

**Response to Intervention: The Link Between Specific Learning Disability
and Special Education Services**

by

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Response to Intervention: The Link Between Specific Learning Disability and Special Education Services

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The purpose of this quantitative study is to determine if there is a statistically significant difference in the percentage of students identified as Specific Learning Disability before and after states policy adoptions in Colorado, Connecticut, Florida, Idaho, Louisiana, Rhode Island, and West Virginia that required the use of Response to Intervention (RtI) as the sole methodology for identifying students with Specific Learning Disability. Response to Intervention assumed a dominant role in education with the passage of the No Child Left Behind Act of 2001. Identified as a method to intervene early with students who were not making adequate academic achievement, RtI found its way into special education law with the passage of the Individuals with Disabilities Education Improvement Act in 2004 hereafter referred to as IDEA 2004. Referenced only once within IDEA 2004, RtI was adopted by seven states as the sole method for identifying students with a Specific Learning Disability. Response to Intervention is multifaceted and has components in both general education and special education. A full evaluation of the entire policy of Response to Intervention as it applies to K-12 public education should be undertaken to validate its applicability and its benefit to the K-12 learning environment in conjunction with its identification of Specific Learning Disability. For this policy evaluation, RtI was evaluated from the perspective of the identification of students with SLD and claims that Response to Intervention will reduce

the number of referrals and students identified with Specific Learning Disability. A hierarchical linear modeling (HLM) study indicates a decrease in the percentage of students identified with Specific Learning Disability long before the Response to Intervention policy change and that rather than continuing to decrease, the percentages actually increase shortly after legislative requirements.

Keywords: Response to Intervention (RtI), Specific Learning Disability (SLD),
evaluation, identification

DEDICATION

To the love of my life, my husband Tom, and our three children, Emily, Daniel and Joseph, who are each a blessing in their own unique way.

Always keep your feet firmly planted on the ground but never stop reaching for the stars.

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The mind is not a vessel to be filled, but a fire to be kindled – Plutarch

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CHAPTER I

INTRODUCTION

With the reauthorization of the Individuals with Disabilities Education Act (IDEA) in 2004, the identification of a Specific Learning Disability (SLD) would forever be changed. IDEA 2004 introduced the option for states to use “a process based on the child’s response to scientific, research-based interventions” (34 CFR. § 300.307(a)(2)) as an alternative approach to identifying a Specific Learning Disability. IDEA 2004 allows states to use the discrepancy method, the Response to Intervention (RtI) model, or a combination of both. See Appendix A for a copy of the 2006 regulations on Specific Learning Disability.

Definition of a Specific Learning Disability

The addition of RtI to the SLD identification process was not coupled with a change to the definition of a learning disability. Twenty-two years after the inception of a definition of a learning disability, RtI was introduced as a new methodology for identification (Martinez & Young, 2011); however, no change was made to the definition. As it stands with IDEA 2004, a Specific Learning Disability is:

A disorder in one or more of the basic psychological process involved in understanding or in using language, spoken or written, that may manifest itself in imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculation, including conditions such as perceptual disabilities, brain injury,

minimal brain dysfunction, dyslexia, and developmental aphasia (34 CFR § 300.8 (c) (10)).

The specific academic areas covered by Specific Learning Disability under IDEA 2004 are:

- oral expression,
- listening comprehension,
- written expression,
- basic reading skill,
- reading fluency skills,
- reading comprehension,
- mathematical calculation,
- and mathematics problem solving (34 CFR § 300.309 (a) (1))

Discrepancy Model

The discrepancy model for the identification of a learning disability has been used since the inception and signing of the Education for All Handicapped Children Act (EAHCA) on November 30, 1975. For the discrepancy model, a child is administered standardized, norm-referenced assessments for both academic achievement and intelligence. Depending on the discrepancy between the two scores and the child's performance in the classroom, a child who exhibits a discrepancy between their academic achievement in the classroom and ability or intelligence level may be identified as having a learning disability. The discrepancy model continued with the reauthorization of EAHCA when its title was changed to the Individuals with Disabilities Education Act (IDEA) in 1990 (Fletcher, Coulter, Reschly, & Vaughn, 2004).

The discrepancy model is criticized as being a “wait-to-fail” model allowing children to fall to academic failure before being provided instructional support after being found eligible for special education services (Fuchs & Fuchs, 2006; Fuchs, Mock, Morgan, & Young, 2003; Hallahan, Pullen, & Ward 2013; Kavale, Kauffmann, Bachmeier, & LeFever, 2013; McKenzie, 2010; Mellard, Deshler, & Barth, 2004).

Response to Intervention Model

Response to Intervention is a systematic approach to providing every student with the instruction and time he or she needs to learn and achieve at high levels (Buffum, Mattos, & Weber, 2010). With limited SLD-identification specific research available, RtI was written into IDEA 2004 as an alternative method to the discrepancy method for identifying students with Specific Learning Disability (Ferri, 2012). Response to Intervention is typically a three-tiered process focused on closing the achievement gap of students who are performing below their peers or standard. Response to Intervention provides increasing levels of instruction determined by student need. The level and type of instruction is based upon data (Fletcher & Vaughn, 2009; Fuchs & Fuchs, 2006; Fuchs & Vaughn, 2012; Hughes & Dexter, 2011; Mastropieri & Scruggs, 2005; VanDerHeyden, Witt, & Barnett, 2005).

In theory at Tier I, all students are provided with quality, research-based instruction in the general education setting. All students are assessed through classroom summative and formative assessments. Students not making appropriate academic achievement with Tier I instruction are provided direct, explicit instruction in their academic area(s) of identified need in Tier II of Response to Intervention. This instruction may be in the areas of reading, writing, and/or math. The instruction is

different from classroom instruction in the intensity (teacher-student ratio), frequency (sessions per week), and duration (amount of time per session) of the instruction. Students' response to the instruction is monitored by their progress on obtaining proficiency in the identified low academic areas. This is done through a process called progress monitoring. For progress monitoring, probes that are short in duration, norm-referenced or curriculum-based are administered on a regular basis (e.g. weekly) to students in Tier II of RtI. A student's response is monitored and compared to a selected target response, which is determined by the norms established by peers, or the curriculum standards. A student who does not respond may participate in a different intervention, have the intensity, frequency, and/or duration changed, or is referred for a special education evaluation. Special education evaluations are typically Tier III of a three-tiered RtI system (Hughes & Dexter, 2011).

Response to Intervention is both praised and criticized for being a necessary component to the identification of Specific Learning Disability (Vaughn & Fuchs, 2006). Many learning disability researchers believe there is no operational definition or meaningful definition for SLD directly linked to Response to Intervention resulting in RtI being questionable on its ability to determine the presence of a Specific Learning Disability (Batsche, Kavale, & Kovalesski, 2006; Fuchs, Deshler, & Reschly, 2004; Kavale, 2005; Kavale, Holdnack, & Mostert, 2005; Keogh, 2005; Martinez & Young, 2011; Scull & Winkler, 2011). Mellard et al. (2004) stated that the attempt to "build a better mousetrap" (p. 231) in the identification of SLD may be in vain unless a clear, precise, operational definition is determined first. There is concern that students are not identified based on individual deficits but rather standards-based deficits (Vaughn &

Fuchs, 2006). The definition of an appropriate response or lack of response is not defined in IDEA 2004, NCLB, or research. Without a clear definition for a lack of response, it cannot be equated with below average academic functioning (Mather & Gregg, 2006).

Although not the focus of this research, it is important to clarify the primary reasons behind the change in identification methodology. There are two reasons that rise to the top of the research literature. The first is the increasing rate of learning disability identifications (Fuchs & Fuchs, 2009; Kavale et al., 2013; Townsend, 2006) and the second is the perception that the discrepancy model is a “wait-to-fail” model that prevents students from getting the academic help they need early in their academic career (Batsche et al., 2006; Fuchs & Fuchs, 2006; Fuchs et al., 2003; Kavale et al., 2005; McKenzie, 2010).

For increasing or over-identification of students, discrepancy is viewed as being unreliable and easily manipulated. As the sole criteria, this may result in variability in placements (Batsche et al., 2006). The degree of discrepancy is subjective and individually interpreted by a variety of school professionals. This may include school psychologists and special educators who may or may not have knowledge of the student’s academic performance (Kavale, 2005). This variation means a student may qualify at one school, district, or state and not another (Reynolds & Shaywitz, 2009). The inherent subjectivity may result in over-identification.

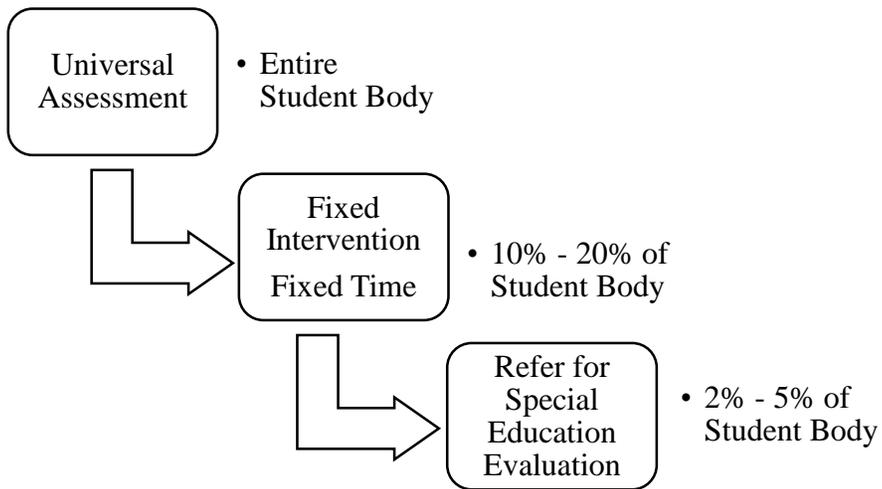
In regards to discrepancy being a “wait-to-fail” model, the perception among both proponents and opponents of Response to Intervention is that, previously, students needed to reach the point of academic failure before triggering a special education

evaluation and receive the necessary instruction required to reach academic success (Ferri, 2012; Fuchs & Fuchs, 2006; Reynolds & Shaywitz, 2009). Students perceived as being low achievers or slow learners who may actually have a true learning disability may have had to perform poorly for years before their classroom performance coupled with their IQ score were sufficiently low enough to qualify for special education instruction. A student's poor academic performance could also be a result of poor instruction (Fuchs et al., 2003).

Response to Intervention Conceptual Framework

There are two approaches to Response to Intervention—the problem-solving approach and the standard protocol approach (Büttner & Hasselhorn, 2011; Hughes & Dexter, 2011). Figure 1 depicts the two different approaches. Although the processes can be done in isolation, Response to Intervention programs can also be a combination of the two approaches.

Standard Protocol Approach



Problem Solving Approach

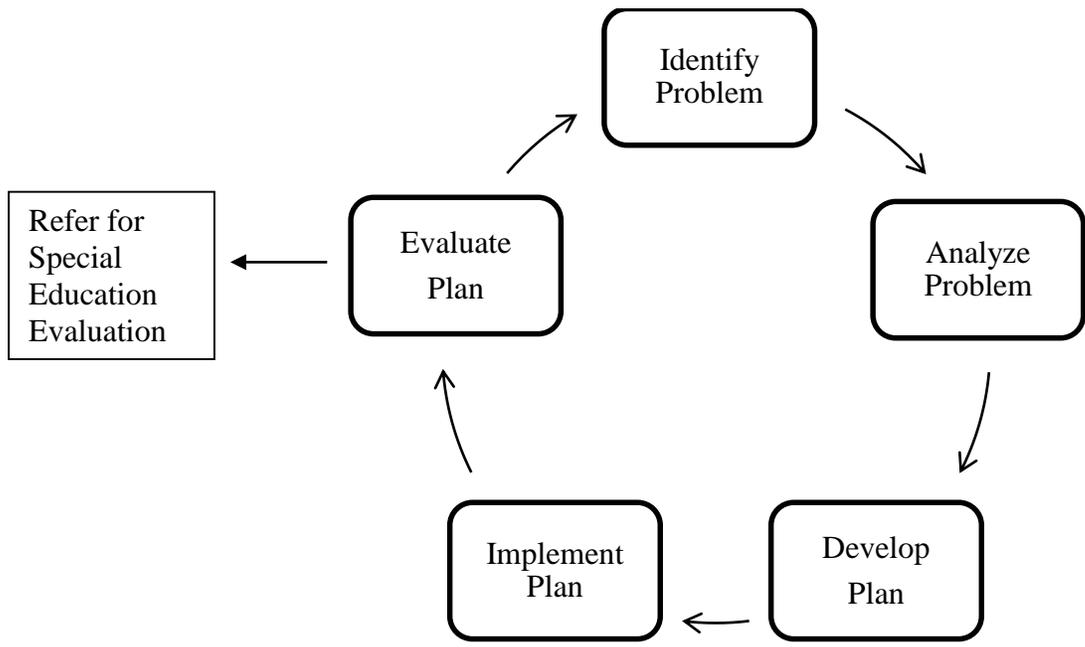


Figure 1. Conceptual Framework depiction of the Response to Intervention Standard Protocol Approach and Problem-Solving Approach

For both models, there are three options during the evaluation and reevaluation of the student's progress. The options are:

- the student closes the academic gap and, therefore, returns to the general education classroom and intervention(s) are discontinued, or
- the intervention is modified and continued, or
- the student is referred for a special education evaluation.

By intervening early and providing direct, explicit instruction in identified areas of need, students who are low-achievers or slow-learners receive the instruction they need to be successful in the classroom (Brown-Chidsey, 2007; Hale et al., 2010; Kavale, 2005; Vaughn & Fuchs, 2003). In theory, this may lead to a reduction in the number of referrals and the number of students incorrectly identified with Specific Learning Disability. As cited in Burns, Jacob, and Wagner (2008), a number of researchers, Kovalski, Tucker, and Duffy (1995), Marston, Muyskens, Lau, & Canter (2003), McNamara (1998), McNamara and Hollinger (2003), Reschly and Starkweather (1997), Sornson, Frost, and Burns (2004), and Tilly (2003) all claimed that implementing Response to Intervention led to a reduction in the number of referrals to special education and the number of students formally identified with Specific Learning Disability and placed in special education.

The standard protocol approach focuses on the entire classroom or student body by administering a universal assessment and determining student needs based upon the assessment. The focus is then narrowed to the performance of the individual student or a small group of students with similar academic deficits. To meet student need, the intervention provided is typically a fixed intervention for a fixed period of time. Reading

groups that are leveled by ability are an example of such an intervention. The standard approach protocol may be repeated two or three times a year to monitor the performance of the entire group and identify needs throughout the school year.

The problem-solving approach focuses on the individual child. This approach typically involves a problem-solving team comprised of an administrator, classroom teacher, parents, and any other professionals that may be beneficial to the success of the student. The problem-solving team works to identify one or two problems that are interfering with a student's progress in class. Once the problem is clearly identified, it is analyzed to determine the necessary intervention(s). A plan is written to document the intervention along with the specifics of the intervention (e.g., who will provide the intervention, number of times per week, progress monitoring tool) and the schedule to reevaluate the plan (Fuchs et al., 2003; Speece, Palombo, & Burho, 2013).

Summary

The path to special education services for students with learning disabilities was forever changed on December 3, 2004 when President George W. Bush signed the reauthorization of IDEA into law. States were now free to explore other identification processes for SLD identification. Although all states have the option to use Response to Intervention as the methodology for the identification of Specific Learning Disability, currently seven states have adopted RtI as the sole methodology for identifying SLD. The remaining states have adopted legislation that allows for both Response to Intervention methodology and the discrepancy model. Guidelines for the implementation of RtI vary across the nation's schools making a full and complete policy review implausible. Also, students continue to be identified with Specific Learning Disability

using both methodologies using the original definition. This study will determine if there is a statistically significant difference in the percentage of students identified as Specific Learning Disability before and after states policy adoptions in Colorado, Connecticut, Florida, Idaho, Louisiana, Rhode Island, and West Virginia required only the use of Response to Intervention (RtI) as the sole methodology for identifying students with SLD. A study of SLD identification prior to and after implementation of RtI as the sole method for identification may be beneficial to states considering the RtI-only methodology to review the current RtI-only states' percentages of students identified with Specific Learning Disability since the implementation of Response to Intervention is the impetus behind this study.

CHAPTER II

LITERATURE REVIEW

The literature review for this study encompasses factors of Specific Learning Disability and Response to Intervention. This includes (a) a historical perspective of the definition of a learning disability, (b) an exploration of the literature related to the pre-IDEA 2004 discrepancy model of SLD identification, (c) Response to Intervention, and (d) the connections between Response to Intervention and SLD identification. Prior to the passage of IDEA 2004 and the adoption of the option to use a Response to Intervention process for the identification of SLD, research that specifically validated and corroborated RtI as a methodology for SLD identification was not conducted.

History of the Definition of Learning Disability

An operational, clear definition of a learning disability is as elusive today as it was in 1965 when Kirk proposed the definition that eventually made its way into the Education for All Handicapped Children Act (Hallahan et al., 2013). Kirk's definition included the language of "discrepancy between their [individual's] estimated potential and actual level of performance" (p. 22). The definition created the idea of a discrepancy between academic achievement and aptitude that eventually led to the methodology for determining the existence or non-existence of a learning disability.

In 1968, the U.S. Office of Education published a formal definition that built upon Kirk's definition but included the specific areas of concern of "listening, thinking, talking, reading, writing, spelling, or arithmetic" (U.S. Office of Education, 1968, p.34).

