pennington, B. F., & Olson, R. K. (2013). Subtypes of developmental dyslexia: Testing the predictions of the dual-route and connectionist frameworks. *Cognition, 126*(1), 20-38.

Ramus, F., Rosen, S., Dakin, S. C., Day, B. L., Castellote, J. M., White, S., et al. (2003). Theories of developmental dyslexia: Insights from a multiple case study of dyslexic adults. *Brain : A Journal of Neurology, 126*(Pt 4), 841-865.

Reardon, S. F., & Galindo, C. (2009). The hispanic-white achievement gap in math and reading in the elementary grades. *American Educational Research Journal, 46*(3), 853-891.

Reschly, D. J., & Hosp, J. L. (2004). State sld identification policies and practices. *Learning Disability Quarterly, 27*(4), 197-213. Retrieved from http://search.proquest.com/docview/233087742?accountid=13605

Restori, A. F., Katz, G. S., & Lee, H. B. (2009). A critique of the IQ / achievement discrepancy model for identifying specific learning disabilities. *Europe's Journal of Psychology, 5*(4), 128. doi:http://dx.doi.org/10.5964/ejop.v5i4.244

Richards, T. L., Corina, D., Serafini, S., Steury, K., Echelard, D. R., Dager, S. R., et al. (2000). Effects of a phonologically driven treatment for dyslexia on lactate levels measured by proton MR spectroscopic imaging. *AJNR.American Journal of Neuroradiology, 21*(5), 916-922.

Shaywitz, S. (2003). *Overcoming dyslexia: A new and complete science-based program for reading problems at any level.* New York, NY: Alfred A. Knoff.

Shaywitz, S. E., & Shaywitz, B. A. (2008). Paying attention to reading: The neurobiology of reading and dyslexia. *Development and Psychopathology, 20*(04), 1329-1349.

Shaywitz, S. E., & Shaywitz, B. A. (2005). Dyslexia (specific reading disability). *Biological Psychiatry, 57*(11), 1301-1309. doi:http://dx.doi.org.ezproxy.rowan.edu/10.1016/j.biopsych.2005.01.043

Smith, F., & Goodman, K. S. (2008). " On the psycholinguistic method of teaching reading" revisited. *Language Arts, 86*(1), 61-65.

Snowling, M. J. (2013). Early identification and interventions for dyslexia: A contemporary view. *Journal of Research in Special Educational Needs, 13*(1), 7-14. doi:10.1111/j.1471-3802.2012.01262.x

Stanovich, K. E. (1980). Toward an interactive-compensatory model of individual differences in the development of reading fluency. *Reading Research Quarterly, ,* 32-71.

Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, ,* 360-407.

Stanovich, K. E. (1991). Discrepancy definitions of reading disability: Has intelligence led us astray? *Reading Research Quarterly, ,* 7-29.

Stanovich, K. E., & Siegel, L. S. (1994). Phenotypic performance profile of children with reading disabilities: A regression-based test of the phonological-core variable-difference model. *Journal of Educational Psychology, 86*(1), 24.

Stanovich, K. E. (1988). Explaining the differences between the dyslexic and the garden-variety poor reader: The phonological-core variable-difference model. *Journal of Learning Disabilities, 21*(10), 590. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=fth&AN=5445997&site=ehost-live

Stanovich, K. E. (2008). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Journal of Education, 189*(1), 23-55. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=fth&AN=46795581&site=ehost-live

State of Washington, Special Education Operations, Office of Superintendent of Public Instruction. (2014). Identification of students with specific learning disabilities: State of Washington severe discrepancy table WAC 392-172A-03045-03080. Retrieved from http://www.k12.wa.us/specialed/pubdocs/sld_guide.pdf

Torgesen, J. K. (2002). The prevention of reading difficulties. *Journal of School Psychology, 40*(1), 7-26.

U. S. Census Bureau. (2014). *State & county Quickfacts: New Jersey*. Retrieved from http://quickfacts.census.gov/qfd/states/34000.html

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2014). *Children and youth with disabilities*. Retrieved from http://nces.ed.gov/programs/coe/indicator_cgg.asp

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2013). *Digest of education statistics, 2012* [Table showing children 3 to 21 years old served under IDEA by disability type: selected years 1976-77 through 2010-11]. Retrieved from http://nces.ed.gov/pubs2014/2014015.pdf

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2014). *Common core of data (CCD) public school district data for the 2011-2012, 2012-2013 school years.* Retrieved from http://nces.ed.gov/ccd/districtsearch/

Vellutino, F. R., Scanlon, D. M., & Lyon, G. R. (2000). Differentiating between difficult-to-remediate and readily remediated poor readers: More evidence against the IQ-achievement discrepancy definition of reading disability. *Journal of Learning Disabilities, 33*(3), 223-238.

