Georgia Southern University
Digital Commons@Georgia Southern

Electronic Theses and Dissertations | Graduate Studies, Jack N. Averitt College of

Spring 2014

Identification of Specific Learning Disabilities: Georgia School Psychologists' Perceptions

Marie T. Underwood

Follow this and additional works at: https://digitalcommons.georgiasouthern.edu/etd

Part of the Educational Assessment, Evaluation, and Research Commons, Educational Leadership Commons, Educational Psychology Commons, and the Special Education and Teaching Commons

Recommended Citation
Underwood, Marie T., "Identification of Specific Learning Disabilities: Georgia School Psychologists' Perceptions" (2014). *Electronic Theses and Dissertations*. 1044.
https://digitalcommons.georgiasouthern.edu/etd/1044

This dissertation (open access) is brought to you for free and open access by the Graduate Studies, Jack N. Averitt College of at Digital Commons@Georgia Southern. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of Digital Commons@Georgia Southern. For more information, please contact digitalcommons@georgiasouthern.edu.

IDENTIFICATION OF SPECIFIC LEARNING DISABILITIES:

GEORGIA SCHOOL PSYCHOLOGISTS' PERCEPTIONS

by

MARIE THERESE UNDERWOOD

(Under the Direction of Teri Denlea Melton)

ABSTRACT

An on-line survey was conducted to investigate the assessment practices and perceptions of 366 practicing school psychologist in the state of Georgia concerning various operational components, and the use of RTI when determining SLD eligibility. Results were analyzed using ordinal logistic regression to determine if psychologists' perceptions could be predicted based on various explanatory variables. Results revealed that a little over half of the respondents preferred assessment of cognitive processing deficits evidenced through patterns of strengths and weaknesses for establishing SLD classification; while well over two-thirds continue to also value analysis of cognitive ability (IQ) scores. Psychologists' assessment practices were consistently predicted based on professional membership affiliation. Perceptions of the use of RTI in the operationalization of SLD, as well as, psychologists' desire and ability to fulfill various leadership roles and responsibilities within RTI programs, were significantly impacted by the quality of the RTI program in the schools that respondents worked. This research begins to answer many questions concerning the perceptions and assessment practices of school psychologists across Georgia. Findings from this study provide important insight into school psychologists' professional practices which is the first step to improving the accuracy, fidelity, and consistency of SLD identification methods.

INDEX WORDS: Eligibility, Response to Intervention, School Psychologist, Special Education, Specific Learning Disability

IDENTIFICATION OF SPECIFIC LEARNING DISABILITIES:

GEORGIA SCHOOL PSYCHOLOGISTS' PERCEPTIONS

by

MARIE UNDERWOOD

B.S. Speech Pathology & Audiology, Idaho State University

M.S. Speech-Language Pathology

ED.S. Leadership and Administration, Lincoln Memorial University

A Dissertation Submitted to the Graduate Faculty of Georgia Southern University in

Partial Fulfillment of the Requirements for the Degree

DOCTOR OF EDUCATION

STATESBORO, GEORGIA

2014

© 2014

Marie Therese Underwood

All Rights Reserved

IDENTIFICATION OF SPECIFIC LEARNING DISABILITIES:

GEORGIA SCHOOL PSYCHOLOGISTS' PERCEPTIONS

by

MARIE THERESE UNDERWOOD

Major Professor: Teri Denlea Melton

Committee: Mohomodou Boncana

Terry Diamanduros

Electronic Version Approved:

May, 2014

DEDICATION

To Old Coot and Maggie, this never would have been started let alone finished without you. Thank you for teaching me how to struggle and to love.

-Molly

ACKNOWLEDGMENTS

The two things I did not realize going into this process were: no one writes something of this magnitude alone, and I am truly blessed with amazing friends and family. My husband Con and children Will and Ellen have provided a level of support, guidance, and love that I could have only found in a devoted family. Unfortunately, throughout this process I have missed important events and not always had the availability I would have liked. Never once did they ask for more than I was able to give. I am grateful for each of them and am well aware this research would not have been completed without them.

The professionals who agreed to serve on my committee provided an amazing level of support and guidance throughout this process. Dr. Mohomodou Boncana, challenged me to establish a well-planned and well-executed methodology. I know I didn't end up where he thought I would, but I would never have gotten here without his direction. Dr. Terry Diamanduros, helped me navigate within a profession that is not my area of study while providing exceptional technical expertise. Finally, my committee chairmen Dr. Teri Melton provided everything I needed just when I needed it. I could write a book on how to support, mentor, and cajole a student through this process based on what she demonstrated to me. I am more grateful than words can say that she is in my life. I look forward to our next chapter.

Lastly, I wish to thank school psychologists across the state of Georgia. What an amazing group of experts make up this profession. The leadership of the professional organizations, GASP and SSTAGE, the entire psychology department of Jackson County Schools, and several individuals, including Debbie Williamson, contributed their time,

talents, and incredible knowledge to this important research. Clearly this is a group of professionals who are prepared and have the expertise to grapple with this complex topic.