This definition was embraced by a newly formed professional organization, the Division for Children with Learning Disabilities (DCLD) which was later renamed to the Division for Learning Disabilities (DLD) (Hallahan et al., 2013). As noted in Hallahan, et.al. (2013), another researcher of the same time period, Helmer Myklebust, introduced the idea of “expected potential” which is a precursor to the terminology of “unexplained underachievement” commonly used to describe a characteristic of learning disability (p. 24). The underachievement is unexplained because causality cannot be linked to other disabilities, disorders, or other factors both internal and external to the student. Examples of other disabilities, disorders or influencing factors are an intellectual disability, emotional disturbance, Attention Deficit Hyperactivity Disorder (ADHD) or environmental, cultural or economic disadvantage. Unexpected underachievement effects may be manifested in the brain’s ability to process incoming information or the person’s ability to use information for skill application of reading, writing, or math (Hale et al., 2010; Hallahan et al., 2013; Kavale et al., 2005)

In an attempt to classify and define learning disability, Fletcher, Stuebing, Morris, and Lyon (2013) explored the concept of exclusionary versus inclusionary criteria for creating a working definition. Inclusionary criteria would be those criteria or attributes that indicate the presence of a learning disability. According to the researchers, the criteria fall into categories of cognitive discrepancy, low achievement, and methods based on assessments of instructional response. All three categories should be evaluated and documented as part of a learning disability determination. According to Fletcher and his colleagues (2013), each of the above mentioned observable characteristics measures the construct of learning disability. No one category can stand alone or be done in

isolation. The definition of learning disability by Fletcher et al. (2013) has found support with other special education researchers but has not been embraced by the professional community (Fletcher, Lyon, Fuchs, & Barnes, 2007).

Along with the model of discrepancy, there is also disagreement as to which IQ test and which achievement test should be administered. “No single score perfectly captures a student’s ability in a specific domain at a single point in time” (Fletcher et al., 2007, p. 36). The application of no single score of an IQ-achievement model to determine a learning disability extends to no single assessment. Despite all of the research and progress made in the area of learning disabilities, Kirk’s 1965 definition continues to hold to this day.

Discrepancy

In 1975, Rutter and Yale’s study revealed that the presence of a discrepancy between IQ and achievement may be an indicator of a learning disability in reading. In the research of learning disabilities, reading in the primary elementary grades is typically selected as an academic area of focus because the five components of reading—phonemic awareness, phonics, fluency, vocabulary, and comprehension—are defined and tools for measurement are readily available (Fletcher et al., 2007, Spear-Swerling & Sternberg, 1996). Later studies indicated negligible to small differences between IQ and low-achievement on multiple measures of reading and phonological processing (Fletcher et al., 2013). Unexpected underachievement is not realized.

Mather and Gregg (2006) stated that “we can safely conclude from past research and practice is that neither the presence nor the absence of an ability-achievement discrepancy is a reliable or valid indicator of LD” (p.100). The discrepancy model has

not led to improved instruction or outcomes for students (Fletcher et al., 2004). Additionally, it is viewed as unreliable and easily manipulated with great variability in application and identifications (Batsche et al., 2006). Discrepancy varies nationwide on how it is computed, the size of the discrepancy, and the assessments used in the determination (Fuchs & Fuchs, 2006). There is continuing disagreement as to which IQ test and which achievement test should be administered (Fletcher et al., 2007). This has contributed to the widespread belief of the designation of a learning disability being arbitrary which is bolstered by an increase of identifications through the 1990s without a system of checks and balances (Fuchs et al., 2003). The discrepancy model has weak validity and does not produce differences among populations that represent different forms of underachievement (Fletcher et al., 2007).

Controversy surrounds the discrepancy model as it relates to low-achievers. The discrepancy model is questionable whether it can distinguish low-achievers from individuals with a learning disability (Fletcher et al., 2007; Batsche et al., 2006; Hale et al., 2010). The low-achievers subgroup does not provide exclusionary criteria towards the meaning of the key component of “unexpected underachievement” in relationship to learning disabilities (Batsche et al., 2006; Fletcher et al., 2007; Fletcher et al., 2013). The potential to include low-achievers as learning disabled may be the result of not sufficiently meeting the criteria of “unexpectedness.”

The discrepancy model of identification does not inform instruction or provide guidance on learning strategies that may benefit the learner. Concerns about the inadequacy of instruction suggests that too frequently children are “identified as having LD and placed in special education because core instruction programs are not adequate”

(Fletcher et al., 2013, p. 44). Instruction and interventions should be focused on the area of need. For example, teaching math to children whose problem is in reading would be ineffective. The discrepancy model does not provide information on the specific area of need or on required instruction to assist the student in closing the achievement gap (Fletcher et al., 2007; Hale et al., 2010; Kavale, 2005).

Some researchers support the discrepancy model for identification. A study completed by Hallahan et al. (2007) compared prevalence rates of disabilities in 18 time periods beginning in 1964 and continuing through 2002. Their research showed that the prevalence rates of high-incidence disabilities were not more varied over time than those of low-incidence disabilities. The prevalence rate for learning disabilities was the least variable. Using the state variability rates for disability prevalence, Hallahan et al. (2007) concluded that there is no justification for criticizing discrepancy for the identification of Specific Learning Disability; however the researchers did not rule out the possibility of the variability being a function of poor identification procedures. The researchers cautioned that Response to Intervention may increase identifications due to bringing RtI up to scale, the ability to use either the standard approach protocol or the problem solving protocol, and the lack of structure to the identification process that the discrepancy model provided because Response to Intervention introduces more judgment into the identification process. No clear cause of the variability in the prevalence rates was identified.

Response to Intervention

Long before Response to Intervention received a formal name, teachers were helping students struggling with academic achievement. The roots of RtI are in early

reading and behavior (Fletcher & Vaughn, 2009; Martinez & Young, 2011). Although not explicitly stated, the goal was to provide effective instruction for all students, and to do so in a calm, controlled classroom conducive to learning (Batsche et al., 2006; Kavale et al., 2013). For additional instruction, teachers met with students in small groups or one-on-one to provide focused instruction on a student's specific need.

It is important to note that Response to Intervention is a general education program both in the inception and implementation (Batsche et al., 2006; Kavale, 2005; Kavale & Spaulding, 2008). Response to Intervention is intended to benefit all students (Kavale et al., 2005). It is the appropriate first step to take for struggling students (Kavale, 2005). RtI is prevention focused and provides an equal opportunity for all students to find success in the classroom (Brown-Chidsey, 2007). "Despite an admittedly scant amount of scholarly debate or research to establish its efficacy, RtI has quickly become deeply entrenched in federal law and policy" (Ferri, 2012, p. 864).

Response to Intervention is intended to be multifaceted and address a wide-range of needs. "It may be that many children are experiencing difficulties due to lack of exposure to early fundamental literacy or mathematics skills, marginally effective general education reading curricula, or instruction that is not scientifically validated or is implemented with poor integrity" (Batsche et al., 2006, p. 267). Prior to a student being identified with Specific Learning Disability, potential causes of learning difficulties should be ruled out. Response to Intervention is a solid first step in the special education evaluation process (Batsche et al., 2006).

In 1982, Heller, Holtzman, Messick (as cited in Vaughn & Fuchs, 2003) proposed that special education classification be determined by three criteria. The first criteria

being the quality of curriculum and instruction in the general education classroom is of a level that adequate learning and achievement can be expected of all students. The second criteria was an evaluation of the special education program and services on its effectiveness to improve student learning and achievement, thereby justifying the identification of a Specific Learning Disability. The final criteria was for the special education process used for identification to be both accurate and meaningful.

The three tiers of Response to Intervention have a foundation in Heller, Holtzman, and Messick's three classification criteria (as cited in Vaughn & Fuchs, 2003). The first criteria of quality curriculum and instruction for all students is the first tier of a three-tier RtI process. The second criteria of determining if special education services were the appropriate and necessary level of intervention was dropped from the final framework due to controversy but the general theory of it is present in the second tier (Vaughn & Fuchs, 2003). Students who do not respond to the general education curriculum and instruction are provided scientific, research-based intervention and their progress is monitored. A student's positive response yields the determination of special education services not being warranted as the student's educational needs can be met by general education. The final criteria is met through the data collected through universal assessments and progress monitoring. Both provide data that develops an accurate and meaningful picture of the student's academic performance.

The Response to Intervention process incorporates some critical definitions found in the No Child Left Behind (NCLB) Act of 2001 as it relates to scientific, research based interventions. The NCLB Act (2001) defines scientific, research-based interventions that:

- (i) employs systematic, empirical methods that draw on observation or experiment;
- (ii) involves rigorous data analyses that are adequate to test the stated hypotheses and justify the general conclusions drawn;
- (iii) relies on measurements or observational methods that provide valid data across evaluators and observers and across multiple measurements and observations; and
- (iv) has been accepted by a peer-reviewed journal or approved by a panel of independent experts through a comparably rigorous, objective, and scientific review. (NCLB, 20 USC 6368).

Adequate Yearly Progress (AYP), also found in NCLB, is tied to general education curriculum and instruction and based upon standardized assessments (Johnston, 2011; Townsend, 2006; Wright, Wright, & Heath, 2009). For NCLB, all students, including students with disabilities, are expected to make AYP when provided quality, research-based instruction. RtI is a tiered system of instruction and intervention to help students not only make AYP to meet state and federal requirements of NCLB but also to display continuous academic achievement and progress within the classroom environment. At its most basic level, it is targeted instruction coupled with time to achieve learning.

Literacy is commonly referred to as the gateway to education so the focus on reading instruction at the primary elementary level is an expected area of significant research (Birsh, 2005; Paris & Jacobs, 1984; Paris, Wixson, & Palinesar, 1986). Research on interventions for math and writing are limited but promising (Fletcher &

Vaughn, 2009). The focus of RtI is early intervention. The literature is replete with articles focusing on reading instruction at the primary level, specifically for K-2 (Batsche et al., 2006; Burns et al., 2008; Cortiella, 2010; Fletcher et al., 2004; Fuchs & Fuchs, 2006; Kavale et al., 2005; Kavale et al., 2013; VanDerHeyden, Witt, & Gilbertson, 2007). Research beyond reading through the second grade level is minimal (Al Otaiba, Wagner, & Miller, 2014).

The success stories with reading interventions are abundant for primary grades (Batsche et al., 2006; Burns et al., 2008; Büttner & Hasselhorn, 2011; Cortiella, 2010; Fletcher et al., 2004; Fuchs & Fuchs, 2006; VanDerHeyden et al., 2007); but more limited for reading at the secondary level (Fisher & Frey, 2011; Fletcher et al., 2004; Fletcher & Vaughn, 2009). Fisher and Frey's (2011) research on a successful implementation of RtI at the secondary level required whole-school collaboration and implementation. Their research conducted within a secondary setting reinforced the applicability of RtI for K-12 and the benefit of quality K-12 instruction for all students. Research that supports Response to Intervention is centered on small scale studies and done in a controlled environment from teacher training to maintaining extreme fidelity of interventions and followed-up with consistent and thorough professional development of RtI (Reynolds & Shatwitz, 2009).

The concerns surrounding Response to Intervention are as numerous as the benefits of RtI. Research on RtI is relatively new (Burns & Senesac, 2005; Fuchs et al., 2003) and has increased since the passage of IDEA 2004. There are concerns about the cost of implementation, the complicated process of Response to Intervention, the non-standardization of Response to Intervention practices across states, districts, and schools,

and the lack of information surrounding the long-term success of students who received RtI interventions, reached an expected level of performance, and then had RtI interventions removed (Kavale et al., 2013; VanDerHeyden et al., 2007; Zirkel & Krohn, 2008).

Implementation

The education environment varies from school to school and classroom to classroom. The implementation of Response to Intervention is just as varied and is fraught with quirks, inconsistencies, and non-evidence based practices (Reynolds & Shaywitz, 2009). Questions have risen surrounding the instruction provided to teachers on the delivery of research-based interventions and the fidelity of the teachers' instruction. The cost to initially train teachers and continue the training through on-going professional development can significantly affect a district or school's operating budget and effective implementation of Response to Intervention (Kavale et al., 2013; VanDerHeyden et al., 2007). Vaughn and Fuchs (2003) specifically stated that "when well implemented, a response-to-instruction model could also serve to better integrate services between general and special education" (p. 140); however, no research-based specifics of a well implemented process were provided.

As stated earlier, Response to Intervention is a prevention model focused on improving instruction for all students. When it is framed as a strategy to identify students with Specific Learning Disability, it becomes mired in measurements, fidelity and validity of interventions, and standardization. The focus on quality instruction, individualization, and improving both students and teachers alike is lost (Buffum et al., 2010; Wixson, 2011).

Both districts and schools have found themselves “creating unnecessarily complicated, laborious documentation processes for every level of student intervention” (Buffum et al., 2010, p. 2). The focus has moved from individual student success to small-group intervention time. (Kavale & Spaulding, 2008). Response to Intervention can become both cumbersome and stringent in order to meet federal and state legal requirements and guidelines (Buffum et al., 2010; Fletcher et al., 2004).

Response to Intervention Process

The initial framework for Response to Intervention was built around screening K-3 students for academic and behavior concerns (Vaughn & Fuchs, 2003). No discussion was provided in the initial framework regarding the identification of learning disabilities in older students. As the gateway to education, strong literacy skills are viewed as critical to ensure students’ academic success. In the absence of strong literacy skills, students may be perceived as learning disabled when they are actually deprived of quality literacy instruction (Vaughn & Fuchs, 2003).

Kindergarten through third grade students identified as performing below norms, benchmarks or standards are provided effective, well-implemented instruction that is well-documented which indicates either growth or closure of the achievement gap, or continued struggles with academic achievement (Berkeley, Bender, Gregg Peaster, & Saunders 2009; Vaughn & Fuchs, 2003). To support the RtI process, teachers received training on research-based interventions for reading, writing, and math. (Vaughn & Fuchs, 2003).

As noted in the introduction, two types of approaches are utilized for the Response to Intervention process—standard protocol approach and problem solving

approach. The two can also be used in a combined model. Specific details on the implementation of either model, either separately or in conjunction with one another, are not clearly defined. Suggestions for their implementation are provided by researchers such as Berkeley et al. (2009) and Fuchs et al. (2003). Neither team of researchers provided evidence-based research on either RtI approach.

Non-standardization of Response to Intervention

Zirkel and Thomas (2010a & 2010b) provided both preliminary and follow-up research on individual state requirements and guidelines for the implementation of Response to Intervention. The researchers noted that IDEA 2004 regulations went into effect in October 2006 but with limited specific details on implementation for SLD identification. With Zirkel and Thomas' inquiry of the Office of Special Education Programs (OSEP) in 2007, words such as "may" and "should" were scattered in the responses to the researchers' specific questions on the standardization of RtI. Without standardization, Response to Intervention cannot be generalized across states and the nation (Reynolds & Shaywitz, 2009).

Long-term Success

Although RtI addresses a student's initially identified needs, it lacks cognitive diagnostic data for instruction when a child fails to respond. Knowledge of the student's cognitive and physiological strengths and weaknesses are also not revealed through the Response to Intervention process (Reynolds & Shaywitz, 2009). Even the question of who should determine a student's response or lack of response is unclear (Gessler-Werts, Lambert, & Carpenter, 2009).

In a poll of North Carolina state special education directors, there is not consensus

within the state on the long-term success of Response to Intervention noting that RtI “may undergo iterations as it evolves, and local implementation will determine the effectiveness for individual students” (Gessler-Werts et al., 2009, p.252). The directors responded with the need to adequately and continually train professionals who are interpreting scores and making educational decisions based upon a collection of data along with general education teachers who are delivering the interventions. Concerns are expressed over providing timely and adequate training for all professionals which has the potential to affect Response to Intervention’s long-term success (Gessler-Werts et al., 2009).

Concerns continue to pervade research questioning if Response to Intervention has identified the right children or too few children by questioning how poor or low a response must be before a child is referred for a special education evaluation and receives required special education services (Ysseldyke, 2005). Reynolds and Shaywitz (2009) question if RtI is “another form of discrepancy analysis” (p. 134). Others have questioned if RtI is a longer wait-to-fail model if responsiveness is not clearly defined and interventions continue without being altered to address the unresponsiveness (Ferri, 2012; Fuchs et al., 2004).

These apprehensions parallel the concern of a lack of teacher expertise in the delivery of research-based interventions (Burns, 2007; Fletcher et al., 2004; Fuchs & Vaughn, 2012; Johnston, 2011; VanDerHeyden et al., 2005). The direct explicit instruction associated with RtI interventions is a concern as it pertains to a teacher’s knowledge to provide the intervention with fidelity (Fuchs & Fuchs, 2006; Fuchs & Vaughn, 2012). Students may be experiencing educational difficulties because of a “lack

of exposure to early fundamental literacy or mathematics skill, marginally effective general education reading curricula or instruction that is not scientifically validated or implemented with poor integrity” (Burns et al., 2008, p. 267). Fletcher et al. (2004) echoed the same sentiment as they questioned whether general education and special education teachers were fully prepared to provide research-based instruction. As students move through the education system, the consistency of instruction is a concern especially if a student who has not previously struggled academically begins to lose achievement gains when placed with a less effective teacher (VanDerHeyden et al., 2005). According to Johnston (2011), teacher expertise is the most important factor in improving learning for all students.

There is also the concern of Response to Intervention being a general education initiative that has migrated into the domain of special education due to its newfound role in the identification of Specific Learning Disability, which included a change of focus for RtI (Kavale & Spaulding, 2008). The RtI process is specifically for prevention, not for identification (Batsche et al., 2006). First and foremost, all students are and should be considered general education students. Teachers should embrace a model of prevention versus failure with a request for a special education evaluation (Wixson, 2011). With Response to Intervention, Specific Learning Disability identification becomes an outcomes-based model versus an identification model (Kavale, 2005). This outcomes-based model forces the question of the definition of a successful response as it pertains to SLD identification, which carries over into the determination that a lack of response or lack of an appropriate response as the precursor to Specific Learning Disability (Fisher & Frey, 2011; Kavale, 2005; Kavale & Spaulding, 2008).