Vellutino, F. R., Fletcher, J. M., Snowling, M. J., & Scanlon, D. M. (2004). Specific reading disability (dyslexia): What have we learned in the past four decades? *Journal of Child Psychology and Psychiatry, 45*(1), 2-40. doi:10.1046/j.0021-9630.2003.00305.x

Wagner, R. K., Torgesen, J. K., Rashotte, C. A., Hecht, S. A., Barker, T. A., Burgess, S. R., et al. (1997). Changing relations between phonological processing abilities and word-level reading as children develop from beginning to skilled readers: A 5-year longitudinal study. *Developmental Psychology, 33*(3), 468-479. doi:10.1037/0012-1649.33.3.468

Wolf, M., & Bowers, P. G. (1999). The double-deficit hypothesis for the developmental dyslexias. *Journal of Educational Psychology, 91*(3), 415.

Zirkel, P. A., & Thomas, L. B. (2010). State laws for RTI: An updated snapshot. *Teaching Exceptional Children, 42*(3), 56-63. Retrieved from http://search.proquest.com/docview/201143221?accountid=13605

Appendix A Online Survey Items

1. Please check your primary method for identifying students with Specific Learning Disability:
   - ☐ IQ-achievement discrepancy
   - ☐ Response to Intervention (RTI)
   - ☐ Combination of RTI and IQ-achievement discrepancy
2. What evaluation tools does your Child Study Team use to assess reading achievement?
3. What evaluation tools does your Child Study Team use to assess IQ?
4. If your district currently utilizes IQ-achievement discrepancy, how many points are required to establish a discrepancy?
5. If your district currently utilizes IQ-achievement discrepancy, does your district allow for an override decision if a discrepancy is not established, but there is other evidence of a potential learning disability?
6. If your district implements a multitiered response to intervention approach, in what year was your RTI program established?
7. If your district implements a multitiered response to intervention approach, what criteria do you use to identify an “at-risk” student in need of intervention?
8. If your district implements a multitiered response to intervention approach, is your district able to provide intervention to all students who meet the “at-risk” criteria set by your district?
9. If your district implements a multitiered response to intervention approach, do students need to participate in a set number of intervention cycles before being considered for a comprehensive special education evaluation?
   If you answered yes, please indicate how many cycles students must participate in RTI, as well as the duration of each cycle.
10. If your district implements a multitiered response to intervention approach, does failure to respond to intervention result in immediate referral to the Child Study Team?

Appendix B Washington Tables

CRITERION DISCREPANCY SCORES TABLE
AGE 6 TO 21 YEARS
(GRADES 1 AND ABOVE)

IQ	Criterion Score	IQ	Criterion Score
69	62	97	80
70	62	98	81
71	63	99	82
72	64	100	82
73	65	101	83
74	65	102	84
75	66	103	84
76	67	104	85
77	67	105	86
78	68	106	86
79	69	107	87
80	69	108	88
81	70	109	88
82	71	110	89
83	71	111	89
84	72	112	90
85	73	113	91
86	73	114	91
87	74	115	92
88	75	116	93
89	75	117	93
90	76	118	94
91	76	119	95
92	77	120	95
93	78	121	96
94	78	122	97
95	79	123	97
96	80	124	98
		125	99

Figure 10. Table to determine severe discrepancy. (State of Washington, Special Education Operations, Office of Superintendent of Public Instruction, 2014)

Appendix C SD Evaluation Tools

Table 6

Tools Used to Establish IQ

District Code	Wechsler Intelligence Scale for Children (WISC)	Wechsler Adult Intelligence Scale (WAIS)	Wechsler Preschool & Primary Scale of Intelligence (WPPSI)	Wechsler Abbreviated Scale of Intelligence (WASI)	Wechsler Nonverbal Skill of Ability (WNV)	Woodcock Johnson III (WJIII)	Stanford-Binet Intelligence Scale (SBIS)	Comprehensive Test of Nonverbal Intelligence (CTONI)	Universal Nonverbal Intelligence Test (UNIT)	Kaufman Assessment Battery for Children (KABC)	Other	Multiple Measures Used but not Specified
1	x		x									
2	x						x					
3	x										x	
4	x	x	x	x	x	x	x		x	x	x	
5	x	x										
6	x	x	x			x	x	x			x	
7	x											
8	x					x		x				
9	x						x					
10	x	x	x			x	x	x			x	
11	x	x	x			x	x	x			x	
12	x											
13	x											
14	x					x						
15	x	x	x			x	x	x			x	