TABLE OF CONTENTS

Page

ACKNOWLEDGMENTS…… vii

LIST OF TABLES…….. xii

CHAPTER

1 INTRODUCTION…… 1

Statement of the Problem…… 8

Research Question……... 10

Significance of the Study……. 11

Procedures…… 12

Limitations, Delimitations, and Assumptions…….. 13

Definition of Terms……. 17

Summary……. 20

2 REVIEW OF LITERATURE…… 23

History of Special Education Legislation…… 23

Specific Learning Disabilities……. 25

Special Education Eligibility in Georgia……. 29

Response to Intervention……. 32

The Role of School Psychologist in RTI……. 41

Other Alternative Research-Based Procedures…… 45

School Psychologists' perceptions and practices……..…….. 49

Summary…….. 56

3 METHODOLOGY…… 59

Research Questions…….. 59

Research Design…….. 60

Sample and Sampling……. 64

Instrumentation…… 65

Data Collection…… 69

Data Analysis and Reporting……... 72

Summary……. 74

4 RESULTS.…… 77

Interpreting Ordinal Logistic Outcomes…….. 77

Findings…… 80

Assessment Practices……... 82

RTI and SLD Identification……. 91

Analyzing Cognitive Process to Evaluate PSW…….. 100

Summary…….. 105

5 CONCLUSIONS AND IMPLICATIONS 109

Analysis of Findings…… 111

Discussion of Findings……. 114

Conclusions and Implications…….. 127

Limitations and Recommendations…….. 131

REFERENCES…… 135

APPENDICES

A Letter of Approval to Use Survey Instrument……. 149

B Letter of Invitation to Participate in Survey…… 150

C Survey Instrument…… 151

D Survey Alignment to Research Questions……...…… 171

E Short Answers Regarding Analysis of PSW..……. 178

F Ordinal Logistic Regression Summary Table.…… 183

LIST OF TABLES

Page

Table 1 Demographic Descriptive Statistics……... 82

Table 2 Criteria Selected for Operationalization of SLD…….. 87

Table 3 Ability and Desire to Participate in Various RTI Roles…… 97

Table 4 Factors Improved by RTI……... 98

Table 5 OLR Impact of RTI on various Academic Areas…….. 99

Table 6 Research Based Approach for Analyzing PSW…….. 101

Table 7 Reasons for Not Employing Formal Evaluation of PSW……. 102

Table 8 Techniques Reported for Informal Evaluation of PSW…… 104

CHAPTER 1

INTRODUCTION

Tucker is an enthusiastic first grade student whose favorite subjects are social studies and recess. He avoids reading at home and is willing to get in "trouble" at school to divert attention from the difficulties he is experiencing with learning phonics, recognizing sight words, and reading aloud. Although Tucker's teacher assures his parents at their mid-year conference that he will "catch up," he continues to struggle with reading throughout first grade. During the first semester of second grade, Tucker is tested by the school psychologist. Cognitive testing results reveal that he has a solid average IQ. Further testing of Tucker's reading achievement abilities reveals that although he is reading below grade-level, the "discrepancy" between his IQ and reading achievement scores is not sufficient to meet the state required 20-point discrepancy necessary for him to qualify to receive special education services. Therefore, he completes his second grade year without receiving services while becoming known as a discipline problem who requires frequent office referrals and parent meetings. By third grade Tucker hates school, refuses to read to his parents at home, and has frequent absences because of stomach problems. In spite of help from a tutor, he continues to find reading increasingly frustrating and is not completing his work at school; further, behavior concerns have begun to escalate. Therefore, at the end of third grade, Tucker is retested by the school psychologist. Results reveal that he is still a bright, capable boy with an average IQ. However, following this assessment Tucker is found to have a 20-point discrepancy between his IQ and reading achievement abilities, making him eligible to receive special education services in the

area of learning disability. Tucker's parents are grateful that he will now receive specialized help learning to read.

Tucker's mother has been unemployed for two years and his father was laid-off during his third grade year. A job opportunity in another state requires that the family relocate. After Tucker's special education records arrive from his previous school, the new school invites his parents to attend a conference. Following a review of Tucker's psychological evaluation, the committee informs his parents that he does not qualify for LD services in their state. They explain to his parents that their state requires a 25-point standard-score 'discrepancy' rather than the 20-points required by the state in which they previously had lived (Zirkel & Thomas, 2010). Tucker's parents cannot believe that their son is learning disabled in one state and not in another.

Tucker's parents' frustrating experience is an all-too-familiar scenario in which a student and his parents become discouraged and confused by the various requirements for determining a classification of Specific Learning Disability (SLD), thus qualifying him to receive specialized instruction.

For years, parents, educational leaders, and psychologists struggled to attain federally authorized and subsidized services for Learning Disabled (LD) students (Meyer, 2000). They finally succeeded when the Education of all Handicapped Children Act (PL94-142) was passed in 1975, encompassing appropriate educational services for students with special needs, including those classified as having a specific learning disability (SLD) (Meyer, 2000). Following the enactment of this law, the percent of total public school enrollment served in special education increased by 8.3 percent between the years 1976-77 and 2004-05 (National Center for Education

Statistics, 2012). Much of this increase was attributed to a rise in the percentage of students identified as having a learning disability. Students found eligible to be categorized LD increased from 1.8 percent in 1976-77 to 5.7 percent of the total population in 2004-05 (Digest of Educational Statistics, 2011), allowing for a mere 2.6 percent increase in all twelve other special education classification areas combined.

Today, students with learning disabilities make up the largest single category of special needs students. An estimated 4 to7 percent of all school-age students worldwide have been identified as having a significant learning disability (Buttner & Hasselhorn, 2011). According to the U.S. Department of Education (USDA, 2010), well over one-third (38 percent) of students who qualify to receive special education services are classified as SLD. This establishes SLD classification, by far, the largest category of special education in the U.S. In 2011, the Georgia Department of Education reported that 30 percent of all students who qualified to receive special education services were classified as learning disabled (GaDOE).

Surprisingly, standardized pre-referral interventions, assessment, and identification procedures for students with specific learning disabilities have yet to be established. Varying operational definitions and criteria have led to significant inconsistencies in LD prevalence between states and sometimes even between districts within states (Fuchs & Fuchs, 2006). Professionals such as school psychologists and educational leaders continue to struggle almost daily with this lack of a standard definition of LD and the absence of objective diagnostic criteria. The Individuals with Disability Education Improvement Act (IDEIA) of 2004 established general processes for identifying at-risk students and ruling out external factors that may contribute to

academic failure. Federal Regulations (34 CFR § 300.307-309) established in 2006, required that states establish criteria for classifying a child as SLD according to three basic criteria; (a) the state must not require the use of a severe discrepancy between intellectual ability and achievement; (b) must permit the use of a process based on a child's response to scientific, research-based interventions; and (c) may permit the use of other alternative research-based procedures for determining whether a child has a SLD (Flannagan & Alfonso, 2011). However, the interpretation of these broad-spectrum recommendations has continued to result in multiple approaches to assessment and identification procedures (VanDerHeyden, Witt, & Gilbertson, 2007).