The anticipated benefits of Response to Intervention are varied and numerous (Fuchs & Fuchs, 2009; Fuchs & Vaughn, 2012; Scull & Winkler, 2011). One benefit, a decrease in the number of students identified with Specific Learning Disability, has been prevalent in the literature (Al Otaiba et al., 2014; Fuchs & Fuchs, 2006; Fuchs & Fuchs, 2009; Fuchs & Vaughn, 2012; Kavale, 2005; Scull & Winkler, 2011; Townsend, 2006,). The reduction in the number of identifications is partnered with a reduction in initial referrals for a special education evaluation. Although a decrease is possible, some researchers question if there is adequate long-term and lasting results from RtI interventions to maintain or sustain a long-term decrease (Fletcher & Vaughn, 2009; Kavale & Spaulding, 2008).

Data on Response to Intervention plans, interventions provided, amount of time a student receives Tier II interventions, and follow-up after the student is exited from an RtI program are not available, as this information is not mandated under federal reporting requirements. Although some researchers caution that the value of Response to Intervention should not be determined by the percentage of students referred to special education or identified with Specific Learning Disability, it is one claim made by proponents of RtI for Specific Learning Disability evaluation (Al Otaiba et al., 2014; Fisher & Frey, 2011; Fletcher & Vaughn, 2009; Vaughn & Fuchs, 2006). Response to Intervention will reduce the number of “educational casualties” who have not been provided adequate instruction (Ferri, 2012, p. 872). Wanzek and Vaughn’s (2011) study showed no significant reduction in the number of students referred for special education evaluations as a result of the implementation of RtI. With very little student-level data available on states’ Response to Intervention programs and processes, researching the

number of Specific Learning Disability identifications is but one measure of the success of the methodology of Response to Intervention for Specific Learning Disability evaluations and identifications.

Response to Intervention for Specific Learning Disability Identification

When addressing the IDEA 2004 definition of Specific Learning Disability, many researchers have focused on the opening words, “a disorder in one or more of the basic psychological process” with a particular interest in “psychological process” as a key area of concern (Burns et al., 2008; Fletcher et al., 2004; Fuchs & Vaughn, 2012; Keogh, 2005; Reynolds & Shaywitz, 2009; Townsend, 2006; Vaughn & Fuchs, 2006). Concerns surrounding the lack of a cognitive component in the identification of Specific Learning Disability has been voiced by researchers and practitioners alike (Mather & Gregg, 2006). A student’s academic limitation should be documented using multiple sources of quantitative and qualitative data of which one should be cognitive (Hale et al., 2010; Kavale, 2005; Keogh, 2005; Mather & Gregg, 2006).

The question of response and non-responsiveness permeate the literature (Al Otaiba et al., 2014; Cortiella, 2010; Fuchs et al., 2003). For Ferri (2012), the question of the deficit being solely a construct of the student and not the larger educational context was questioned. This could be addressed through a thorough cognitive assessment. Schools viewing Response to Intervention as a method for identifying students with Specific Learning Disability maintain the same deficit-based assumption about students’ academic performance and achievement that was prevalent with the discrepancy model (Fletcher et al., 2007; Vaughn & Fuchs, 2003).

Response to Intervention Requirements by State

Zirkel and Thomas (2010a, 2010b) provided detailed information on the legal requirements of RtI per state. Details on state requirements or guidelines were broken into the RtI characteristics of high quality, research-based instruction, universal screening, progress monitoring, and interventions. The information is summarized for Colorado, Connecticut, Florida, Idaho, Louisiana, Rhode Island, and West Virginia. Table 1 provides a summary of the states' recommended guidelines and legal requirements. Florida and Idaho's requirement of RtI exclusively is relatively newer with implementation required in 2010 (Zirkel & Thomas, 2010a).

Colorado, Connecticut, Florida, Idaho, Louisiana, Rhode Island, and West Virginia implicitly prohibit the use of the severe discrepancy model either through laws or guidelines allowing only RtI as the methodology for the identification of Specific Learning Disability. All of the states that require the sole use of RtI for the identification of a Specific Learning Disability are all local control states. From The Glossary of Education Reform (Great Schools Partnership, 2014) website, "In education, local control refers to (1) the governing and management of public schools by elected or appointed representatives serving on governing bodies, such as school boards or school committees, that are located in the communities served by the schools, and (2) the degree to which local leaders, institutions, and governing bodies can make independent or autonomous decisions about the governance and operation of public schools" (p. 5) For Response to Intervention, each district within the state determines the look and feel of its RtI program.

Table 1

Response to Intervention Requirements and Recommendations by State

	Implementation Year	Universal Screening	Duration of Intervention	Intensity and Frequency of Interventions	Progress Monitoring
Colorado	2009	≥ 3 times per year (recommendation)	No Provision	No Provision	1 time every 2-3 weeks (recommendation)
Connecticut	2009	≥ 3 times per year (recommendation)	8-20 weeks (recommendation)	2-4 sessions per week 30-45 minutes per session (recommendation)	weekly or biweekly (recommendation)
Florida	2010	≥ 3 times per year (recommendation)	15-30 weeks (recommendation)	≥ 90 min per day elementary reading (required)	weekly, biweekly, monthly (recommendation)
Idaho	2010	≥ 3 times per year (recommendation)	8-12 weeks (requirement)	No Provision	weekly, biweekly, monthly (recommendation)
Louisiana	2009	2-3 times per year (recommendation)	No Provision	4-5 sessions per week 20-40 minutes per session (recommendation)	No Provision
Rhode Island	2009	≥ 3 times per year (recommendation)	No Provision	4-5 session per week (recommendation)	≥ 2 times per month (recommendation)

West Virginia	2008	≥ 3 times per year (required)	8-12 weeks followed by an additional 8-12 weeks (required)	30 minutes per day *reading only (recommendation)	every 2-3 weeks ≥ 6 data points (required)
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Note: Tier II and/or Tier III only except for universal screening

Colorado began requiring the exclusive use of RtI beginning with the 2009-2010 school year. Requirements for Response to Intervention are provided in the form of guidelines. Colorado does not have provisions in law or in their guidelines for the total number of weeks for an intervention including the intensity or frequency of the interventions. Colorado's guidelines recommend universal screening at least three times a year which is a feature of the standard protocol approach. Progress monitoring one time every one to two weeks is recommended.

Connecticut also discontinued their use of the discrepancy model in 2009-2010, requiring only RtI to be used for SLD identification. Guidelines are provided for universal screening to be completed three times a year following a standard protocol approach. An intervention length of 8 to 24 weeks is recommended per state guidelines. An intensity and frequency of 2-4 sessions per week for 30-45 minutes per session for Tier II are recommended with an increase to 4-5 sessions per week for 70 minutes per session for Tier III. Progress monitoring of weekly or biweekly is recommended.

Florida, the second relative newcomer to requiring RtI for identification of Specific Learning Disability, also began in 2010. Universal screenings are recommended for at least three times per year. Intervention for reading at the elementary level is required for at least 90 minutes a day. Guidelines are for interventions to last between 15-30 weeks with progress monitoring completed weekly, biweekly, or monthly.

Idaho's legislation required RtI for SLD identification following a transitional period that ended July 1, 2010. Guidelines recommend universal screening at least three times per year with progress monitoring recommendations for weekly, biweekly, or

monthly depending on the risk. Interventions are required to last for 8-12 weeks but there are no requirements or guidelines for the intensity or frequency of the interventions.

Louisiana, similar to Colorado, provides state guidelines for RtI. In 2009, Louisiana switched to RtI as the sole methodology for the identification of SLD. Screening is recommended for 2-3 times per year which is a slight variation on the standard approach protocol of Response to Intervention. No specific guidelines are provided for the duration of interventions. Louisiana recommends 4-5 sessions per week for 20-40 minutes per session increasing to an amount of time greater than 50 minutes per week for Tier III. No information is provided on progress monitoring requirements or guidelines.

Rhode Island implicitly requires universal screening by law for both academics and behavior. Rhode Island required RtI for SLD identification beginning in 2009. Universal screening is required three times per year. No specific set amount of time is required for interventions with 4-5 sessions per week recommended in the state's guidelines. Progress monitoring is recommended for at least twice a month.

West Virginia has a state requirement of universal screening three times per year. West Virginia required RtI for SLD identification beginning in 2008. For reading only, West Virginia requires 30 minutes per day in Tier II which increases to two sessions per day for 30 minutes per day for Tier III. No information is provided on progress monitoring requirements or guidelines.

Through a summarization of the RtI programs for the seven states of interest and also contained within Zirkel and Thomas' (2010a, 2010b) research articles, the requirements and guidelines for RtI implementation are as varied as the states. No two

states appear to have multiple commonalities and many states do not provide guidance or recommendations for the recognized major components of Response to Intervention.

Response to Intervention is not standardized across the 50 states.

Summary

Evidence-based research on the application of Response to Intervention specifically for the determination of Specific Learning Disability is not available. Professional opinions and judgements based upon experience, direct, and indirect knowledge comprise the majority of peer-reviewed literature surrounding Specific Learning Disability and Response to Intervention. There is clear evidence that supports direct explicit instruction for reading deficits in the primary grades as one aspect of Response to Intervention. The initial focus of RtI was a method to improve education for all and teach low performing and slow achievers. To date, no research exists to judge the effectiveness of Response to Intervention to decrease the number of special education referrals and ultimately, the number of SLD identifications.

CHAPTER III

METHODS

Introduction

Response to Intervention is a complex policy affecting both general education and special education. The constructs that define a Response to Intervention program are determined by each state and potentially each school district. Local control of RtI means that its structure and implementation vary from district to district and possibly from school to school. A full and complete policy analysis of Response to Intervention is beyond the scope of this study. The single construct of interest for this study is the identification of a Specific Learning Disability, which is the highest incidence disability category according to the National Center for Education Statistics (2015). A single research question guides this study:

1. Is there a statistically significant difference in the percentage of students identified as Specific Learning Disability before and after state policy adoption in the states that only allow Response to Intervention as the process for identifying Specific Learning Disability?

Policy Analysis

The program theory of RtI for identifying SLD is to intervene early with low-achievers and slow-learners to prevent these specific subgroups of students from becoming learning disabled as a result of poor instruction and curriculum (Brown-

Chidsey, 2007; Mellard et al., 2004; VanDerHeyden et al., 2005) or lack of direct explicit instruction (Burns et al., 2008; Fletcher et al., 2004). The inputs into the RtI program are the time to implement the interventions and progress monitor the students' responses, the finances to purchase the curriculum used for interventions, and the compensation for the teachers who provide the interventions. The students receiving the interventions are the greatest input (Bamberger, Rugh, & Mabry, 2013).

From the Response to Intervention program, there should be improved instruction for all students (Kavale et al., 2005). Low-performing students who are achieving adequate academic progress will not be referred for a special education evaluation therefore resulting in fewer special education referrals and fewer SLD identifications. There was no trial run of the application of RtI for Specific Learning Disability identification prior to the authorization of IDEA 2004. This evaluation of the effectiveness of RtI in reducing the number of students identified as SLD is conducted post-implementation of the policy using historical data.

The cost to analyze the single construct of the policy is limited to the researcher's time; however, there are costs associated with the implementation of RtI. Should RtI reduce the number of students identified with SLD, the financial responsibility of the state and federal governments would also decrease. This may result in increased funding for higher-needs disabilities (e.g. intellectual disabilities) or specialized-needs disabilities (e.g. autism). Analysis of longitudinal data to evaluate the impact of a policy change is utilized in evaluating scientific questions and lends itself to evaluating education policy changes (French & Heagerty, 2008).

Data

Data for total school enrollment, enrollment by gender, and enrollment for the seven federal ethnicities were obtained from the National Center for Educational Statistics Elementary/Secondary Information System (ELSi) for 2000-2013. The seven federal ethnicities are (a) American Indian/Alaska Native, (b) Asian, (c) Hispanic, (d), Black, (e) White, (f) Hawaiian/Pacific Islander, and (g) Two or More. The data collected were noted as being state level data for public school enrollment. Data for 2014 were obtained from individual state's K-12 public education websites. Data for the number of identifications of Specific Learning Disability were obtained from the IDEA Data Center (IDC, 2014), which was accessed through their website (<https://ideadata.org>). The data were the state level IDEA Section 618 Part B Child Count reporting data required by federal mandates. The data files for the IDEA Section 618 Part B Child Count for 2000-2004 were obtained through a Freedom of Information Act (FOIA) request to IDC.

Research Design

Hierarchical linear modeling (HLM) was used to analyze the data utilizing the interrupted time series model. HLM was selected based upon the research being a longitudinal study of the percentage of students identified with Specific Learning Disability. The data are time nested within state. The data were stacked in a state-period dataset in which each state has multiple records and where each record represents the observations for the given year.

Interrupted time series is a series of observations on the same dependent variable over time. A treatment or intervention occurs at a specific point in time, and the series is broken but observations continue. If the treatment or intervention has a causal effect, the

post-treatment series will initiate at a different level or have a different slope. In education, the instantaneous effects are rare and effect sizes are usually small. Although longitudinal data of 100 observations or greater is desired, interrupted time series can be done with five to 50 data points (Singer & Willett, 2003). Pre-treatment observations were important for establishing pre-treatment slope (Biglan, Ary & Wagenaar, 2000; Velicer & Fava, 2003; Wong, Cook & Steiner, 2009). Dee and Jacob (2011) utilized interrupted time series approach to analyze No Child Left Behind (NCLB) on student achievement based upon National Assessment of Educational Progress (NAEP) results.

Description of Variables

The outcome or dependent variable is the percentage of students for each year identified with Specific Learning Disability. The dependent variable is collected yearly with the December 1 count for IDEA Part B funding. All 13 disability categories, which includes Specific Learning Disability numbers, are collected from each U.S. state, American Samoa, Bureau of Indian Affairs, District of Columbia, Guam, Northern Marianas, Puerto Rico, and the Virgin Islands. All data except those for the 50 U.S. states was removed from the dataset to best match the enrollment data obtained from NCES.

The covariates are gender and the seven federal ethnicities. Both were selected based upon prior research related to over-identification or misidentification of white males for special education services (Albrecht, Skiba, Losen, Chung, & Middelberg, 2012; Coutinho & Oswald, 2005; Daniels, Hey, Leonard, & Smith, 1999; Morgan et al., 2015; Skiba et al., 2008). A review of the literature on gender and ethnicity research in special education reveals concerns surrounding both the overrepresentation and the

underrepresentation of both gender and race in the identification of disabilities.

Descriptive statistical information for all covariates are provided in Table 2. They are provided in percentages by school year.

For the HLM analysis, five time-varying variables were entered at level one. The first is Year, coded “0” to “14” for 2000 through 2014. The second time-varying variable is the slope variable ($YEAR^2$). The slope variable was coded as the square of each year beginning with “0” and continuing through “14” for all 50 states. The third covariate is Response to Intervention (RtI), which is the policy change or treatment. For the 43 states that do not require RtI for SLD identification, the coding of “0” was applied for the 15 years of data. For the seven states requiring RtI for Specific Learning Disability identification—Colorado, Connecticut, Florida, Idaho, Louisiana, Rhode Island, and West Virginia—coding was “1” for all years.

Two interaction variables were created. The first interaction variable is RtI multiplied by the year ($RtI*YEAR$) which accounts for linear trend between the seven RtI states and the 43 non-RtI states. The second interaction variable is RtI multiplied by the slope variable ($RtI*YEAR^2$) which accounts for the non-linear trend between the two groups.

Two additional time-varying variables of gender and ethnicity were used. They are Percent Male and Percent Minority. The latter was created by aggregating the six ethnicities of Percent American Indian/Alaska Native, Percent Asian, Percent Hispanic, Percent Black, Percent Hawaiian/Pacific Islander, and Percent Two or More. These are percentages of each variable based upon the total enrollment for the given year.