Table 6 Continued

District Code	Wechsler Intelligence Scale for Children (WISC)	Wechsler Adult Intelligence Scale (WAIS)	Wechsler Preschool & Primary Scale of Intelligence (WPPSI)	Wechsler Abbreviated Scale of Intelligence (WASI)	Wechsler Nonverbal Skill of Ability (WNV)	Woodcock Johnson III (WJIII)	Stanford-Binet Intelligence Scale (SBIS)	Comprehensive Test of Nonverbal Intelligence (CTONI)	Universal Nonverbal Intelligence Test (UNIT)	Kaufman Assessment Battery for Children (KABC)	Other	Multiple Measures Used but not Specified
16	x											
17	x											
18	x	x	x			x	x	x			x	
19	x	x	x	x								
20	x					x						
21	x	x	x			x	x	x			x	
22	x										x	
23	x	x	x			x	x	x			x	
24	x											
25	x											
26	x		x		x	x	x					
27	x	x	x									
28	x	x	x			x	x	x			x	
29	x											x
30	x		x	x			x				x	

Table 6 Continued

District Code	Wechsler Intelligence Scale for Children (WISC)	Wechsler Adult Intelligence Scale (WAIS)	Wechsler Preschool & Primary Scale of Intelligence (WPPSI)	Wechsler Abbreviated Scale of Intelligence (WASI)	Wechsler Nonverbal Skill of Ability (WNV)	Woodcock Johnson III (WJIII)	Stanford-Binet Intelligence Scale (SBIS)	Comprehensive Test of Nonverbal Intelligence (CTONI)	Universal Nonverbal Intelligence Test (UNIT)	Kaufman Assessment Battery for Children (KABC)	Other	Multiple Measures Used but not Specified
31	x		x									
32	x	x	x			x	x	x			x	
33	x		x									
34	x		x				x					
35	x		x									
36	x											
37	x											
38	x					x						
39	x		x									
40	x											
41	x	x	x			x	x	x			x	

Table 7

Tools Used to Establish Reading Achievement

District Code	Wechsler Individual Achievement Test (WIAT)	Woodcock-Johnson Test of Achievement (WJ)	Test of Reading Achievement (TORC)	Gates-MacGintie Reading Tests (GMRT)	Comprehensive Test of Phonological Processing (CTOPP)	Gray Oral Reading Tests (GORT)	Young Children's Achievement Tests (YCAT)	Predictive Assessment of Reading (PAR)	Kaufman Survey of Early Academic & Language Skills (KSEALS)	Informal Reading Inventories (e.g. Jerry Johns, QRI, DRI)	Other Norm-Referenced (e.g. OWLS, CELF, Stanford)	Other Criterion-Referenced (e.g. DAR, DIBELS, F&P, DRA)
1	x	x										
2	x									x		
3		x	x							x		x
4		x								x	x	x
5		x		x						x		
6	x	x					x		x	x		
7	x	x										
8	x	x								x		x
9	x	x										
10	x	x					x		x	x		
11	x	x					x		x	x		
12	x											
13	x	x										
14	x	x										
15	x	x					x		x	x		

Table 7 Continued

District Code	Wechsler Individual Achievement Test (WIAT)	Woodcock-Johnson Test of Achievement (WJ)	Test of Reading Achievement (TORC)	Gates-MacGintie Reading Tests (GMRT)	Comprehensive Test of Phonological Processing (CTOPP)	Gray Oral Reading Tests (GORT)	Young Children's Achievement Tests (YCAT)	Predictive Assessment of Reading (PAR)	Kaufman Survey of Early Academic & Language Skills (KSEALS)	Informal Reading Inventories (e.g. Jerry Johns, QRI, DRI)	Other Norm-Referenced (e.g. OWLS, CELF, Stanford)	Other Criterion-Referenced (e.g. DAR, DIBELS, F&P, DRA)
16		x										
17	x	x										
18	x	x					x		x	x		
19	x	x										
20	x	x								x		x
21	x	x					x		x	x		
22	x	x								x		
23	x	x					x		x	x		
24	x	x										
25		x										
26	x	x										x
27	x	x			x	x				x	x	x
28	x	x					x		x	x		
29	x	x										
30	x	x					x		x	x		

Table 7 Continued

District Code	Wechsler Individual Achievement Test (WIAT)	Woodcock-Johnson Test of Achievement (WJ)	Test of Reading Achievement (TORC)	Gates-MacGintie Reading Tests (GMRT)	Comprehensive Test of Phonological Processing (CTOPP)	Gray Oral Reading Tests (GORT)	Young Children's Achievement Tests (YCAT)	Predictive Assessment of Reading (PAR)	Kaufman Survey of Early Academic & Language Skills (KSEALS)	Informal Reading Inventories (e.g. Jerry Johns, QRI, DRI)	Other Norm-Referenced (e.g. OWLS, CELF, Stanford)	Other Criterion-Referenced (e.g. DAR, DIBELS, F&P, DRA)
31	x	x				x						
32	x	x					x		x	x		
33	x	x										
34	x	x								x		x
35	x	x	x		x	x						
36	x									x		
37	x	x								x		
38		x		x				x				
39	x									x		x
40	x											
41	x	x					x		x	x		