Over the last decade, one promising alternative to the IQ-Achievement discrepancy model has emerged. Response to Intervention (RTI), a "process based on the child's response to scientific, research-based intervention" (IDEIA Act, 2006, §300.307[a][2],) has arisen as this alternative. Generally, RTI is a multi-tiered cyclical process (Buttner & Hasselhorn, 2011). Initially, at-risk students are identified through a screening process which incorporates standardized or non-standardized assessments. Identified at-risk students receive well-established, research-based intervention for a fixed period of time. Typically, many of these students demonstrate substantial progress and require no further support. Students who do not benefit from interventions are provided more intense interventions which generally occur in very small groups or individually for a fixed period of time. Following the second and third intervention period(s), progress is again examined. Students who continue to not benefit from intensified interventions with progress monitoring data indicating they do not appear to be closing the academic gap with their same grade peers are referred for

special education evaluation or service. In theory, non-responders are the ones who are most likely to develop learning disabilities (Buttner & Hasselhorn, 2011).

Current literature outlining the basic construct and methodology for establishing a Response to Intervention (RTI) program is available. Nevertheless, concerns persist regarding the limited consistency of RTI practices across schools, districts, and states (Berkeley, Bender, Peaster, Gregg, & Saunders, 2009; Hale et al., 2010). RTI programs differ in the following ways: the number of levels or tiers incorporated throughout the process; qualifications of the person responsible for data analysis, interpretation, and establishing interventions; qualification and specialized skills of the person responsible for delivering intervention services; and, whether the RTI process is considered a precursor to a formal evaluation for SLD eligibility, or in essence *the* comprehensive SLD assessment and classification process (Fuchs, Mock, Morgan, & Young, 2003).

The third option included in the IDEIA regulations for identifying students with SLD (§ 300.307[a]) was the use of *alternative research-based procedures*. Similar to other options for the classification of SLD, this alternative remains quite vague (Flanagan & Alfonso, 2011). Many researchers have interpreted the operationalization of alternative research based procedures to be the evaluation for a *pattern of strengths and weaknesses* (PSW), using tests of academic achievement, cognitive abilities, and neuropsychological processes for the identification of SLD (Hale et al., 2008; Zirkel & Thomas, 2010). The PSW approach to the classification of SLD includes three main variables, an area of low cognitive ability and low achievement, as well as, an

identified area of high cognitive ability (Steubing, Fletcher, Branum-Martin, & Francis, 2012).

Several empirically-based approaches for evaluating profiles of strengths and weaknesses in cognitive skills have been proposed. Within each model, multiple cognitive skills are assessed with the goal of discovering a processing weakness that is related to an achievement domain (Stuebing, Fletcher, Branum, & Francis, 2012). Importantly, for the identification of SLD to be sound, the weakness must exist within a set of cognitive and academic strengths (Stuebing et al., 2012; Dekcer, Hale, & Flanagan, 2013).

Within the state of Georgia, RTI is currently required as the means to assess the underachievement of a student prior to determining eligibility for a SLD. In addition to RTI, Georgia law mandates that an assessment of cognitive processes must also occur prior to determining special education classification of SLD. Additionally, Georgia law requires that "the child exhibits a pattern of strengths and weaknesses in performance, achievement, or both, relative to age, state-approved grade level standards, and intellectual development." (Georgia Special Education Rules Implementation Manual, Part 2, p. 72).

The school psychologist is a significant stakeholder in the implementation of RTI, the assessment of cognitive processes, and the interpretation of multiple forms of outcome data for establishing SLD eligibility. Therefore, further research regarding the consistency of methods and practices of school psychologists across the state is needed. An understanding of school psychologists' current practices and beliefs regarding learning disabilities, as well as their assessment and identification processes,

is the first step in achieving consistent identification of students presenting with a possible learning disability. More importantly, failing to capture and understand the perceptions of practicing psychologists could result in low acceptability and fidelity of established assessment and SLD identification methods (Machek & Nelson, 2010). At this time, a void in research exists concerning Georgia psychologists' perceptions and beliefs regarding the operational definition (i.e., classification criteria) used to establish SLD eligibility.

Empirical research indicates that leaving behind the IQ-Achievement discrepancy method considered best practice by hundreds of thousands of professionals for more than a quarter-century has proven to be challenging and somewhat controversial (Fuchs et al., 2003; Hughes & Dexter, 2011). Furthermore, moving to the implementation of an RTI model and the assessment of cognitive processing abilities to evaluate for *patterns of strengths and weaknesses* with limited definitive direction has also been a challenge (Fuchs et al., 2003; Hughes & Dexter, 2011). However, at this time, Georgia law clearly indicates that IQ-Achievement discrepancy is no longer an acceptable assessment practice for determining SLD eligibility.

This study seeks to understand the genuine assessment and classification practices of school psychologists across the state of Georgia, as well as, explore if the likelihood of specific perceptions occurring can be predicted based on a variety of independent variables (e.g., population served, RTI vs. non-RTI school, years since completion of last degree, and membership in a state/national professional organization). The first step to operationalizing SLD is to develop a thorough understanding of the problem; this includes asking direct service providers (e.g.,

practicing school psychologists) to identify the factors, values, and beliefs within the context of their unique educational environment that impact and influence their assessment practices (NRCLD, 2007).

For the purposes of this study, the literature will be reviewed to achieve an understanding of (1) policies and initiatives which lead to the reauthorization of IDEIA and ultimately the provision for the recommended use of RTI, (2) the history and complexity of classification and identification of SLD, (3) empirical literature supporting and opposing the RTI model, (4) review of the *third option* available under IDEIA, and finally, (5) the prominent role played by school psychologists throughout the RTI and cognitive evaluation process within the SLD domain.

Statement of the Problem

Although the conceptual definition of SLD has basically remained unchanged since it was formalized as part of the Education of all Handicapped Children Act (EHCA) in 1977, the operational definition (i.e., standards of classification) for the identification of students as LD changed with the reauthorization of IDEIA. The IDEIA reauthorization act explicitly states that the use of IQ-Achievement discrepancy model is not required. Furthermore, the law actively encourages the use of an RTI approach, as well as providing a third option; the use of other alternative research-based procedures, for SLD identification. It is important to note, however, that the wording of the new law provides no specific procedures (i.e., operational definition) for determining SLD eligibility. Therefore, the responsibility for operationally defining LD falls to each Local Education Agency (LEA).