Table 2

Descriptive Information in Percentages by School Year

K-12 Characteristics	N	Minimum	Maximum	Mean	SD
2000-2001					
Male	45	50.91	51.93	51.45	0.22
Female	45	47.67	48.93	48.49	0.23
American Indian/Alaska Native	49	0.10	25.00	2.45	4.79
Asian	49	0.53	72.35	4.01	10.18
Hispanic	49	0.37	50.17	9.55	11.57
Black	49	0.57	51.09	14.11	13.51
White	48	20.40	96.64	69.83	17.78
Hawaiian/Pacific Islander	0				
Two or More	0				
SLD	50	3.26	9.97	6.09	1.30
2001-2002					
Male	47	51.01	52.03	51.48	0.23
Female	48	0.28	48.99	47.48	6.96
American Indian/Alaska Native	49	0.10	25.46	2.50	4.89
Asian	49	0.55	72.29	4.12	10.17
Hispanic	49	0.41	51.01	10.08	11.85
Black	49	0.63	51.01	14.17	13.46
White	49	20.32	96.37	69.08	17.85
Hawaiian/Pacific Islander	0				
Two or More	0				
SLD	50	3.17	9.88	6.05	1.25
2002-2003					
Male	47	50.61	51.97	51.46	0.27
Female	47	47.62	48.98	48.45	0.23
American Indian/Alaska Native	49	0.10	25.86	2.55	4.97
Asian	49	0.57	72.17	4.18	10.16
Hispanic	49	0.46	51.66	10.54	12.08
Black	49	0.68	50.87	14.24	13.42
White	49	20.39	96.08	68.36	17.92
Hawaiian/Pacific Islander	0				
Two or More	0				
SLD	50	3.00	9.71	5.98	1.24

2003-2004

Male	47	50.46	52.01	51.41	0.32
Female	47	47.43	49.01	48.39	0.32
American Indian/Alaska Native	49	0.12	26.04	2.59	5.04
Asian	49	0.60	72.42	4.26	10.19
Hispanic	49	0.55	52.45	11.04	12.31
Black	49	0.73	50.72	14.28	13.40
White	49	20.19	95.80	67.60	17.97
Hawaiian/Pacific Islander	0				
Two or More	0				
SLD	50	2.84	9.04	5.88	1.20
2004-2005					
Male	48	49.61	52.03	51.31	0.47
Female	48	46.93	49.02	48.35	0.40
American Indian/Alaska Native	48	0.11	26.31	2.61	5.14
Asian	48	0.61	72.49	4.29	10.29
Hispanic	48	0.62	53.33	11.11	12.30
Black	48	0.81	50.75	14.37	13.46
White	48	20.07	95.48	67.28	18.10
Hawaiian/Pacific Islander	0				
Two or More	0				
SLD	50	2.64	8.53	5.76	1.19
2005-2006					
Male	50	49.89	51.88	51.30	0.46
Female	50	46.98	49.04	48.33	0.42
American Indian/Alaska Native	50	0.12	26.56	2.56	5.07
Asian	50	0.64	72.74	4.39	10.13
Hispanic	50	0.73	54.03	11.86	12.65
Black	50	0.90	51.16	14.50	13.10
White	50	19.83	95.11	66.33	18.00
Hawaiian/Pacific Islander	0				
Two or More	0				
SLD	47	2.39	8.36	5.67	1.26
2006-2007					
Male	50	49.38	51.87	51.08	0.68
Female	50	46.83	49.06	48.19	0.55
American Indian/Alaska Native	50	0.11	26.63	2.57	5.10
Asian	50	0.65	72.96	4.48	10.15
Hispanic	50	0.84	54.63	12.36	12.88
Black	50	0.97	50.78	14.41	12.96

White	50	19.56	94.55	65.45	18.08
Hawaiian/Pacific Islander	0				
Two or More	0				
SLD	47	2.23	7.89	5.45	1.22
2007-2008					
Male	50	48.67	51.94	51.00	0.80
Female	50	45.42	49.06	48.13	0.72
American Indian/Alaska Native	50	0.11	23.85	2.51	4.85
Asian	50	0.72	72.99	4.60	10.16
Hispanic	50	0.89	55.63	12.89	13.12
Black	50	0.96	50.60	14.40	12.90
White	50	19.43	94.07	64.72	18.11
Hawaiian/Pacific Islander	0				
Two or More	0				
SLD	49	2.06	7.89	5.23	1.21
2008-2009					
Male	50	31.67	52.14	50.65	2.88
Female	50	30.44	50.05	47.88	2.61
American Indian/Alaska Native	50	0.12	23.15	2.53	4.85
Asian	50	0.56	72.94	4.65	10.13
Hispanic	50	0.94	56.11	13.16	13.10
Black	50	1.03	46.09	14.06	12.06
White	50	19.46	93.76	63.79	18.63
Hawaiian/Pacific Islander	6	0.0034	1.81	0.47	0.69
Two or More	6	0.0000	6.98	2.36	2.57
SLD	49	2.03	7.80	5.03	1.21
2009-2010					
Male	50	45.95	52.06	51.02	1.02
Female	50	43.18	48.99	48.14	0.96
American Indian/Alaska Native	50	0.11	22.95	2.47	4.78
Asian	50	0.71	72.74	4.71	10.10
Hispanic	50	1.04	59.91	13.71	13.45
Black	50	1.14	50.08	14.32	12.83
White	50	19.73	93.46	63.31	18.07
Hawaiian/Pacific Islander	14	0.0088	2.02	0.28	0.53
Two or More	14	0.4301	6.20	1.96	1.66
SLD	50	2.05	7.64	4.95	1.13
2010-2011					
Male	50	51.04	52.08	51.43	0.21
Female	50	47.92	48.94	48.54	0.20

American Indian/Alaska Native	50	0.12	23.04	2.36	4.62
Asian	50	0.71	35.15	3.76	5.08
Hispanic	50	0.10	59.42	14.51	13.72
Black	50	0.97	49.85	13.75	12.52
White	50	14.46	92.63	62.23	18.42
Hawaiian/Pacific Islander	50	0.00	34.49	0.93	4.86
Two or More	50	0.32	8.38	2.41	1.63
SLD	50	2.08	7.62	4.83	1.10
2011-2012					
Male	50	51.03	54.40	51.49	0.47
Female	50	47.89	52.11	48.61	0.54
American Indian/Alaska Native	50	0.12	23.44	2.33	4.61
Asian	50	0.71	34.22	3.82	4.96
Hispanic	50	1.19	59.50	15.10	13.74
Black	50	1.01	52.85	13.69	12.57
White	50	14.27	92.36	61.60	18.35
Hawaiian/Pacific Islander	50	0.04	33.91	0.93	4.78
Two or More	50	0.66	8.23	2.64	1.67
SLD	50	2.05	7.53	4.70	1.10
2012-2013					
Male	50	51.02	52.12	51.42	0.20
Female	50	47.88	48.98	48.56	0.19
American Indian/Alaska Native	50	0.12	23.51	2.27	4.54
Asian	50	0.70	33.02	3.85	4.81
Hispanic	50	1.28	59.97	15.59	13.80
Black	50	0.98	49.49	13.52	12.27
White	50	13.91	92.04	60.90	18.39
Hawaiian/Pacific Islander	50	0.03	32.81	0.92	4.62
Two or More	50	0.89	9.32	2.92	1.75
SLD	50	2.07	7.23	4.64	1.08
2013-2014					
Male	50	51.09	52.15	51.42	0.20
Female	50	47.85	48.91	48.56	0.20
American Indian/Alaska Native	50	0.12	23.91	2.25	4.54
Asian	50	0.69	31.99	3.88	4.69
Hispanic	50	1.38	60.73	16.10	13.90
Black	50	0.94	49.32	13.48	12.21
White	50	13.63	91.46	60.17	18.37
Hawaiian/Pacific Islander	50	0.00	31.98	0.91	4.50

Two or More	50	1.14	9.95	3.19	1.81
SLD	50	2.14	7.11	4.59	1.06
2014-2015					
Male	45	49.63	64.53	51.72	2.00
Female	45	46.90	49.71	48.55	0.41
American Indian/Alaska Native	46	0.02	23.22	2.25	4.55
Asian	46	0.68	9.48	3.44	2.33
Hispanic	46	1.50	53.64	15.26	11.55
Black	46	0.96	53.43	14.79	13.49
White	46	24.55	90.78	61.41	15.71
Hawaiian/Pacific Islander	39	0.04	2.57	0.33	0.50
Two or More	42	0.99	9.15	3.38	1.69
SLD	50	2.08	6.86	4.55	1.10

Data Analysis

A quantitative research design was selected to answer the research question.

After collecting and stacking the data from NCES and IDC, Statistical Package for the Social Sciences (SPSS) was used for descriptive statistics. The descriptive statistical analysis indicates missing data, which will necessitate a missing data analysis.

Missing Values

Prior to the Hierarchical Linear Modeling analysis, SPSS software was used to perform a missing values analysis. The results indicated missing values for variables. Little's Missing Completely at Random (MCAR) test indicated that data were not missing completely at random and imputation was warranted. The expectation-maximization (EM) method was used to produce a single imputer file for analysis. See Table 3 for descriptive statistics of the 50 states before and after imputation.

Table 3

Descriptive Information for 50 States for 2000-2014

K-12 Characteristics	N	Minimum	Maximum	Mean	SD
Before Imputation					
Male	729	31.67	64.53	51.30	1.04
Female	730	0.28	52.11	48.31	1.96
White	740	13.63	96.64	64.79	18.10
Minority	740	3.36	86.37	34.90	18.11
SLD	742	2.03	9.97	5.29	1.29
After Imputation					
Male	750	31.52	64.53	51.28	1.26
Female	750	0.28	52.11	48.31	1.94
White	750	13.63	96.64	64.79	17.98
Minority	750	3.36	86.37	34.90	17.99
SLD	750	2.03	9.97	5.29	1.29

A two-level HLM model was used for the data analysis to answer the research question. The data represent time nested within states. The equations are:

Empty Model

$$SLD_{it} = \pi_{0i} + e_{it}$$

Final Model

Level-1

$$SLD_{it} = \pi_{0i} + \pi_{1i}*(Year_{it}) + \pi_{2i}*(Male_{it}) + \pi_{3i}*(Minority_{it}) + \pi_{5i}*(RTI_{it}) + \pi_{4i}*(Year_{it}^2) + \pi_{6i}*(RTI_{it}*Year_{it}) + \pi_{7i}*(RTI_{it}*Year_{it}^2) + e_{it}$$

Level-2

$$\pi_{0i} = \beta_{00} + r_{0i}$$

$$\pi_{1i} = \beta_{10}$$

$$\pi_{2i} = \beta_{20}$$

$$\pi_{3i} = \beta_{30}$$

$$\pi_{4i} = \beta_{40}$$

$$\pi_{5i} = \beta_{50}$$

$$\pi_{6i} = \beta_{60}$$

$$\pi_{7i} = \beta_{70}$$

CHAPTER IV

RESULTS

One research question of interest guides this study to examine the relationship between the identification of Specific Learning Disability and the application of Response to Intervention as the methodology utilized in seven states following the authorization of IDEA 2004: Is there a statistically significant difference in the percentage of students identified as Specific Learning Disability before and after state policy adoption in the states that only allow Response to Intervention as the process for identifying Specific Learning Disability? The seven states of interest have utilized RtI for SLD identification between five to seven years with SLD data available up to and including 2014. The only disability category of interest for this study is Specific Learning Disability, and the only methodology to identify SLD of interest is Response to Intervention. No other disabilities nor the use of the discrepancy model to identify SLD are of interest in this study.

Figures 2 through 8 illustrate the descriptive trends of the percentages of students identified with Specific Learning Disability for each state requiring Response to Intervention as the only procedure of identifying SLD. Figure 9 displays the average percentage of Specific Learning Disability identifications for 2000-2014. The seven states that require RtI for SLD identification are graphed in comparison to the 43 states that allow either Response to Intervention or the discrepancy model.

In six of the seven RtI states—Colorado, Connecticut, Idaho, Louisiana, Rhode

Island, and West Virginia—there is a visibly noticeable upturn in SLD identification percentages following the legislative requirement of using Response to Intervention for SLD identification. For the most part, the six states were experiencing a downward trend in SLD identifications prior to the adoption of RtI for identification of Specific Learning Disability. Louisiana’s upturn is very slight and is best noted through an examination of the SLD percentage data points in the data set. Rhode Island’s upturn is noticeable for the 2014 data point and also evident through an examination of Rhode Island’s SLD data percentages in the data set. Florida is the only state of the seven with a continued downward trend from 5.66% to 4.92% following the passage of legislative requirements.

In the other 43 states, Figure 9 indicates a declining linear trend until the 2015 SLD percentage. When compared to the seven RtI states which begins to level out with the 2012 SLD percentages and then turn upward, the 2015 average SLD identifications for the 43 states jumps from 4.67% in 2014 to 4.84% in 2015. The average SLD identifications for the seven RtI states increases from 4.10% to 4.20% from 2012 through 2014.

This descriptive analysis suggests RtI may not have reduced the designation of SLD and may have even contributed to an increase. The subsequent HLM analysis examines if the trend is greater than random temporal noise.

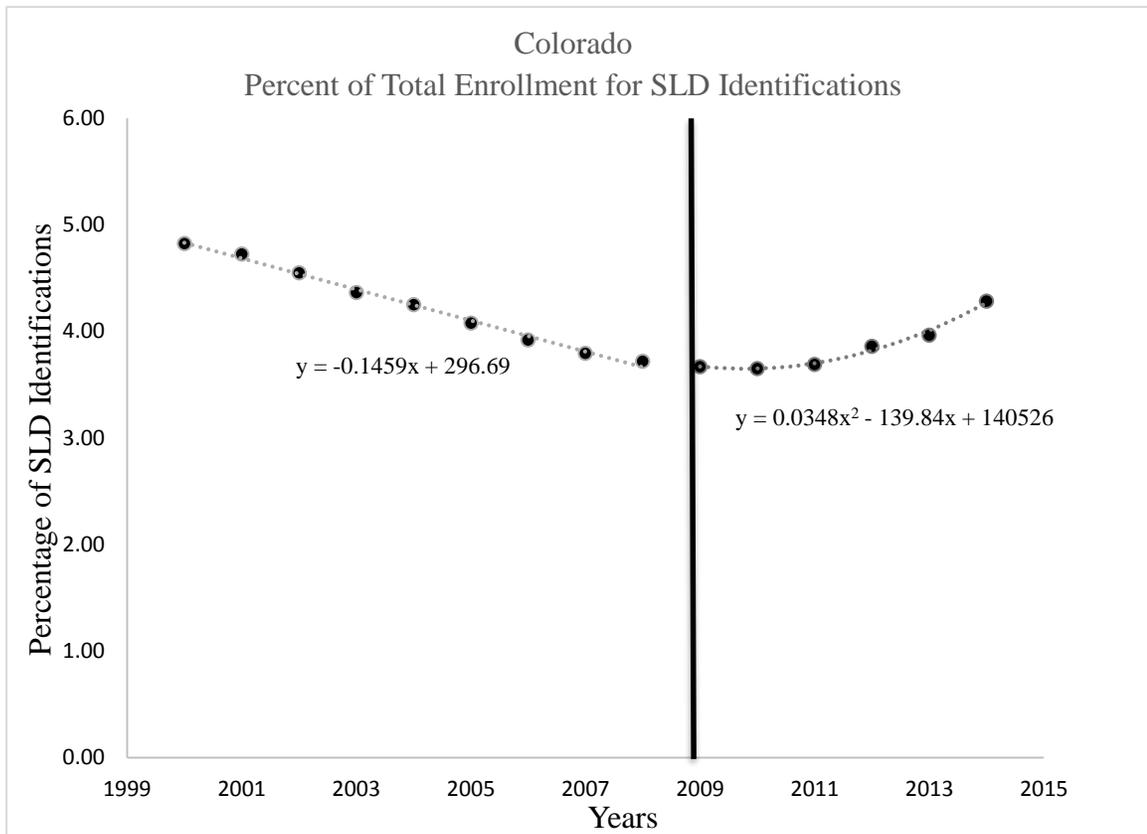


Figure 2. For Colorado, the comparison of the percentage of students identified with specific learning disability for the years 2000-2014. The vertical bar at 2009 indicates the change from the use of the discrepancy model to the use of RtI as the sole methodology for identification.

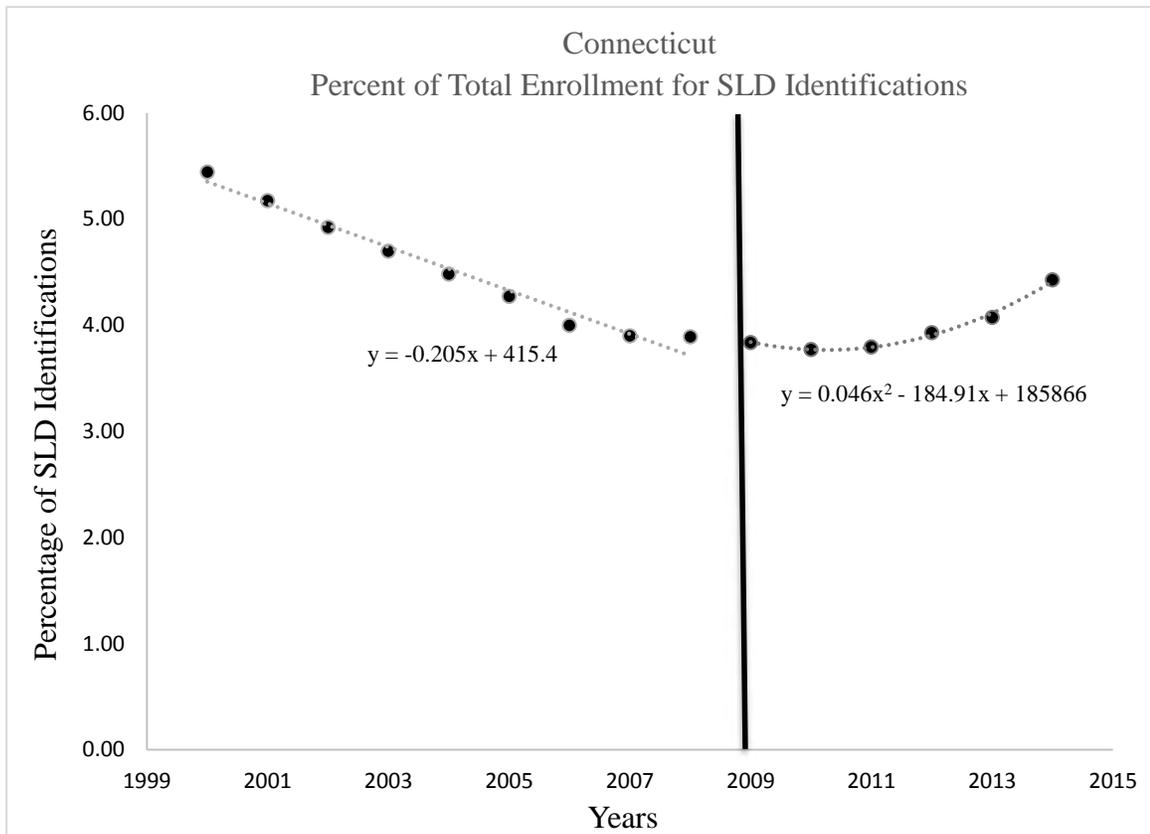


Figure 3. For Connecticut, the comparison of the percentage of students identified with specific learning disability for the years 2000-2014. The vertical bar at 2009 indicates the change from the use of the discrepancy model to the use of RtI as the sole methodology for identification.