Georgia law mandates RTI, the assessment of psychological processes, as well as, psychologists' use of professional judgment based on various forms of evidence to conclude that the child exhibits a *pattern of strengths and weaknesses* in performance, achievement, or both prior to determining an SLD classification. Within Georgia's implementation manual, general examples of patterns of strength and weakness have been outlined. However, similar to other areas in IDEIA, PSW have not been operationally defined within Georgia's special education regulations. As a result, this judgment is likewise left to the discretion of each LEA. It is important to develop an understanding of psychologist's perceptions regarding these operational definitions and how they contribute to the identification of students with SLD. This knowledge could contribute to state education policy, identifying and defining continuing education needs across the state, as well as contributing to the knowledge base of the school psychologist profession.

School psychologists are viewed as the leading experts in the area of assessment and identification of students with SLD. Surveying school psychologists within the state of Georgia is important because of the unique requirements of Georgia law, as well as, psychologists' prominent role in RTI and the SLD classification process. The purpose of this study is to: (1) provide insights into the perspectives of practicing Georgia school psychologists regarding various operational components currently used to determine SLD eligibility in the state of Georgia; (2) develop an understanding of practicing psychologists perceptions regarding the use of RTI when establishing SLD eligibility; (3) analyze the impact of various explanatory variables on psychologist's perceptions; and (4) determine whether Georgia school psychologists' are employing empirically-based

models when assessing cognitive processes and evaluating for *patterns of strength and weaknesses* as part of the SLD eligibility process.

Research Questions

This research was be guided by the following question: What are the perceptions, practices, and operational components used by practicing Georgia school psychologists for determining eligibility under the classification of specific learning disability in all eight domain areas (oral expression, listen, think, speak, read, write, spell, mathematical problem solving, and/or calculation)? In addition, the following sub-questions helped clarify the results:

1. What is the probability that the assessment processes perceived as important by Georgia school psychologists for establishing SLD eligibility can be accounted for by various explanatory variables including: population served, RTI vs. non-RTI school, years since completion of last degree, and membership in a state/national professional organization?
2. What is the probability that the perceptions of Georgia school psychologists' regarding the use of RTI for establishing SLD eligibility can be can be accounted for by various explanatory variables including: population served, RTI vs. non-RTI school, years since completion of last degree, and membership in a state/national professional organization?
3. Are practicing Georgia school psychologists incorporating empirically-based models in their evaluation of *patterns of strengths and weaknesses* as part of the SLD eligibility process?

Significance of the Study

Soliciting the opinions and perceptions of Georgia school psychologists' regarding the classification and identification of students with specific learning disabilities is essential for several reasons. First, this study will add to the extremely limited body of research soliciting the opinions and understanding the genuine practices of direct service providers, the school psychologist. If district-level leaders and policy makers do not consider the insights, attitudes, and beliefs of individuals making assessment and eligibility decisions on a daily basis, it is doubtful that advances in identification processes will be embraced or faithfully executed.

Second, gaining an understanding of psychologists' perceptions of assessment practices and classification criteria currently included for establishing SLD eligibility is important given the flexibility permitted in IDEIA as well as the unique requirements of Georgia Law. This information could prove helpful in guiding future policy in the area of operational components permitted in the SLD classification process within the state of Georgia. Currently, the leadership at Georgia Association of School psychologists (GASP) has begun the process of educating and preparing their members to vote on a recommended state version of SLD identification for Georgia. GASP has expressed a keen interest in this research to help guide this process and better understand the current practices of school psychologists' statewide.

Lastly, the results of this study will provide insight into institutional training programs and professional development needs of practicing psychologists within the state of Georgia. Given some of the unique classification requirements within Georgia's current law, research outcome from this study could also provide direction to state and

local educational leaders concerning areas in needed of further instruction as well as targeted continuing education recipients based on demographic correlations (i.e., years of experience, district make-up, and grade levels served).

Procedures

To answer proposed research questions, the researcher designed an ordinal logistic regression research study. Given that the dependent variable (perceptions) is primarily measured using a four-point Likert scale (categorical dependent variables with ordered levels); the researcher determined the use of ordinal logistic regression would have greater statistical power than multinomial logistic regression (Garson, 2012). This study will explore the perceptions of practicing Georgia school psychologists regarding the operational components, assessment practices, and the use of RTI for determining SLD classification. Additionally, this study will explore if the probability of psychologists' perceptions and practices occurring can be accounted for by various explanatory variables (e.g., population served, RTI vs. non-RTI school, years since completion of last degree, and membership in a state/national professional organization). Finally, this study will provide an understanding of psychologists' use of empirically-based models when assessing cognitive processes and evaluating for *patterns of strength and weaknesses* as well as determine if a relationship exists with established independent variables.

Given that the outcomes of interest in this research (e.g., school psychologists' perceptions) are measured primarily on a four-point ordinal scale, the researcher determined that the most appropriate design would be ordinal logistic regression. The use of traditional ordinal least squares technique would require ordinal scale data to be

treated as continuous (Liu, 2008) and the use of the traditional binary logistic regression model would require the data be combined into dichotomous ordinal categories (DeCarlo, 2003). The researcher determined that ignoring the distinct ordinal nature of the dependent variable would result in loss of useful information and potentially lead to misleading results. Therefore, the use of ordinal logistic regression design provided a broader analysis of ordinal categorical dependent variables (Liu, 2008). Ordinal logistic regression design allowed the researcher to compare the probability of a particular response occurring at or above a particular level of the ordinal response variable as a function of one or more of the predictor variable(s) (DeCarlo, 2003; Liu, 2008).

Limited research soliciting school psychologists' assessment practices and perceptions of the use of RTI, and operational components necessary for determining SLD eligibility is available at this time. Of the available research, three studies (e.g., Mechek & Nelson, 2007; Mechek & Nelson, 2010; Speece & Shekita, 2002) utilized the same core survey to conduct their research. For this reason, access to the survey originally conducted by Speece and Shekita (2002) and modified by Mechek and Nelson (2007, 2010) was successfully acquired for this study. This research will incorporate a modified version of Mechek and Nelson's (2007) survey instrument as the basis for this study. A web-based survey was chosen as the means for data collection because it will be the most efficient manner to invite practicing school psychologists within the state of Georgia to participate (deVaus, 2002).

Limitations, Delimitations, and Assumptions

In order to avoid misconceptions and misinterpretation of research data and findings, it is imperative to acknowledge constraints present within research. Research

inherently requires the investigator to delimit the study in order to enable a specific focus. Assumptions about the research process are also, at times, necessary to allow research to progress. Therefore, it is assumed that limitations that curtail the generalizability of research results will exist. The limitations, delimitations, and assumptions inherent to this research are outlined within this section.

One limitation of this study is the lack of availability of e-mail access for potential participants. At this time the Georgia Department of Education reports that a comprehensive list of all practicing school psychologists throughout Georgia does not exist. Although, every effort was made by the researcher to compile a comprehensive list using a variety of sources, some practicing psychologists were not be identified. This research project will be most effective if the population is made up of most if not all practicing school psychologists' and not limited simply to psychologists' who are members of national or state professional organizations. Furthermore, this research may be limited by the type of responders who may self-select based on their knowledge and/or interest in the topic. Therefore, the nature of the survey instrument may result in responders who are interested and informed on the controversy surrounding the operationalization of Specific Learning Disabilities (SLD). However, as the researcher made personal contacts throughout the state to request e-mail addresses, psychologists' awareness of the upcoming survey has been heightened. This may result in an increased response rate.

An additional limitation of this study could potentially be sample size. Given the reported number of practicing school psychologists in the state (N=769) a minimum sample size of 270 is required for generalizability across the state. Moreover, a variety of

demographic variables (e.g., school district characteristics, membership of years in professional organization) will need to be considered to allow for results to be generalized. Additionally, this researcher was required to weigh the benefits of random sampling procedures vs. limiting generalizability due to the use of a self-selected sample. Although utilizing random sampling would be optimal, this researcher chose to include a self-selected sample in an effort to meet sample size requirements. Several strategies have been employed to maximize the response rate of psychologists. These include: (1) an e-mailed invitation will be sent to each potential respondent with an explanation of the survey and the URL link; (2) confidentiality and anonymity will be ensured and outlined in the invitation; (3) results will be made available to all respondents; (4) respondents will have the option to save a partially completed survey and return at a later day/time to complete; and (5) follow up reminder to all non- or partial-responders will occur at two weeks, and again at four weeks after the initial survey has been sent (deVaus, 2002).

This research is delimited to practicing school psychologists within the state of Georgia. Although this minimizes generalizability to other states, the unique features of Georgia special education law naturally limit generalizability to other states. This research could, however, be generalizable to states that are considering changes in special education policy or law regarding the operationalization of specific learning disabilities.

This study was also delimited to perceptions of school psychologists' regarding the classification and identification of students with specific learning disabilities. Responses of perceptions will be delimited by responder's knowledge of Georgia special education law and classification/definitional issued surrounding SLD. Survey questions have been constructed with brief explanations of these specific concepts as appropriate to

minimize this delimitation. Additionally, responders are questioned regarding their knowledge of the law and classification issues prior to answering. Therefore, this delimitation can be taken into consideration during the data analysis process.

Three main assumptions have been made throughout this research project. First, it is assumed that following the validation process, the instrument should measure what it is theoretically constructed to measure. To minimize this assumption, construct validity will be increased by an initial review and revisions of the survey instrument with two experts on Georgia SLD guidelines, RTI, and assessment for PSW, followed by a pilot study with all practicing psychologists' within one Georgia school district (N=5). The second assumption of this research is that participants will be honest, open, and forthright in their survey responses. The complete anonymous nature of the survey should help to minimize this assumption. The final assumption is that participants will have the opportunity to determine if they will participate in the e-mailed survey. At this time, most school districts have robust filters in place to minimize spam. Therefore, the researcher will be unaware if a psychologist receives the survey request or if it is sent to spam. This assumption will be minimized in part by the requirement of the researcher to conduct personal contacts with a minimum of one individual in each district to obtain e-mail addresses. Heightened awareness of the survey request as well as one successful e-mail contact should increase various schools E-mail filters acceptance of the survey e-mail request.

Definition of Terms

For the purposes of this study, the following terms will be defined.

Conceptual Definition of Specific Learning Disability (SLD). The conceptual definition of SLD is the definition currently outlined in established special education law. (Mechek & Nelson, 2007).

Continuous Progress Monitoring. Continuous progress monitoring is a process in which student progress is assessed on a regular and frequent basis in order to identify when inadequate growth trends might indicate a need for increasing the level of instructional support to the student (Togut, 2012).

Disproportionality. Disproportionality is defined as a disproportionate representation of minorities and other subgroups in special education (Georgia Department of Education, 2011).

Eligibility Determination. Eligibility determination is the process that occurs after an evaluation has been completed and the parents of the child as well as other eligibility team members determining whether the child evaluated presents with a disability (Georgia DOE, 34, C.F.R. §300.306(a)(1) (2007).

Evaluation. Evaluation is the procedures used to determine whether a child has a disability and the nature and extent of the special education and related services that the child needs (Georgia DOE, 34, C.F.R. §300.306(a)(1), 2007).

Individuals with Disabilities Education Act (IDEA). IDEA replaced EHCA in 1990 with an emphasis on student's needs as opposed to their disabilities. IDEA required states and various public agencies to establish proper procedures for early intervention, special education, and related services to children who present with

disabilities, from birth to 21 years of age (IDEA, 42, U.S.C. § 1432 (1); § 1412 (a)(1), 2004).

Implementation Fidelity. Implementation fidelity is specific procedures required through RTI for regular documentation of the level of implementation (e.g., were modifications of the teaching practices implemented consistently with a high degree of accuracy) of each of the features of the model (Togut, 2012).

No Child Left Behind. No Child Left Behind (NCLB) was the reauthorization of the Elementary and Secondary Education Act, which required states to ensure teacher quality and establish student performance standards. The law established accountability for student outcome and improved inclusiveness and equitability of American education (US Dept. of Education, 2004).

Operational Definition: An operational definition is guidelines that help to establish a clear understanding of a concept or phenomenon so it can be unambiguously measured (discover6sigma.org).

Operational Definition of SLD: For the purposes of this study, the operational definition of specific learning disability will be defined as the classification criteria used in the process of identifying a student as having a learning disability based on current Georgia regulations (O.C.G.A. § 20-2-152; 20-2-240, 2010).