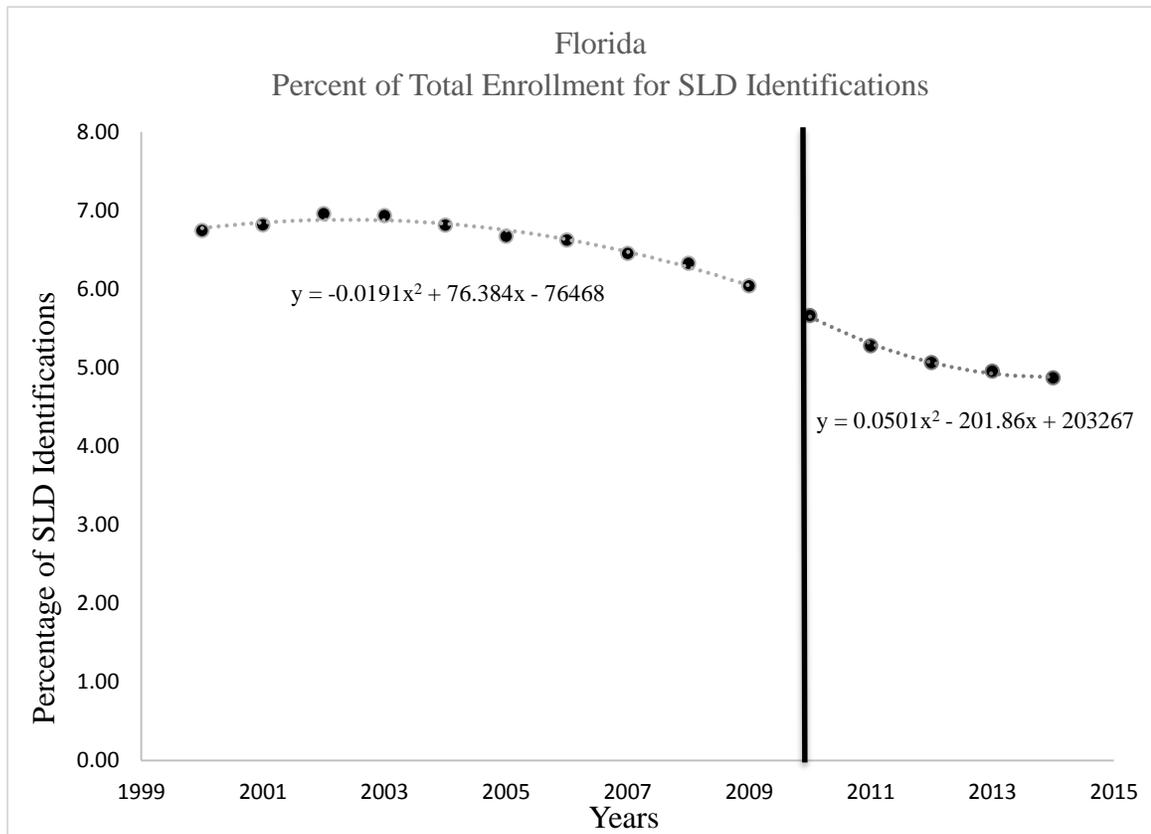


Figure 4. For Florida, the comparison of the percentage of students identified with specific learning disability for the years 2000-2014. The vertical bar at 2010 indicates the change from the use of the discrepancy model to the use of RtI as the sole methodology for identification.

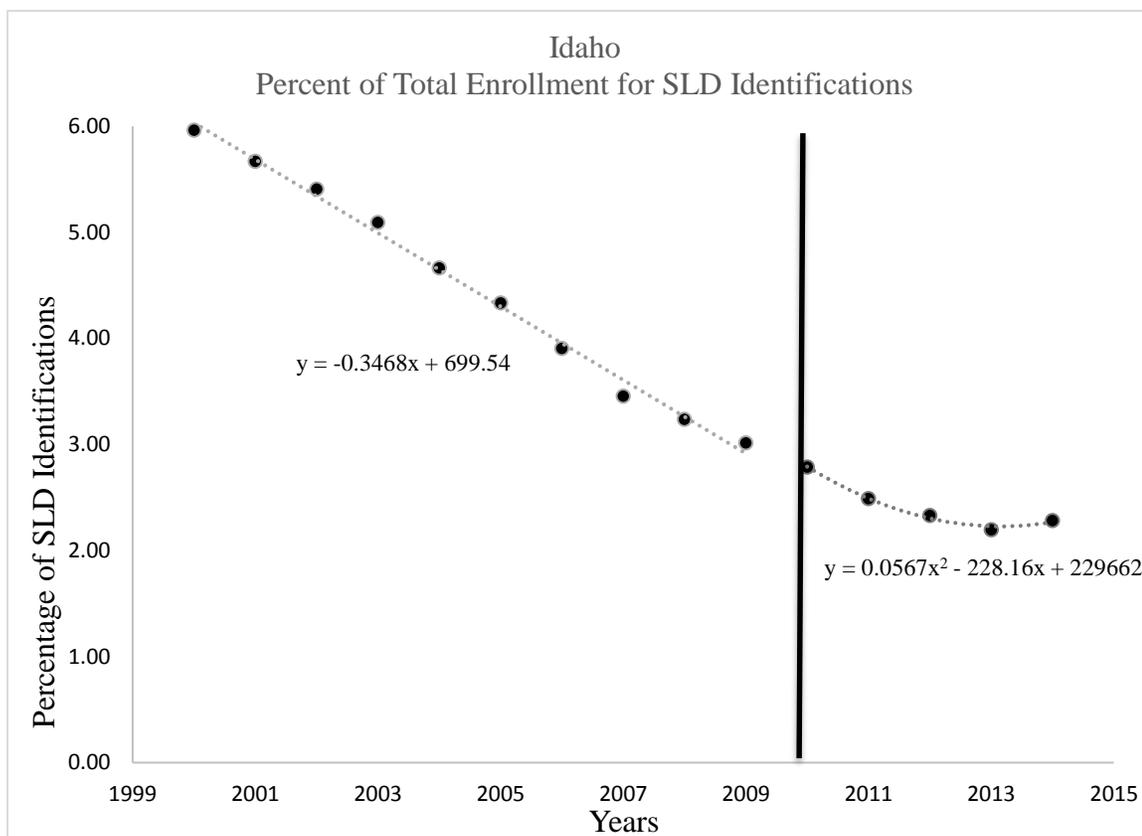


Figure 5. For Idaho, the comparison of the percentage of students identified with specific learning disability for the years 2000-2014. The vertical bar at 2010 indicates the change from the use of the discrepancy model to the use of RtI as the sole methodology for identification.

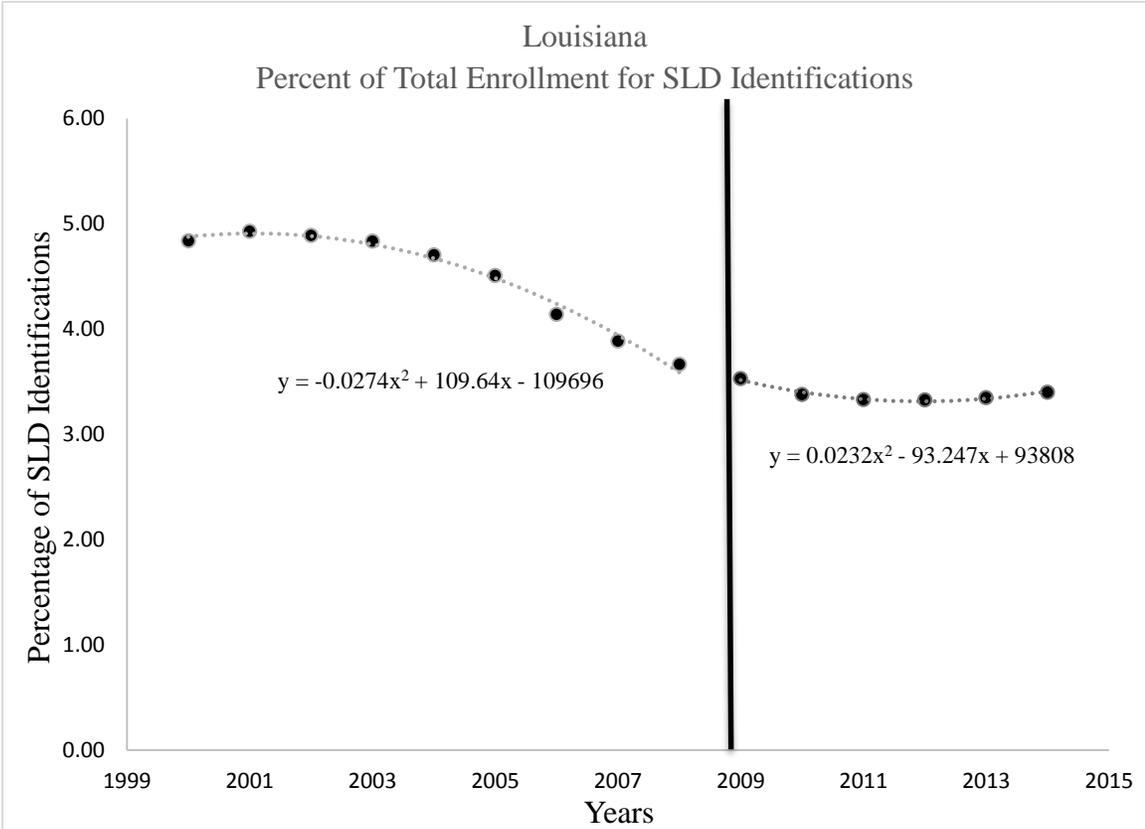


Figure 6. For Louisiana, the comparison of the percentage of students identified with specific learning disability for the years 2000-2014. The vertical bar at 2009 indicates the change from the use of the discrepancy model to the use of RtI as the sole methodology for identification.

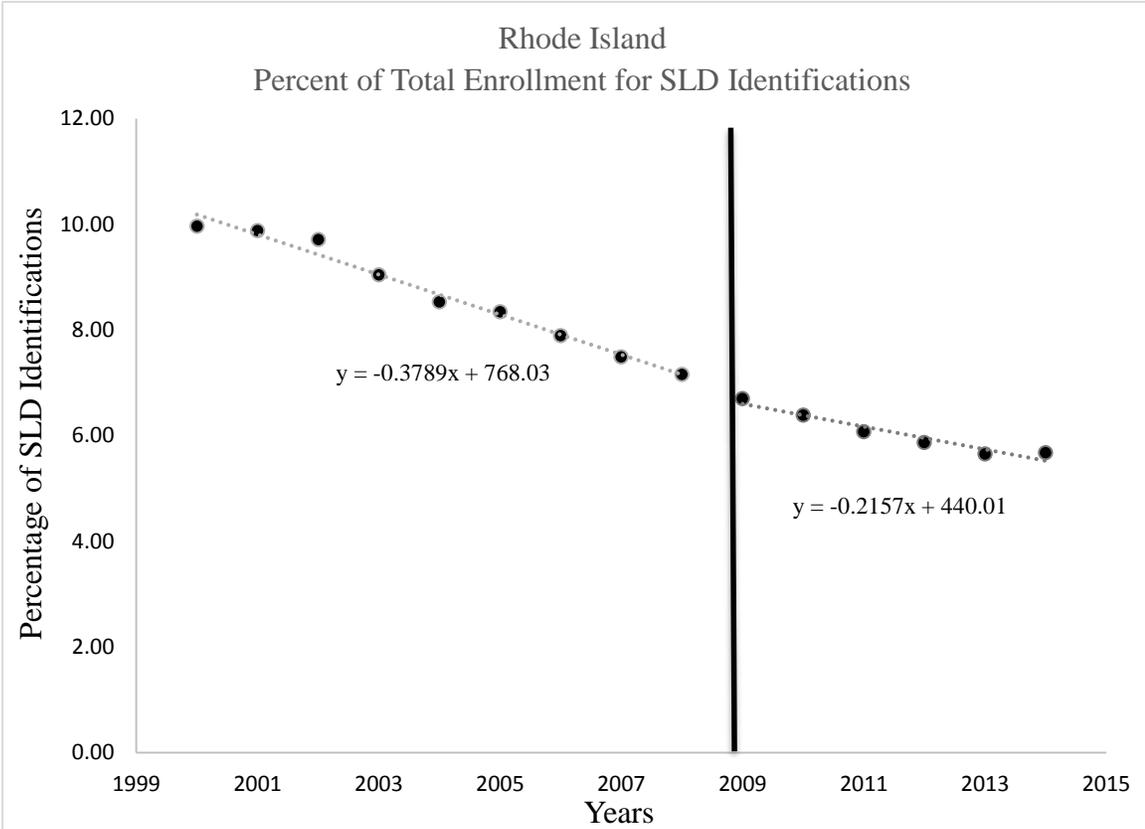


Figure 7. For Rhode Island, the comparison of the percentage of students identified with specific learning disability for the years 2000-2014. The vertical bar at 2009 indicates the change from the use of the discrepancy model to the use of RtI as the sole methodology for identification.

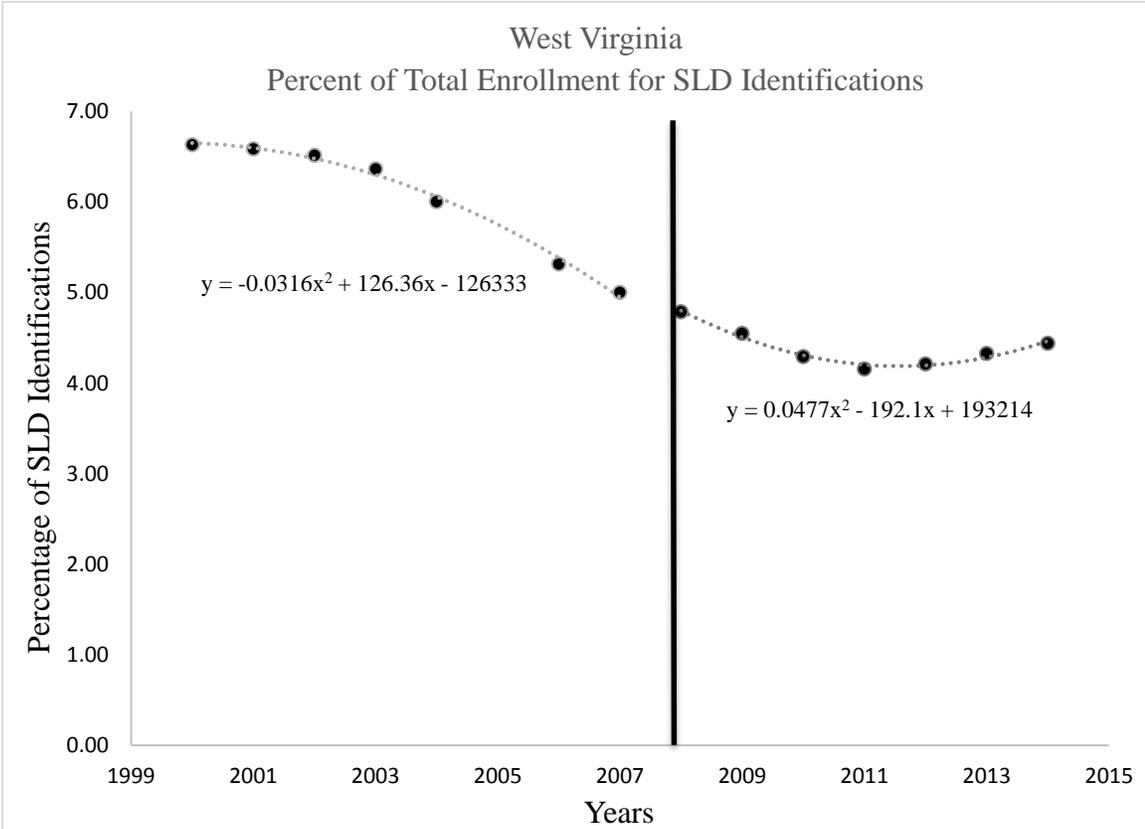


Figure 8. For West Virginia, the comparison of the percentage of students identified with specific learning disability for the years 2000-2014. The vertical bar at 2008 indicates the change from the use of the discrepancy model to the use of RtI as the sole methodology for identification.