Perceptions: For the purposes of this study, perceptions will be defined as the process by which psychologists translate their impressions into a coherent and unified view of the classification of specific learning disabilities. Though sometimes perceptions are based on incomplete, unverified, or at times unreliable

information, perceptions equate with reality for most practical purposes and, therefore, guide human behavior (deVaus, 2002).

Progress Monitoring. Progress monitoring is a scientifically-based practice used to assess students' academic performance and determine the effectiveness of instruction. This process involves collecting and analyzing data to determine student progress toward specific skills or general outcome measurements, make instructional decisions, and analyze (Fuchs & Fuchs, 2006)

Response to Intervention. Response to Intervention (RTI) is a systematic decision-making process designed to allow for early and effective responses to children's learning and behavioral difficulties, provide children with a level of instructional intensity matched to their level of need and then provide a data-based method for evaluating the effectiveness instructional approaches from scientifically validated research (Togut, 2012).

Scientifically-Based Research. Scientifically-based research applies rigorous, systematic, and objective procedures to interventions that are supported by logical, empirical methods that draw on observation or experiment, rigorous data analyses to test stated hypothesis, and justify the general conclusions drawn. Additionally, a scientifically-based technique relies on measurement or observational methods that provide valid data across evaluations and observers that has been accepted by peer-review journal or approved panel of independent experts through a comparably rigorous, objective and scientific review (IDEA, 42 U.S.C. §9832).

Special Education. Special education is specially designed instruction, at no cost to the parents to meet the unique needs of a child with a disability (IDEA, 2004, 42 U.S.C. §300.26).

Specific Learning Disability. "The term '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, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. Such term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Such term does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage." (IDEA, 2004, 20 U.S.C. §1401 [30])

Universal Screening. Universal screenings is a process used in RTI approaches, to systematically evaluate the performance of all students to identify those who are (a) making adequate progress, (b) at some risk of failure if not provided extra assistance, or (c) at high risk of failure if not provided specialized supports (McCook, 2006).

Chapter Summary

The federal definition of SLD has remained essentially unchanged for the past 30 years. Additionally, federal and state regulations have utilized somewhat vague and ambiguous terms when establishing classification criteria for SLD. Historically, students who demonstrated poor performance in academics were evaluated and often identified as

have a learning disability using an IQ-Achievement discrepancy approach (Flanagan & Alphonso, 2011). IDEIA provided three major options for the classification of SLD, including; (1) discrepancy between cognitive ability and academic achievement, (2) Response to Intervention (RTI), and/or (3) the use of other alternative research-based procedures (Flanagan & Alphonso, 2011). Given that interpretation of IDEIA is primarily the responsibility of each individual state, Georgia has mandated that the IQ-Achievement discrepancy model is no longer recognized as an acceptable operational component in the classification of SLD. Furthermore, Georgia requires RTI with additional assessment of cognitive processes, as well as, psychologists' professional judgment to determine if the student exhibits a *pattern of strengths and weaknesses* in performance prior to determining eligibility for a SLD. It has therefore, become the responsibility of local education agencies and school psychologists throughout the state to operationally define SLD based on those guidelines.

The school psychologist is a vital stakeholder in all aspects of the RTI, the comprehensive evaluation, and, the SLD eligibility process. Therefore, the focus of this study is to develop an understanding of school psychologists' current perceptions regarding the classification of learning disabilities, as well as their assessment and identification practices. For the purposes of this study, perceptions will be defined as the process by which psychologists translate their impressions into a coherent and unified view of the classification of specific learning disabilities. Though sometimes perceptions are based on incomplete, unverified, or at times unreliable information, perceptions equate with reality for most practical purposes and therefore, guide human behavior (deVaus, 2002). It is vital that the perceptions of practicing psychologists across the state

of Georgia be understood in an effort to improve the accuracy, fidelity, and consistency of SLD identification methods as well as, recognize possible training institution and professional development needs state-wide.

CHAPTER 2

REVIEW OF LITERATURE

Special education is an academic initiative aimed at providing services to students who present with mental, physical, or emotional disabilities. It is specialized instruction designed to meet the unique needs of each individual student based on his or her exceptional disability. Today, public schools are required to provide special education services for all children ages three through 21 who are identified with a qualifying disability in thirteen distinct categories including; autism, deaf-blindness, deafness, emotional disturbance, hearing impairment, mental retardation, multiple disabilities, orthopedic impairment, other health impaired, speech or language impairment, traumatic brain injury, and visual impairment including blindness. Present day disability laws, including special education, can be traced back to the Social Security Disability Act of 1956, which was the first disability law in the U.S. mandating benefits for individuals with handicapping conditions (Holdnack & Weiss, 2006). Understanding the history of disability law allows educators to develop an appreciation for the evolution of the language written for identifying disabilities including specific learning disabilities (Holdnack & Weiss, 2006).

History of Special Education Legislation

Before the Education of All Handicapped Children Act (EHCA) was enacted in 1975, public schools in the United States provided special education services for one out of every five children with a disability (U.S. Dept. of Education, n.d.). Prior to 1975, many state laws prohibited students with certain disabilities from attending public school. These disabilities included students who were blind, deaf, emotionally

disturbed, or mentally retarded (National Council on Disability, 2000). At the point that EHCA was enacted, more than 1 million children in the U.S. did not have access to free public education (National Council on Disability, 2000). In addition, an estimated 3.5 million children attended schools where they received nominal instruction in segregated facilities (National Council on Disability, 2000). The primary intent of EHCA legislation was to ensure proper identification of students with a disability and to guarantee those students proper educational services (Ikeda, 2012).

In 1990, the EHCA was replaced by the Individuals with Disabilities Education Act (IDEA) in an attempt to focus on individual students' needs, as opposed to their disabilities. The focus of this law changed from providing *access* to free public education to accountability and improving results (Bradley & Danielson, 2004). Essential to improving results was ensuring accurate and early identification of children presenting with a disability (Bradley & Danielson, 2004). IDEA required states and various public agencies to establish proper procedures for early intervention, special education, and related services to children who present with disabilities, from birth to 21 years of age (IDEA regulations, 1990, § 1432 (1); § 1412 (a)(1)).

IDEA was reauthorized in 2004, becoming the Individuals with Disability Education Improvement Act (IDEIA) ensuring it aligned with the No Child Left Behind Act (NCLB, 2002). One of the main results of this law was establishing guidelines for SLD identification. After IDEIA was enacted into law, the states had three options for the identification of students with SLD: (1) permit or prohibit severe discrepancy, (2) require or allow response to scientific based interventions, and (3) permit or omit the use of other alternative research-based procedures (IDEA

regulations, 2008, § 300.307(a); Zirkel, 2010). This is the occasion in which IDEIA explicitly recognized "the use of a process based on the child's response to scientific, research-based intervention" (e.g., RTI) (IDEA regulations, 2006, § 300.307(a)(2)). It is important to note, however, that the conceptual definition of learning disabilities used in IDEIA remained fundamentally unchanged from the definition used by the U.S. Office of Education for EHCA in 1977 (Machek & Nelson, 2007).

Specific Learning Disabilities

In 1895, Scottish ophthalmologist James Hinshelwood was one of the first professionals to formally observe and identify the characteristics of learning disabilities in the area of reading. Hinshelwood reported "word blindness" or severe reading difficulties in children with normal intelligence which was not organic in nature but the result of abnormal brain development (Meyer, 2000).

In 1963, Samuel Kirk presented a paper entitled "Learning Disabilities" to a group of educators and parents at a conference for the *Exploration into the Problems of the Perceptually Handicapped child* (Flanagan & Alfonso, 2011). In his paper, Kirk (1963) defined LD as:

> a retardation, disorder, or delayed development in one or more of the processes of speech, language, reading, writing, arithmetic, or other school subjects resulting from a psychological handicap caused by a possible cerebral dysfunction and/or emotional or behavioral disturbances. It is not the result of mental retardation, sensory deprivation, or cultural and instructional factors. (p. 263)

Conditions today are not all that different from Hinshelwood and Kirk's era. Students classified as LD are found to demonstrate poor performance in reading, written expression (including spelling), and/or mathematics that cannot be explained by external factors or their potential to learn (Buttner & Hasselhorn, 2011). Based on the exclusionary factors outlined in IDEIA, this unexpectedness of a student's underachievement is reflected in the absence of intellectual disability, sensory impairment, emotional disturbance, cultural deprivation, or inadequate instruction (Buttner & Hasselhorn, 2011; National Association of School Psychologists, n.d.).

Strong empirical evidence across multiple researchers from a variety of professions supports the validity of learning disabilities (Bradley & Danielson, 2004; Fuchs & Fuchs, 2006; Holdnack & Weiss, 2006; Mercer, Jordan, Allison, & Marcer, 1996). Researchers and practitioners agree students who had average or above average IQ had the ability to learn; therefore, their failure to learn was both unpredicted and inexplicable. Children with less ability, such as slow learners or students with low-average intelligence, could not be expected to learn as well because their potential was less and, therefore, their difficulties in learning could be explained (Meyer, 2000).

As far back as the 19th century, it was assumed that a connection between ability and achievement should be evident when evaluating a child suspected of having a learning disability. Given this prevailing assumption, identifying a severe discrepancy in achievement and cognitive ability in the absence of other handicapping conditions became the primary classification criteria for determining SDL (Meyer, 2000). For more than three decades the main operational definition of SLD has been the

discrepancy criterion. Discrepancy was first introduced by Bateman (1966) in her definition of LD which was later formalized as part of the federal regulation as:

> (1) The child does not achieve commensurate with his or her age and ability when provided with appropriate educational experiences, and (2) the child has a severe discrepancy between achievement and intellectual ability in one or more areas relating to communication skills and mathematics ability. (p. 102)

It was problematic, however, that Federal regulation as well as other clinical diagnostic systems (i.e., DSM-III) did not provide numeric values or formulas to measure or determine this "discrepancy" (Meyer, 2000). As a result, states began to establish their own criteria regarding the level of discrepancy between IQ and ability or achievement that constituted a SLD (Meyer, 2000). This resulted in inconsistent diagnosis and placement of students in special education.

Throughout the years, opponents of the IQ-Achievement discrepancy model presented several criticisms of this approach to establishing SLD eligibility. These criticisms have included: (a) the model implies that despite very poor academic performance, some students do not require specialized instruction in their area of need because the discrepancy between their intelligence and academic achievement is less than required for an LD classification (Buttner & Hasselhorn, 2011); (b) controversial issues associated with tests of intelligence indicating IQ scores are potentially influenced by income, race, nutrition, education, and/or sex (Buttner & Hasselhorn, 2011; Fuchs & Fuchs, 2006; Meyer, 2000); (c) inconsistencies due to discrepancies in identification methods and measurements between, and at times within, states' results in wide-spread variance in prevalence of SLD (e.g., KY, 2.96 percent; GA, 3.29

percent; CT, 4.93 percent; MA, 7.88 percent ; NM, 8.41 percent; and RI, 9.46 percent) (McCook, 2006; O'Donnell & Miller, 2011); (d) difficulty with psychologists' consistent use of objective decision making (McCook, 2006; O'Donnell & Miller, 2011); and (e) IQ-Achievement discrepancy provides limited information to educators regarding how to devise a plan of appropriate and effective intervention for LD students, such as an Individualized Education Plan (IEP) (Berkeley et al., 2009; Buttner & Hasselhorn, 2011).

The ineffectiveness of the ability-achievement discrepancy model for the identification of SLD in a reliable and valid manner was well summarized by Ysseldyke (2005),

> Professional associations, advocacy groups, and government agencies have formed task forces and task forces on the task forces to study identification of students with LD. We have had mega-analyses of meta-analyses and syntheses of syntheses. Nearly all groups have reached the same conclusion: There is little empirical support for test-based discrepancy models in identification of students as LD. (p. 125)

Despite these and other criticisms, in many states, the IQ-Achievement discrepancy approach continues to be a part, if not most, of the identification process for students suspected of having a SLD. In a survey of all state and non-state jurisdictions, Ahearn (2008) found that only six (Colorado, Delaware, Georgia, Indiana, Iowa, and West Virginia) of the responding 49 states prohibited the use of severe discrepancy when determining SLD eligibility.