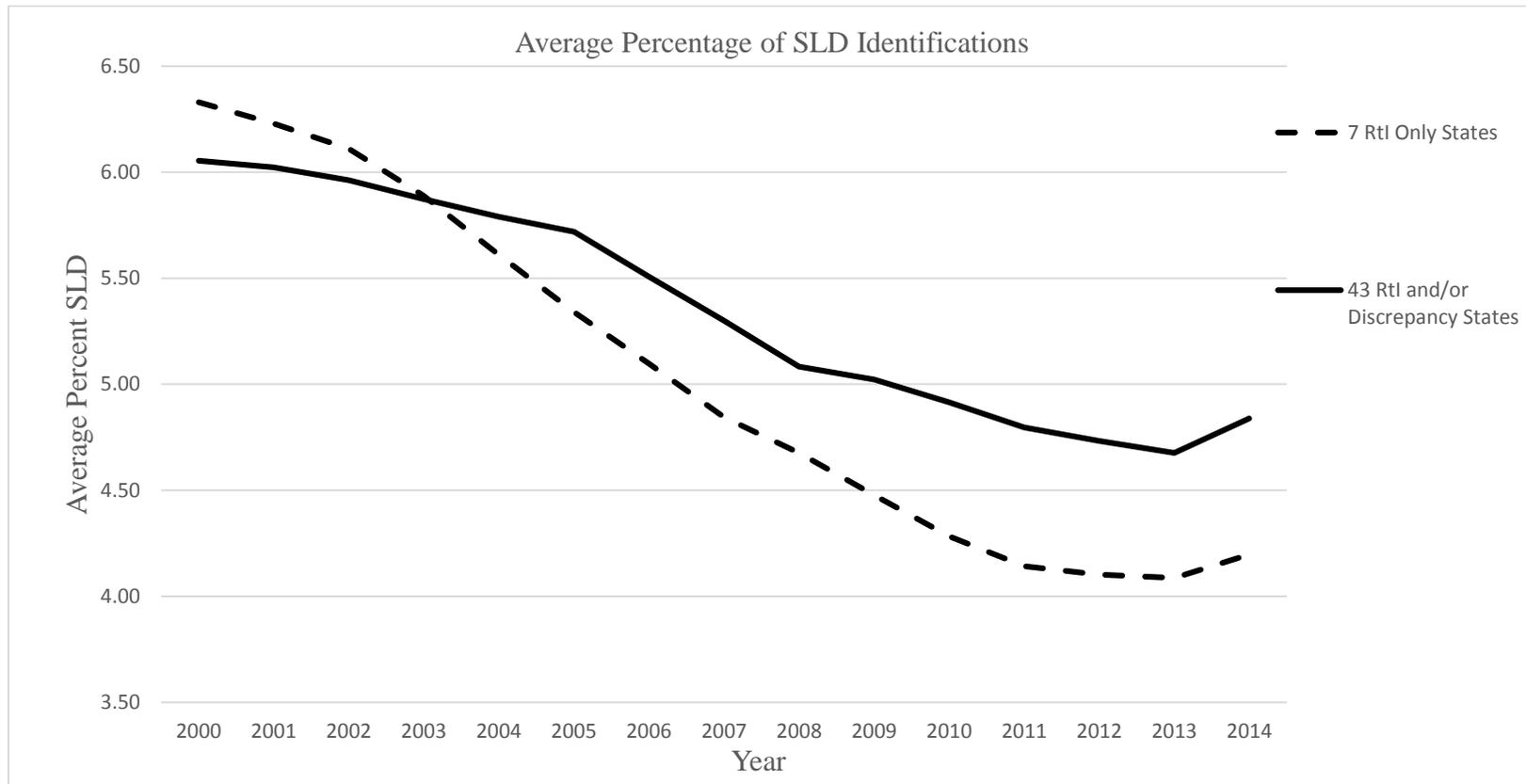


Figure 9. Comparison of the average percentage of students identified with specific learning disability for the years 2000-2014 of RtI Only states and RtI and/or discrepancy state

The results for the HLM analysis are displayed in Table 4. The analysis was run in stages utilizing an empty model and the final model. The empty model does not include any covariates but only the outcome variable. The equation for the empty model is:

$$SLD_{it} = \pi_{0i} + e_{it}$$

The empty model provides the basis for calculating the intraclass correlation coefficient (ICC) that provides the proportion of variance between states in the percentage of SLD identifications. The empty model ICC was 0.67 indicating that 67% of the total variance was between states. For the final model, the ICC was 0.84 indicating that 84% of the variance was between states. The clustering of SLD percentages is expected given that the analysis is examining differences in the same construct over time within states. In other words, the ICC numbers indicated that the percentages are similar from one year to the next within states.

As a reminder, the HLM analysis continued with the following model:

$$SLD_{it} = \pi_{0i} + \pi_{1i}*(Year_{it}) + \pi_{2i}*(Male_{it}) + \pi_{3i}*(Minority_{it}) + \pi_{5i}*(RTI_{it}) + \pi_{4i}*(Year^2_{it}) + \pi_{6i}*(RTI*Year_{it}) + \pi_{7i}*(RTI*Year^2_{it}) + e_{it}$$

All variables were entered into the model as uncentered. The variables of interest for this study are RtI, Year, and Year². RtI and Year² were found to be nonsignificant; however, Year and the interaction variables were statistically significant. Year measures the overall trend in SLD across all states, RTI*Year captures the difference in the linear trend between RtI and non-RtI states, and RTI*Year² captures the difference in the non-linear trend between RtI and non-RtI states.

In the final model, Intercept, Year, Male, Rti*Year, and Rti*Year² were statistically significant. The coefficient for Year indicates that the percentage of those identified as SLD decreased by 0.12 percentage points each year ($p < 0.001$). The difference in the linear trend between RtI and non-RtI states was -0.17 percentage points ($p < 0.001$), meaning the overall decrease in the percentage of students identified as SLD was greater in RtI states compared to non-RtI states. This is also evident in Figure 9. However, the significant difference on the Rti*Year² term indicated that the RtI states saw a significant upturn in the percentage of SLD identifications at some point in the years covered here.

The following equation (Garson, 2013, p. 221) was used to determine the year at which the percentage of SLD identifications began to turn upward:

$$-(RtI * Year) / 2(RtI * Year^2)$$

The calculation yields 10.625, indicating the upward turn began with the 10th year of data or around 2010. The average year of the legislative requirement for using Response to Intervention for SLD identification in the seven states is 2009, which closely correlates to the calculated upward trend. Taken together, this means the percentage of students identified as Specific Learning Disability decreased long before the RtI policy change in the seven states, and that rather than continuing to decrease, the percentages actually appeared to increase shortly after the policy adoption.

Finally, turning to the variance components, the percentage of variance accounted for (PVAF) indicated that 61% of the variance of the dependent variable is accounted for with the addition of the covariates. The statistically significant chi-square for the final

model indicated that although the addition of the variables into the model explains greater than 60% of the variance, a significant amount still remains unexplained.

Table 4

HLM Results

Fixed Effects	Empty Coeff. (SE)	Model 1 Coeff. (SE)
Intercept	5.29 (0.15)**	3.84 (0.78)**
Year		-0.12 (0.02)**
Male		0.04 (0.02)*
Minority		0.005 (0.004)
RtI		0.37 (0.46)
Year ²		-0.0001 (0.001)
RtI * Year		-0.17 (0.04)**
RtI * Year ²		0.008 (0.003)*
Random Effects		
u_{00}	1.12	1.16
σ^2	0.56	0.22
χ^2	1521.34**	3801.74*
ICC	0.67	0.84
PVAF Level 1		0.61

* $p < 0.05$; ** $p < 0.001$

Note: HLM = hierarchical linear model; ICC = intraclass correlation coefficient; PVAF = percentage of variance accounted for.

CHAPTER V

DISCUSSION

Response to Intervention emerged into public education as a method to improve educational outcomes for all students (Batsche et al., 2006; Kavale et al., 2005; Kavale et al., 2013). It quickly took hold in special education as a method to prevent over-identification or misidentification of low-achievers, or slow-learners, or learners who may require additional instruction in order to master a construct (Fletcher et al., 2004; Kavale et al., 2006; Kavale et al., 2008). In IDEA 2004, RtI became an approved alternative for the identification of students with Specific Learning Disability. Many supporters of RtI for SLD identification believed that using the RtI method would decrease the number of students being identified (Buffum et al., 2010; Burns, Jacob & Wagner, 2008; Fletcher & Vaughn, 2009). This study looked at the trend in SLD identification percentages before and after adoption of the Response to Intervention alternative following IDEA 2004 to determine if that claim has come to fruition.

Interpretation

Is there a statistically significant difference in the percentage of students identified as Specific Learning Disability before and after state policy adoption in the states that only allow Response to Intervention as the process for identifying Specific Learning Disability?

Three variables were of interest in this study—RtI, Year, and Year²—with RtI being of greatest interest. The HLM analysis results indicated that there is not a statistically

significant relationship between using RtI for SLD identification and the percentage of SLD identifications. Year was statistically significant indicated a relationship between Year and percentage of SLD identifications with the percentage of SLD identifications decreased by 0.12 percentage points each year. This becomes more relevant with the exploration of linear and non-linear trends in the percentages of SLD identifications.

The two interaction variables of $RtI * Year$ and $RtI * Year^2$ were statistically significant indicating a relationship between the product of RtI and time on the percentage of SLD identifications. The decrease in the percentage of students identified with SLD was greater in the RtI states when compared to the non-RtI states. That changed with an upturn with the RtI states seeing an increase following the legislative requirement to use RtI for SLD identification. A statistically significant upturn in the trend line is noted around year 2010 which correlates to the average year of 2009 when states required the use of Response to Intervention for the identification of Specific Learning Disability. Although Response to Intervention alone is not statistically significant, the interaction variables are statistically significant indicating a relationship between the product of RtI and time to the percentage of SLD identifications within the states requiring RtI for the identification of Specific Learning Disability.

The claim of Response to Intervention reducing the number of Specific Learning Disability identifications is not substantiated through this study. Although the claim is not validated, it begs the question of whether the claim was an accurate one to make. While there is a statistically significant increase in the non-linear trend in the percentages of SLD identifications in the seven states legislating the use of RtI, can one draw the conclusion that RtI is not an effective method for identifying SLD—or is RtI performing

as it should and identifying students who may have been missed through the use of the discrepancy model.

There are many factors that influence Response to Intervention being applied with fidelity and, therefore, correctly identifying students with Specific Learning Disability (2009; Reynolds & Shaywitz; Scull & Winkler, 2011; VanDerHeyden et al., 2007). The range of variation in the legislation from the seven states is but one influencing factor. There is no standardization or commonality between the states or within the states as local control influences each district and school's RtI program (Berkeley et al., 2009; Great Schools Partnership, 2014; Reynolds & Shaywitz, 2009; Zirkel and Thomas, 2010a, 2010b). Training or lack of training on the delivery of interventions is another factor that may influence the non-linear, increasing trend (Fisher & Frey, 2011; Johnston, 2011; Kavale et al., 2008; Mastropieri & Scruggs, 2005; Hale et al., 2010). This concern would apply to not only the initial training but also any continued training or education of educators and school administrators. A high turnover rate of special educators is a known concern in the field (Boe & Cook, 2006). Depending on the initial training and continuing education in Response to Intervention, the high turnover of special educators may be having a negative effect on the application of a Response to Intervention process as experience is lost.

An increase of identifications may be the result of an unintended consequence. State education budgets vary greatly and many states continue to experience low funding or decreases in state funding (US Department of Commerce, 2015). Although it may be viewed as a less than honorable intention, schools may be identifying students with Specific Learning Disability to help improve available funds for not only special

education students but also for curriculum, training, and stipends for Response to Intervention process. Special education has not been fully funded through federal funds since the passage of EAHCA in 1974 (McCann, 2014). In IDEA 2004, 34 CFR §300.226, allows 15% of IDEA Part B funds to be used for Response to Intervention. In a system that is already financially stressed, a 15% loss in funds may negatively affect special education programs trying to meet the various needs of students. Identifying additional students provides additional funds to a school.

Even with a wide range of factors that can negatively affect an RtI program, there is the possibility that using Response to Intervention for identifying students with Specific Learning Disability is effective and the increase in identifications is due to the effectiveness of the process. Response to Intervention occurs over a period of time and is not limited to two assessments for intelligence and achievement given to the student within a relatively close period of time. Through the benefit of time, more data are collected and a broad picture of a student's academic performance in reading, writing, and math is developed (Hamilton, Halverson, Jackson, Mandinach, Supovitz, Wayman, Pickens, Martin, & Steele, 2009; Marsh, Pane & Hamilton, 2006). A more detailed, data-driven profile of a student struggling in academics may validate the need for special education services resulting in more students being identified as opposed to fewer.

Although it is clear that an increasing, non-linear trend in the percentage of students identified with SLD is occurring in the seven states legislating RtI for identification, it is unclear as to why the increase is occurring. Determining the cause for the increase is beyond the scope of this study. The purpose of this study was to examine the claim that Response to Intervention would decrease the number of students identified

with SLD.

Limitations

There are several limitations of this study. The first is the limited size of the data set. This limitation is represented by both the overall number of states used in the study along with the number of states that have legislated the use of Response to Intervention in the identification of a Specific Learning Disability. Although all 50 states were represented in the data set, this is at the lower end of the recommendation for a person-period, or in this case a state-period, data set (Singer & Willett, 2003). The time span also limits the data set. Data prior to the legislation of RtI for SLD determination covers between eight to eleven years but only provides between five to seven years of post-legislative data. This again provides a minimum for an interrupted time series analysis (Velice & Fava, 2003; Wong, Cook & Steiner, 2009).

Another limitation directly related to the limited size of the data set is the cycle on which students with Specific Learning Disability are initially identified and reevaluated. At the time any of the seven states legislated the requirement of Response to Intervention for SLD identification, students previously identified using the discrepancy model were included in the percentage of students identified with SLD. In order for all students to be identified through an RtI process, three years' time must pass so that all students with Specific Learning Disability previously identified using the discrepancy model are reevaluated using the RtI process.

Another limitation is the inconsistency across the states in the legislative requirements for Response to Intervention. Every state requiring RtI for SLD identification is allowed to interpret and apply the law as they see fit. The lack of

standardization does not allow this study to use any type of a control group in order to determine if one form of the Response to Intervention process works better than another.

The lack of information on states that may be using part or all of the Response to Intervention methodology within their schools and in the process to identify students with Specific Learning Disability also limits this study. This lack of information causes the data for the 43 states not legislating RtI for SLD identification to be muddied with the potential application of a part or all of Response to Intervention resulting in no true comparison group. For the 43 states, the identification of a student with a Specific Learning Disability may be done through discrepancy, RtI, or a combination of both meaning their SLD percentages may be partially affected by Response to Intervention.

In policy analysis, there are two phenomena that may occur—lags and unintended consequences. Both lags and unintended consequences can affect data collection and outcomes in evaluative studies. Neither can be controlled and are known problems (Heise, 2002; Noell & Gansle, 2009).

In an article in *Education Week*, Solmon (2003) pointed out numerous lags in education policy. The first is in the recognition lag of a problem within the education system. Once a problem is identified, there may be policy-selection lag as a legislative body determines the best course of action to fix the identified problem. Once a program is selected, it may experience legislative lag, regulation lag, and appropriation lag as it is discussed within various committees and groups. Once passed and placed in education law, litigation lag may ensue as opposing sides of the legislation question its validity. Districts and schools may create additional lag through implementation lag coupled with

buy-in lag which also has learning lag as states train districts which in turn train staff on the new process and procedure.

Once in place, impact lag is directly related to reporting lag. This phase may directly affect the outcome of this study of Response to Intervention for the identification of Specific Learning Disability as data is only reported yearly. There is no way to know when RtI for SLD identification may cause states percentages to decrease or if it ever will cause them to decrease. According to Solmon (2003), these lags should not prevent education reforms or policy analysis of reforms; however, they should be recognized as real contributors to educational outcomes and data collection.

Unintended consequences are simply unanticipated or unforeseen consequences. Unintended consequences can be positive, negative, or a combination of both. An unintended consequence of the No Child Left Behind Act is the problem of having teachers teach to the test and narrow the curriculum to align with the constructs of the tests (Amrein-Beardsley, 2009). Students may also be excluded or exempted from taking high stakes tests in order to create elevated scores. The tests meant to hold schools accountable exclude those for whom the school is closely scrutinized—students with disabilities and English Language Learners.

A positive unintended consequence may be paired with a negative. For years, efforts were made to equalize education and educational outcomes for minority students. In *Brown v. Board of Education* (1954), integration in schools was required. Educational inequalities have diminished over the years; however, it is difficult to identify a longitudinal study that overwhelmingly demonstrates that desegregation greatly benefitted minority students through multiple measures including improved learning and

outcomes (Roots, 2004; Wells & Crain, 1994). *Brown v. Board of Education* was the catalyst to improve education opportunities and outcomes for students with disabilities (Roots, 2004).

As noted earlier, Response to Intervention was created as a process to improve education for all students including students with disabilities. As a result of implementation lag and reporting lag, research on the effectiveness of RtI on the general education population continues to be reported (Balu, Pei, Doolittle, Schiller, Jenkins, & Gersten, 2015). It is unclear how the U.S. Department of Education Institute for Education Services report (Balu et al., 2015) may affect the use of Response to Intervention for SLD identification or of any potential unintended consequences. A major finding of the study was the ineffectiveness of additional instructional time on increasing both reading comprehension and fluency for first grade students. The ineffectiveness could contribute to RtI being a longer wait-to-fail model in the identification of students with Specific Learning Disability.

Recommendations for Future Research

Based upon the results of this study, continuing research should be done on the state percentages of students identified with Specific Learning Disability. Extending this study to include future years' data would provide validity to this study and the effectiveness of RtI to reduce or not reduce the number of students identified with SLD. With approximately 40 states still weighing the option of requiring only the use of Response to Intervention for SLD identification, a longitudinal study may provide valuable historical information for states' decision making processes. Along with extending the study in time, it may also be beneficial to extend the study to other

disability categories. Exploring trends in the percentages of Specific Learning Disability when compared to Speech Language Impairment (SLI) and Other Health Impairment (OHI) would increase the breadth and knowledge of historical and current trends in disability identifications and if those trends have any relationship with each other.

As a way to enhance this study, district level and/or school level data could be evaluated. Analyzing district or school level data also provides a greater probability of utilizing one or more time-invariant covariates and including covariates potentially affecting school finances such as property tax revenues and socio-economic status. With so much variation across states for Response to Intervention programs and this study's data set, it is easy to conclude that the same level of variability occurs across districts and states due to local conditions. Analyzing district or school level data would allow a state to pinpoint districts and schools experiencing a decrease in their percentages of SLD identifications. Those districts and schools experiencing decreases could be used as RtI exemplars.

Additionally, a qualitative study could be pursued to compliment the quantitative results. For the seven states requiring Response to Intervention for the identification of Specific Learning Disability, interviews with district and school level personnel responsible for the implementation of RtI along with those responsible for the identification of students with SLD would deepen and strengthen this study. Hearing the voices of those individuals may 1) provide answers to the question of why the percentages are beginning to increase, 2) yield details of Response to Intervention programs, and 3) provide suggestions for quality RtI systems.

Finally, a new player is emerging in education—Multi-Tier System of Supports (MTSS). In its very basic terms, MTSS is the marriage of Response to Intervention and Positive Behavior Support (PBS) and addresses both the academic and behavior needs of students. When students with behavior concerns do not achieve academically, MTSS provides the framework to address the behaviors that may be impeding learning while also addressing academic deficits (Berry Kuchle, Zumeta Edmonds, Danielson, Peterson, & Riley-Tillman, 2015). Depending on states' decisions to legislate MTSS, a future study using data collected under the MTSS model may provide information on the role behavior plays in the identification of students with Specific Learning Disability.

Conclusion

Public education policy is created at the federal state, and local level. The federal role in education policy is limited but can be impactful. Offered as an alternative to the discrepancy model for identification of SLD identification in IDEA 2004, Response to Intervention has influenced special education practices in at least seven states. With one expected benefit being the decrease in SLD identifications, this study set out to examine that claim.

In 2013, Zirkel tracked the percentage of students identified with Specific Learning Disability from 1995 through 2011. His results indicated a descending trend similar to the trend found in this study. Zirkel stated that not enough time had elapsed for Response to Intervention to be implemented and for the results of the implementation to be noted in reporting data. He also did not delineate the states requiring RtI for the identification of SLD from the non-RtI states.

This study takes Zirkel's work one step further and one step deeper by extending the time of the study and differentiating between the RtI states and the non-RtI states. Clearly, the states requiring RtI are seeing a statistically significant upturn in the percentage of SLD identifications when compared to the non-RtI states. Any policy that has such a profound and potentially noteworthy effect on public education should be thoroughly analyzed and researched for both direct and indirect outcomes.

Federal, state and local governments will continue to create and mandate policy with an intent to improve education for all students. Thorough and complete research that clearly identifies the efficacy of future educational policies would benefit all stakeholders especially if efforts are made to decrease unsubstantiated promises and prevent unnecessary expenditures on already stressed school budgets. Response to Intervention entered education with a claim of improving education for all students and then into special education with one claim of reducing SLD identifications. With an analysis of the current data for both RtI and non-RtI states, there is not a decrease in SLD identifications in RtI states. Although this is the first study to analyze historical Specific Learning Disability percentages, there is cause to continue the conversation with both researchers and practitioners on using Response to Intervention as an appropriate methodology to identify Specific Learning Disability.

References

- Al Otaiba, S., Wagner, R. K., & Miller, B. (2014). "Waiting to fail" redux: Understanding inadequate response to intervention. *Learning Disabilities Quarterly*, 37(3), 129-133. doi: 10.1177/0731948714525622
- Albrecht, S. F., Skiba, R. J., Losen, D.J., Chung, C-G., & Middelberg, L. (2012). Federal policy on disproportionality in special education: Is it moving us forward? *Journal of Disability Policy Studies*, 23(1), 14-25. doi: 10.1177/1044207311407917
- Amrein-Beardsley, A. (2009). The unintended, pernicious consequences of "staying the course" on the United States' No Child Left Behind policy. *International Journal of Education Policy and Leadership*, 4(6). Retrieved from <http://journals.sfu.ca/ijepl/index.php/ijepl/article/view/199>
- Balu, R., Pei Z., Doolittle, F., Schiller, E., Jenkins, J., & Gersten, R. (2015). Evaluation of response to intervention practices for elementary school reading (NCEE2016-4000). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education
Retrieved from MDRC website:
http://www.mdrc.org/sites/default/files/RtI_2015_Full_Report_Rev_21064000.pdf
- Bamberger, M., Rugh, J., & Mabry, L. (2013). *RealWorld Evaluation: Working under budget, time, data, and political constraints*. Thousand Oaks, California: SAGE Publications, Inc.

- Batsche, G. M., Kavale, K. A., & Kovalski, J. F. (2006). Competing views: A dialogue on response to intervention. *Assessment for Effective Intervention*, 32(1), 6-19.
Doi: 10.1177/15345084060320010301
- Berkeley, S., Bender, W. N., Gregg Peaster, L., & Saunders, L. (2009). Implementation of response to intervention: A snapshot of progress. *Journal of Learning Disabilities*, 42(1), 85-95. doi: 10.1177/0022219408326214
- Berry Kuchle, L., Zumeta Edmonds, R., Danielson, L. C., Peterson, A., & Riley-Tillman, T. C. (2015). The next big idea: A framework for integrated academic and behavioral intensive intervention. *Learning Disabilities Research & Practice*, 30(4), 150-158. doi: 10.1111/ldrp.12084
- Biglan, A., Ary, D., & Wagenaar, A. C. (2000). The value of interrupted time-series experiments for community intervention research. *Prevention Science*, 1(1), 31-49. doi: 10.1023/A:1010024016308
- Birsh, J. R. (2005). *Multisensory teaching of basic language skills* (2nd ed.) Baltimore, Maryland: Paul H. Brookes Publishing
- Boe, E., & Cook, L. (2006). The chronic and increasing shortage of fully certified teachers in special and general education. *Exceptional Children*, 72(4), 443-460.
Retrieved from <http://cec.metapress.com/index/X556P6350380336K.pdf>
- Brown v. Board of Educ., 347 U.S. 483 (1954).
- Brown-Chidsey, R. (2007). No more waiting to fail. *Educational Leadership*, 3(4), 40-47. Retrieved from
<https://dschool.stanford.edu/sandbox/groups/k12/widi/f2826/attachments/45398/N>

o%20More%20Waiting%20To%20Fail.pdf?sessionID=4a0b9f72819331fd36a92e
de4be5c622d3af2923

- Buffum, A., Mattos, M., & Weber, C. (2010). The why behind RtI. *Interventions That Work*, 68 (2), 10-16. Retrieved from <http://www.greatschoolspartnership.org/wp-content/uploads/2014/11/The-Why-Behind-RTI.peff2923>
- Burns, M. K. (2007). RTI will fail, unless ... Newspaper of the National Association of School Psychologists, pp. 38–40. Retrieved from http://www.abuffum.com/uploads/3/3/6/7/3367012/rti_will_fail_unless....pdf
- Burns, M. K., Jacob, S., & Wagner, A. R. (2008). Ethical and legal issues associated with using response-to-intervention to assess learning disabilities. *Journal of School Psychology*, 46(3), 263–279. doi:10.1016/j.jsp.2007.06.001
- Burns, M. K., & Senesac, B. V. (2005). Comparison of dual discrepancy criteria to assess response to intervention. *Journal of School Psychology*, 43(5), 393–406. doi:10.1016/j.jsp.2005.09.003
- Büttner, G., & Hasselhorn, M. (2011). Learning Disabilities: Debates on definitions, causes, subtypes, and responses. *International Journal of Disability, Development and Education*, 58(1), 75–87. doi:10.1080/1034912X.2011.548476
- Cortiella, C. (2010). IDEA 2004 close up: Evaluation and eligibility for specific learning disability. Retrieved from The Advocacy Institute
- Coutinho, M.J., & Oswald, D. P. (2005). State variation in gender disproportionality in special education: Findings and recommendations. *Remedial and Special Education*, 26(1), 7-15. doi: 10.1177/07419325050260010201

- Daniels, H., Hey, V., Leonard, D., & Smith, M. (1999). Issues of equity in special needs education from a gender perspective. *British Journal of Special Education*, 26(4), 189-195. Retrieved from <http://libproxy.uccs.edu:2052/ehost/pdfviewer/pdfviewer?sid=b6ba2d31-c4d3-4c9c-a810-42d66a006a67%40sessionmrg113&vid=1&hid=123>
- Dee, T. S., & Jacob, B. (2011). The impact of No Child Left Behind on student achievement. *Journal of Policy Analysis and Management*, 30(3), 418-446. doi: 10.1002/pam
- Ferri, B.A. (2012). Undermining inclusion? A critical reading of response to intervention (RTI). *International Journal of Inclusive Education*, 16(8), 863-880. doi: 10.1080/13603116.2010.538862
- Fisher, D. & Frey, N. (2011). Implementing RTI in a high school: A case study. *Journal of Learning Disabilities*, 26(2), 99-114. doi: 10.1177/0022219411407923
- Fletcher, J. M., Coulter, W. A., Reschly, D. J., & Vaughn, S. (2004). Alternative approaches to the definition and identification of learning disabilities: Some questions and answers. *Annals of Dyslexia*, 54(2), 304–331. doi:10.1007/s11881-004-0015-y
- Fletcher, J. M., Lyon, G. R., Fuchs, L. S., & Barnes, M. A. (2007). *Learning disabilities: From identification to intervention*, New York, New York: The Guilford Press
- Fletcher, J. M., Stuebing, K. K., Morris, R. D., & Lyon, G. R. (2013). Classification and definition of learning disabilities: A hybrid model. In H. Swanson, K. Harris, & S. Graham (Eds.), *Handbook of Learning Disabilities* (pp. 15-32). New York, New York: The Guilford Press

- Fletcher, J. M., & Vaughn, S. (2009). Response to intervention: Preventing and remediating academic difficulties. *Child Development Perspectives*, 3(1), 30–37. doi:10.1111/j.1750-8606.2008.00072.x
- French, B., & Heagerty, P.J. (2008). Analysis of longitudinal data to evaluate a policy change. *Statistics in Medicine*, 27, 5005-5025. doi: 10.1002/sim.3340
- Fuchs, D., Deshler, D. D., & Reschly, D. J. (2004). National Research Center on learning disabilities multimethod studies of identification and classification issues. *Learning Disability Quarterly*, 27(4), 189–195. Retrieved from <http://www.jstor.org/stable/1593672>
- Fuchs, D., & Fuchs, L. S. (2006). Introduction to response to intervention: What, why, and how valid is it? *Reading Research Quarterly*, 41(1), 93–99. doi:10.1598/RRQ.41.1.4
- Fuchs, D., Mock, D., Morgan, P. L., & Young, C. L. (2003). Responsiveness-to-intervention: Definitions, evidence, and implications for the learning disabilities construct. *Learning Disabilities Research and Practice*, 18(3), 157–171. doi:doi:10.1111/1540-5826.00072
- Fuchs, L. S., & Fuchs, D. (2009). On the importance of a unified model of responsiveness-to-intervention. *Child Development Perspective*, 3(1), 41–43. doi:10.1111/j.1750-8606.2008.00074.x.
- Fuchs, L. S., & Vaughn, S. (2012). Responsiveness-to intervention: A decade later. *Journal of Learning Disabilities*, 45(3), 195–203. doi:10.1177/0022219412442150

- Garson, G.D. (2013). *Hierarchical linear modeling: Guide and applications*. Thousand Oaks, California: SAGE Publications, Inc.
- Gessler-Werts, M., Lambert, M., & Carpenter, E. (2009). What special education directors say about RTI. *Learning Disability Quarterly*, 32, 245–255. doi: 10.2307/27740376
- Great Schools Partnership (2014). The glossary of education reform. Retrieved from <http://www.edglossary.org>
- Hale, J., Alfonso, V., Berninger, V., Bracken, B., Christo, C., Clark, E., . . . Yalof, J. (2010). Critical issues in response-to-intervention, comprehensive evaluation, and specific learning disabilities identification and intervention: An expert white paper consensus. *Learning Disabilities Quarterly*, 33, 223-236. Retrieved from <http://web.a.ebscohost.com/ehost/pdfviewer?sid=ec09d34b-3930-41b8-9a9d-4e7480e69ac8%40sessionmgr4002&vid=0&hid=4206>
- Hallahan, D. P., Keller, C. E., Martinez, E. A., Byrd, E. S., Gelman, J. A., & Fan, X (2007). How variable are interstate prevalence rates of learning disabilities and other special education categories? A longitudinal comparison. *Council for Exceptional Children*, 73(2), 136-146. doi: 10.1177/001440290707300201
- Hallahan, D. P., Pullen, P. C., & Ward, D. (2013). A brief history of the field of learning disabilities. In H. Swanson, K. Harris, & S. Graham (Eds.), *Handbook of Learning Disabilities* (pp. 15-32). New York, New York: The Guilford Press
- Hamilton, L., Halverson, R., Jackson, S. S., Mandinach, E., Supovitz, J.A., Wayman, J.C., Pickens, C., Martin, E., & Steele, J.L. (2009). Using student achievement data to support instructional decision making. United States Department of

- Education. Retrieved from
http://repository.upenn.edu/cgi/viewcontent.cgi?article=1298&context=gse_pubs
- Heise, M. (2002). The courts, educational policy, and unintended consequences. *Cornell Journal of Law and Public Policy*, 11(3), 633-663. Retrieved from
<http://scholarship.law.cornell.edu/cjlp/vol11/iss3/6>
- Hughes, C. A., & Dexter, D. D. (2011). Response to intervention: A research-based summary. *Theory Into Practice*, 50(1), 4–11. doi:10.1080/00405841.2011.534909
- IDEA Data Center (2014). <https://ideadata.org>
- Individuals with Disabilities Education Improvement Act, 20.U.S.C. § 1400 (2004).
- Johnston, P. H. (2011). Response to intervention in literacy: Problems and possibilities. *The Elementary School Journal*, 111(4), 511–534. Retrieved from
http://www.jstor.org/stable/10.1086/659030?seq=1#page_scan_tab_contents
- Kavale, K. A. (2005). Identifying specific learning disability: Is responsiveness to intervention the answer? *Journal of Learning Disabilities*, 38(6), 553-562.
 doi:10.1177/00222194050380061201
- Kavale, K. A., Holdnack, J. A., & Mostert, M. P. (2005). Responsiveness to intervention and the identification of specific learning disability: A critique and alternative proposal. *Learning Disability Quarterly*, 29(1), 113-127. doi:10.2307/4126970
- Kavale, K. A., Kauffman, J. M., Bachmeier, R. J., & LeFever, G. B. (2013). Response-to-Intervention: Separating the rhetoric of self-congratulation from the reality of specific learning disability identification. *Learning Disability Quarterly*, 31, 135–150. Retrieved from

<http://www.ingentaconnect.com/content/cld/ldq/2008/00000031/00000003/art00003>

- Kavale, K. A., & Spaulding, L. S. (2008). Is response to intervention good policy for specific learning disability? *Learning Disabilities Research & Practice, 23*(4), 169–179. doi:10.1111/j.1540-5826.2008.00274.x
- Keogh, B. K. (2005). Revisiting classification and identification. *Learning Disability Quarterly, 28*(2), 100. doi:10.2307/1593603
- Marsh, J.A., Pane, J.F., & Hamilton, L.S. (2006). Making sense of data-driven decision making in education. Retrieved from The Rand Corporation website:
http://www.rand.org/content/dam/rand/pubs/occasional_papers/2006/RAND_OP170.pdf
- Martinez, R. & Young, A. (2011). Response to intervention: How is it practiced and perceived? *International Journal of Special Education, 26*(1), 44-52. Retrieved from <http://files.eric.ed.gov/fulltext/EJ921184.pdf>
- Mastropieri, M.A., & Scruggs, T.E. (2005). Feasibility and consequences of response to intervention: Examination of the issues and scientific evidence as a model for the identification of individuals with learning disabilities. *Journal of Learning Disabilities, 38*(6), 525-531. doi: 10.1177/00222194050380060801
- Mather, N., & Gregg, N. (2006). Specific learning disabilities: Clarifying, not eliminating, a construct. *Professional Psychology: Research and Practice, 37*(1), 99–106. doi:10.1037/0735-7028.37.1.99
- McCann, C. (2014). *Federal funding for students with Disabilities: The evolution of federal special education finance in the United States*. Retrieved from New

America website: https://static.newamerica.org/attachments/735-federal-funding-for-students-with-disabilities/IDEA_6_25_2014_FINAL.pdf

- McKenzie, R. G. (2010). The insufficiency of response to intervention in identifying gifted students with learning disabilities, *Learning Disabilities Research and Practice, 25*(3), 161–168. doi: 10.1111/j.1540-5826.2010.00312.x
- Mellard, D. F., Deshler, D. D., & Barth, A. (2004). LD identification: It's not simply a matter of building a better mousetrap. *Learning Disability Quarterly, 27*(4), 229–242. doi:10.2307/1593675
- Morgan, P. L., Farkas, G., Hillemeier, M. M., Mattison, R., Maczuga, S., Li, H., & Cook, M. (2015). Minorities are disproportionately underrepresented in special education: Longitudinal evidence across five disability conditions, *Educational Researcher, 44*(5), 278-292. doi: 10.3102/0013189X15591157
- National Center for Education Statistics (2015). The Condition of Education. https://nces.ed.gov/programs/coe/indicator_cgg.asp
- No Child Left Behind Act of 2001, Pub. L. No. 107-110
- Noell, G. H., & Gansle, K. A. (2009). Moving from good ideas in educational systems change to sustainable program implementation: Coming to terms with some of the realities. *Psychology in the Schools, 46*(1), 78-88. doi: 10.1002/pits.20355
- Paris, S. G., & Jacobs, J. E. (1984). The benefits of informed instruction for children's reading awareness and comprehension skills. *Child Development, 55*(6), 2083-2093. Retrieved from <http://www.jstor.org/stable/1129781>

- Paris, S. G., Wixson, K. K., & Palinesar, A. S. (1986). Instructional approaches to reading comprehension. *Review of Research in Education, 13*, 91-128. Retrieved from <http://www.jstor.org/stable/1167220>
- Reynolds, C. R., & Shaywitz, S. E. (2009). Response to Intervention: Ready or not? Or, from wait-to-fail to watch-them-fail. *School Psychology Quarterly, 24*(2), 130–145. doi:10.1037/a0016158
- Roots, R. I. (2004). When laws backfire: Unintended consequences of public policy. *American Behavioral Scientist, 47*(2), 1376-1394. doi:10.1177/0002764204265339
- Rutter, M., & Yale, W. (1975). The concept of specific reading retardation. *Journal of Child Psychology and Psychiatry, 16*, 181-187. doi/10.1111/j.1469-7610.1975.tb01269.x/pdf
- Scull, J., & Winkler, A. M. (2011). Shifting Trends in Special Education. Thomas Fordam Institute. Retrieved from <papers3://publication/uuid/90430FD2-8219-4ECE-B705-34366572BC96>
- Skiba, R. J., Simmons, A. D., Ritter, S., Gibb, A.C., Rausch, M.K., Cuadrado, J., & Chung, C-G. (2008). Achieving equity in special education: History, Status, and current challenges. *Exceptional Children, 74*(3), 264-288. Retrieved from <http://ecx.sagepub.com/content/74/3/264.full.pdf>
- Singer, J.D., & Willett, J.B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. New York, New York: Oxford University Press, Inc.
- Solmon, L.C. (2003, December 10). Education policy ‘Lag Time’. *Education Week*, p. 34

- Spear-Swerling, L., & Sternberg, R. J. (1996). *Off track: When poor readers become "learning disabled"*. Boulder, Colorado: Westview Press, Inc.
- Speece, D. L., Palombo, K., & Burho, J. (2013). From FAPE to FEPE: Toward an excellent public education for children and youth with learning disabilities. In H. Swanson, K. Harris, & S. Graham (Eds.), *Handbook of Learning Disabilities* (pp. 15-32). New York, New York: The Guilford Press
- Townsend, N. L. (2006). Framing a ceiling as a floor: The changing definition of learning disabilities and the conflicting trends in legislation affecting learning disabled students. Harvard Law School Student Scholarship Services, Paper 10. Retrieved from http://lsr.nellco.org/harvard_students/10
- U.S. Department of Commerce. (2015). U.S. Census Bureau. Retrieved from <https://www.census.gov>
- U.S. Office of Education. (1968). First annual report of National Advisory Committee on Handicapped Children. Washington, DC: U.S. Department of Health, Education, and Welfare
- U.S. Department of Education, National Center for Education Statistics. (2015). *Digest for Education Statistics, 2013* (NCES 2015-011), Chapter 2. Retrieved from <https://nces.ed.gov/fastfacts/display.asp?id=64>
- VanDerHeyden, A. M., Witt, J. C., & Barnett, D. W. (2005). The emergence and possible futures of response to intervention. *Journal of Psychoeducational Assessment, 23*, 339-361. doi: 10.1177/073428290502300404
- VanDerHeyden, A. M., Witt, J. C., & Gilbertson, D. (2007). A multi-year evaluation of the effects of a Response to Intervention (RTI) model on identification of children

- for special education. *Journal of School Psychology, 45*(2), 225–256. doi: 10.1016/j.jsp.2006.11.004
- Vaughn, S., & Fuchs, L. S. (2003). Redefining learning disabilities as inadequate response to instruction: The promise and potential problems. *Learning Disabilities Research & Practice, 18*(3), 137-146. doi: 10.1111/1540-5826.00070
- Vaughn, S., & Fuchs, L. S. (2006). Response to “Competing Views: A dialogue on response to intervention.” *Assessment for Effective Intervention, 32*(1), 62–64. doi:10.1177/15345084060320010901
- Velicer, W. F., & Fava, J. L. (2003). Time Series Analysis. In J. Schinka & F. Velicer (Eds.), *Research Methods in Psychology* (pp. 581-606). Volume 2, *Handbook of Psychology*. Retrieved from https://www.researchgate.net/profile/Wayne_Velicer/publication/229633091_Time_Series_Analysis/links/0912f50abcbec3c6bb000000.pdf
- Wanzek, J., & Vaughn, S. (2011). Is a three-tier reading intervention model associated with reduced placement in special education? *Remedial and Special Education, 32*(2), 167-175, doi: 10.1177/0741932510361267
- Wells, A. S., & Crain, R. L. (1994). Perpetuation theory and the long-term effects of school desegregation. *Review of Educational Research, 64*(4), 531-555. Retrieved from <http://rer.sagepub.com/content/64/4/531.full.pdf>
- Wixson, K. (2011). A Systemic View of RTI Research: Introduction to the Special Issue. *The Elementary School Journal, 111*(4), 503–510. doi:10.1163/_afco_asc_2291
- Wong, M., Cook, T. D., & Steiner, P. M. (2009). No Child Left Behind: An interim evaluation of its effects on learning using two interrupted time series each with its

own non-equivalent comparison series. *Institute for Policy Research (Documento de trabajo 09-11)*, 18. Retrieved from <http://www.ipr.northwestern.edu/publications/docs/workingpapers/2009/IPR-WP-09-11.pdf>

Wright, P.W.D., Wright, P.D., & Heath, S.W. (2009). *Wrightslaw: No child left behind*. Hartfield, Virginia: Harbor House Law Press.

Ysseldyke, J. (2005). Assessment and decision making for students with learning disabilities: What if this is as good as it gets? *Learning Disability Quarterly*, 28(2), 125-128. Retrieved from <http://www.ccira.org/colorado-reading-journal.html>

Zirkel, P. A. (2013). The trend in SLD enrollments and the role of RtI. *Journal of Learning Disabilities*, 46(5), 473-479. doi: 10.1177/0022219413495297

Zirkel, P. A., & Krohn, N. (2008). RTI after IDEA: A survey of state laws. *Teaching Exceptional Children*, 40, 71–73. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ849814&site=ehostlive\nhttp://www.cec.sped.org/Content/NavigationMenu/Publications2/TEACHINGExceptionalChildren/default.htm>

Zirkel, P. A., & Thomas, L. B. (2010a). State laws and guidelines for implementing RTI. *Council for Exceptional Children*, 43(1), 60–73. Retrieved from <https://libproxy.uccs.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=53739452&site=ehost-live>

Zirkel, P. A., & Thomas, L. B. (2010b). State laws for RTI: An updated snapshot.

Council for Exceptional Children, 42(3), 56–63. Retrieved from

<http://tcx.sagepub.com/content/42/3/56.full.pdf>

Appendix A

Extract from IDEA 2004 Regulations Issued August 2006

Additional Procedures for Identifying Children With Specific Learning Disability

§ 300.307 Specific learning disabilities.

(a) *General.* A State must adopt, consistent with § 300.309, criteria for determining whether a child has a specific learning disability as defined in § 300.8(c)(10). In addition, the criteria adopted by the State—

- (1) Must not require the use of a severe discrepancy between intellectual ability and achievement for determining whether a child has a specific learning disability, as defined in § 300.8(c)(10);
- (2) Must permit the use of a process based on the child's response to scientific, research-based intervention; and
- (3) May permit the use of other alternative research-based procedures for determining whether a child has a specific learning disability, as defined in § 300.8(c)(10).

(b) *Consistency with State criteria.* A public agency must use the State criteria adopted pursuant to paragraph (a) of this section in determining whether a child has a specific learning disability.

(Authority: 20 U.S.C. 1221e-3; 1401(30); 1414(b)(6))

§ 300.308 Additional group members.

The determination of whether a child suspected of having a specific learning disability is a child with a disability as defined in § 300.8, must be made by the child's parents and a team of qualified professionals, which must include—

- (a)
 - (1) The child's regular teacher; or
 - (2) If the child does not have a regular teacher, a regular classroom teacher qualified to teach a child of his or her age; or
 - (3) For a child of less than school age, an individual qualified by the SEA to teach a child of his or her age; and
- (b) At least one person qualified to conduct individual diagnostic examinations of children, such as a school psychologist, speech-language pathologist, or remedial reading teacher.

(Authority: 20 U.S.C. 1221e-3; 1401(30); 1414(b)(6))

§ 300.309 Determining the existence of a specific learning disability.

(a) The group described in § 300.306 may determine that a child has a specific learning disability, as defined in § 300.8(c)(10), if—

(1) The child does not achieve adequately for the child's age or to meet State-approved grade-level standards in one or more of the following areas, when provided with learning experiences and instruction appropriate for the child's age or State-approved grade-level standards:

- (i)** Oral expression.
- (ii)** Listening comprehension.
- (iii)** Written expression.
- (iv)** Basic reading skill.
- (v)** Reading fluency skills.
- (vi)** Reading comprehension.
- (vii)** Mathematics calculation.
- (viii)** Mathematics problem solving.

(2)

- (i)** The child does not make sufficient progress to meet age or State-approved grade-level standards in one or more of the areas identified in paragraph (a)(1) of this section when using a process based on the child's response to scientific, research-based intervention; or
- (ii)** The child exhibits a pattern of strengths and weaknesses in performance, achievement, or both, relative to age, State-approved grade-level standards, or intellectual development, that is determined by the group to be relevant to the identification of a specific learning disability, using appropriate assessments, consistent with § 300.304 and § 300.305; and

(3) The group determines that its findings under paragraphs (a)(1) and (2) of this section are not primarily the result of—

- (i)** A visual, hearing, or motor disability;
- (ii)** Mental retardation;
- (iii)** Emotional disturbance;
- (iv)** Cultural factors;
- (v)** Environmental or economic disadvantage; or
- (vi)** Limited English proficiency.

(b) To ensure that underachievement in a child suspected of having a specific learning disability is not due to lack of appropriate instruction in reading or math, the group must consider, as part of the evaluation described in § 300.304 through § 300.306—

- (1)** Data that demonstrate that prior to, or as a part of, the referral process, the child was provided appropriate instruction in regular education settings, delivered by qualified personnel; and
- (2)** Data-based documentation of repeated assessments of achievement at reasonable intervals, reflecting formal assessment of student progress during instruction, which was provided to the child's parents.

(c) The public agency must promptly request parental consent to evaluate the child to determine if the child needs special education and related services, and must adhere to the timeframes described in § 300.301 and § 300.303, unless extended by mutual written agreement of the child's parents and a group of qualified professionals, as described in § 300.306(a)(1)—

- (1) If, prior to a referral, a child has not made adequate progress after an appropriate period of time when provided instruction, as described in paragraphs (b)(1) and (b)(2) of this section; and
- (2) Whenever a child is referred for an evaluation.

(Authority: 20 U.S.C. 1221e-3; 1401(30); 1414(b)(6))

§ 300.310 Observation.

- (a) The public agency must ensure that the child is observed in the child's learning environment (including the regular classroom setting) to document the child's academic performance and behavior in the areas of difficulty.
- (b) The group described in § 300.306(a)(1), in determining whether a child has a specific learning disability, must decide to—
 - (1) Use information from an observation in routine classroom instruction and monitoring of the child's performance that was done before the child was referred for an evaluation; or
 - (2) Have at least one member of the group described in § 300.306(a)(1) conduct an observation of the child's academic performance in the regular classroom after the child has been referred for an evaluation and parental consent, consistent with § 300.300(a), is obtained.
- (c) In the case of a child of less than school age or out of school, a group member must observe the child in an environment appropriate for a child of that age.

(Authority: 20 U.S.C. 1221e-3; 1401(30); 1414(b)(6))

§ 300.311 Specific documentation for the eligibility determination.

- (a) For a child suspected of having a specific learning disability, the documentation of the determination of eligibility, as required in § 300.306(a)(2), must contain a statement of—
 - (1) Whether the child has a specific learning disability;
 - (2) The basis for making the determination, including an assurance that the determination has been made in accordance with § 300.306(c)(1);
 - (3) The relevant behavior, if any, noted during the observation of the child and the relationship of that behavior to the child's academic functioning;
 - (4) The educationally relevant medical findings, if any;
 - (5) Whether—
 - (i) The child does not achieve adequately for the child's age or to meet State-approved grade-level standards consistent with § 300.309(a)(1); and
 - (ii)
 - (A) The child does not make sufficient progress to meet age or State-approved grade-level standards consistent with § 300.309(a)(2)(i); or
 - (B) The child exhibits a pattern of strengths and weaknesses in performance, achievement, or both, relative to age, State-approved grade level standards or intellectual development consistent with

§ 300.309(a)(2)(ii);

- (6) The determination of the group concerning the effects of a visual, hearing, or motor disability; mental retardation; emotional disturbance; cultural factors; environmental or economic disadvantage; or limited English proficiency on the child's achievement level; and
- (7) If the child has participated in a process that assesses the child's response to scientific, research-based intervention—
- (i) The instructional strategies used and the student-centered data collected; and
 - (ii) The documentation that the child's parents were notified about—
 - (A) The State's policies regarding the amount and nature of student performance data that would be collected and the general education services that would be provided;
 - (B) Strategies for increasing the child's rate of learning; and
 - (C) The parents' right to request an evaluation.
- (b) Each group member must certify in writing whether the report reflects the member's conclusion. If it does not reflect the member's conclusion, the group member must submit a separate statement presenting the member's conclusions.

(Authority: 20 U.S.C. 1221e-3; 1401(30); 1414(b)(6))

§ 300.8 Child with a Disability

(a) General.

- (1) Child with a disability means a child evaluated in accordance with Sec. Sec. 300.304 through 300.311 as having mental retardation, a hearing impairment (including deafness), a speech or language impairment, a visual impairment (including blindness), a serious emotional disturbance (referred to in this part as "emotional disturbance"), an orthopedic impairment, autism, traumatic brain injury, an other health impairment, a specific learning disability, deaf-blindness, or multiple disabilities, and who, by reason thereof, needs special education and related services.
- (2)
- (i) Subject to paragraph (a)(2)(ii) of this section, if it is determined, through an appropriate evaluation under Sec. Sec. 300.304 through 300.311, that a child has one of the disabilities identified in paragraph (a)(1) of this section, but only needs a related service and not special education, the child is not a child with a disability under this part.
 - (ii) If, consistent with Sec. 300.39(a)(2), the related service required by the child is considered special education rather than a related service under State standards, the child would be determined to be a child with a disability under paragraph (a)(1) of this section.
- (b) Children aged three through nine experiencing developmental delays. Child with a disability for children aged three through nine (or any subset of that age range, including ages three through five), may, subject to the conditions described in Sec. 300.111(b), include a child—

- (1) Who is experiencing developmental delays, as defined by the State and as measured by appropriate diagnostic instruments and procedures, in one or more of the following areas: physical development, cognitive development, communication development, social or emotional development, or adaptive development; and
- (2) Who, by reason thereof, needs special education and related services.
- (c) Definitions of disability terms. The terms used in this definition of a child with a disability are defined as follows:
- (1)
- (i) Autism means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences.
- (ii) Autism does not apply if a child's educational performance is adversely affected primarily because the child has an emotional disturbance, as defined in paragraph (c)(4) of this section.
- (iii) A child who manifests the characteristics of autism after age three could be identified as having autism if the criteria in paragraph (c)(1)(i) of this section are satisfied.
- (2) Deaf-blindness means concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational needs that they cannot be accommodated in special education programs solely for children with deafness or children with blindness.
- (3) Deafness means a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification that adversely affects a child's educational performance.
- (4)
- (i) Emotional disturbance means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance:
- (A) An inability to learn that cannot be explained by intellectual, sensory, or health factors.
- (B) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.
- (C) Inappropriate types of behavior or feelings under normal circumstances.
- (D) A general pervasive mood of unhappiness or depression.
- (E) A tendency to develop physical symptoms or fears associated with personal or school problems.
- (ii) Emotional disturbance includes schizophrenia. The term does not apply to children who are socially maladjusted, unless it is determined that they have an emotional disturbance under paragraph (c)(4)(i) of this section.

(5) Hearing impairment means an impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance but that is not included under the definition of deafness in this section.

(6) Mental retardation means significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance.

(7) Multiple disabilities means concomitant impairments (such as mental retardation-blindness or mental retardation-orthopedic impairment), the combination of which causes such severe educational needs that they cannot be accommodated in special education programs solely for one of the impairments. Multiple disabilities does not include deaf-blindness.

(8) Orthopedic impairment means a severe orthopedic impairment that adversely affects a child's educational performance. The term includes impairments caused by a congenital anomaly, impairments caused by disease (e.g., poliomyelitis, bone tuberculosis), and impairments from other causes (e.g., cerebral palsy, amputations, and fractures or burns that cause contractures).

(9) Other health impairment means having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that--

(i) Is due to chronic or acute health problems such as asthma, attention deficit disorder or attention deficit hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, sickle cell anemia, and Tourette syndrome; and

(ii) Adversely affects a child's educational performance.

(10) Specific learning disability.

(i) General. Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in 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.

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

(11) Speech or language impairment means a communication disorder, such as stuttering, impaired articulation, a language impairment, or a voice impairment, that adversely affects a child's educational performance.

(12) Traumatic brain injury means an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child's educational performance. Traumatic brain injury applies to open or closed head injuries resulting in impairments in one or more areas, such as cognition; language; memory; attention; reasoning; abstract thinking; judgment; problem-solving; sensory, perceptual, and motor abilities; psychosocial behavior; physical

functions; information processing; and speech. Traumatic brain injury does not apply to brain injuries that are congenital or degenerative, or to brain injuries induced by birth trauma.

(13) Visual impairment including blindness means an impairment in vision that, even with correction, adversely affects a child's educational performance. The term includes both partial sight and blindness.

(Authority: 20 U.S.C. 1401(3); 1401(30))