One major change that occurred with the reauthorization of IDEIA was the elimination of the need to demonstrate a severe discrepancy between a student's cognitive ability, generally measured using IQ, and his/her achievement (Cortiella, 2010). This change was an attempt to clarify SLD classification and identification procedures. However, the criterion used to identify LD students continues to vary considerably among, and often within, states throughout the United States (Zirkel & Thomas, 2010). By allowing states to institute different approaches to SLD identification, the reauthorization of IDEIA has resulted in ongoing confusion and poor alignment of classification and identification practices (Buttner & Hasselhorn, 2011).

IDEIA explicitly states that the use of an IQ-Achievement discrepancy model is not required. Although the new wording in IDEIA discouraging the use of a discrepancy formula for SLD identification was not unexpected, the law did not go so far as to prohibit its use. The fact that the law does not specify a process required for classifying a student as SLD is indicative of the complexity of this issue. As a result, the responsibility of establishing SLD eligibility criteria has again been left to states and their local education agencies (LEA) (Machek & Nelson, 2007).

SLD Special Education Eligibility in Georgia

Any special education classification determined under IDEIA cannot be based on any one single criterion (i.e., single test, assessment, observation, or report). The National Association of School Psychologists (NASP) position statement regarding the Identification of Students with SLD states: "The primary purposes of a comprehensive [psychological] evaluation are to determine if the child has a SLD, and to make recommendations regarding educational placement and instruction interventions" (p. 2).

The focus of an SLD assessment is to gather functional, developmental, and academic information, assist in determining if the child has a SLD, and, define the child's specific educational needs (NASP, n.d.). The comprehensive evaluation of a student suspected of having a SLD must include a variety of assessment tools and strategies. Additionally, IDEIA requires input from student's parents and an observation of the student's academic performance and behavior in the general education classroom (Georgia Special Education Rules Implementation Manual, 2011).

The eligibility team is made up of a group of qualified professionals which should include; parents, a general education classroom teacher, and a person, or persons qualified to conduct individual diagnostic evaluations using instruments that meet state and LEA requirements. Following completion of the evaluation, this team will come together to determine if a student meets the requirements necessary to receive special education services under any of the thirteen available classification areas. Assessments and all other evaluation materials must be administered by trained and knowledgeable personnel in accordance with any instructions provided by the producer of the assessments (IDEA, 2004; NASP, n.d.).

The state of Georgia utilizes an "integrated approach" to the identification of students with SLD. Therefore, within the state of Georgia, RTI (Georgia Pyramid of Intervention) is mandated prior to requesting a referral for a comprehensive psychological evaluation. The Georgia Department of Special Education Rules Implementation Manual (2011) states that mandating RTI prior to referral for a cognitive based assessment ensures that the school has "addressed the immediate underachievement a student demonstrates *prior to* the determination of eligibility for

special education" (Georgia DOE, 2011, p. 54). As a result, the Georgia SLD eligibility process depends on excellent fidelity of implementation of RTI interventions. Therefore, documentation of fidelity of interventions and student progress monitoring is necessary to fulfill state eligibility requirements. RTI is utilized by Georgia to demonstrate that a student continues to perform academically below his/her age-appropriate peers in their instructional setting and their rate of learning lags behind that of their same-grade peers following systematic intervention. It becomes imperative that schools implement and document research-based interventions that are matched to the student's specific needs prior to referral for a comprehensive evaluation. Fidelity of interventions and progress monitoring is required as part of the Georgia eligibility determination documentation to establish an SLD eligibility.

RTI is not the sole factor for determining eligibility under the SLD classification within the state of Georgia. The Georgia Implementation manual specifically states:

> The SLD student demonstrates unexpected low achievement relative to aptitude or ability. These students display distinct patterns of strengths and weaknesses, and evidence must show that the students' processing deficits impact their areas of educational deficit. Notable, unexplainable profound inconsistencies make SLDs stand out. (Georgia Department of Education, 2011, p. 71)

At this time a working model for the operationalization of patterns of strengths and weaknesses (PSW) has not been proposed by the state of Georgia. Additionally, Georgia has not recommended the use of specific research-based models for analyzing cognitive ability or cognitive processing data to determine if PSW are significant, thereby

qualifying the student to receive specialized instruction (i.e., special education). It remains the responsibility of each local education agency (LEA) or individual school psychologists to define a conceptual rule for determining PSW. This research will assist in developing an understanding of Georgia psychologists' assessment practices and current methods used for determining the significance of various PSW when classifying a student as SLD.

Response to Intervention

Response to Intervention (RTI) was originally developed as a strategy for remediation of slow learners in the area of reading for kindergarten through third grade (Fuchs & Vaughn, 2012). The majority of policy makers who promoted RTI were also recognized authorities behind Reading First, a major facet of No Child Left Behind (2002) (Fuchs & Fuchs, 2006; Fuchs & Vaughn, 2012). Consequently, RTI was originally viewed as a means of providing early intervention to address reading difficulties (Fuchs & Fuchs, 2006). With the ratification of IDEIA, RTI quickly became the acceptable process for the identification of students, aged kindergarten to 21years, in all eight major areas under SLD classification (i.e., oral expression, listening comprehension, written expression, basic reading skills, reading fluency skills, reading comprehension, mathematics calculation, and mathematics problem solving) (Cortiella, 2010).

RTI refers to an established set of criterion used for identification and decision making of students who are at-risk of academic failure. It does not, however, designate a particular set of processes or procedures that should be observed (VanDerHeyden, Witt, & Gilbertson, 2007). Theoretically, when RTI is provided with fidelity, data-

based decisions regarding a student's response or non-response to established interventions will guide service delivery decisions, including, at times, placement in special education. RTI is a multi-tier approach, typically ranging from two to four tiers in which students move up (or down) receiving increasing (or decreasing) levels of intensity of instruction and interventions (Fuchs & Fuchs, 2006; Ikeda, 2012; O'Connor & Freeman, 2012; Ysseldyke, 2005). Essential components of an RTI program include; (1) research-scientific based core curriculum for all students, (2) universal screening, (3) continuous progress monitoring to ensure clear documentation of students' progress, (4) multiple tiers, and (5) instructional fidelity at all tiers, achieved through systematic monitoring of the integrity of interventions and instruction (Berkelye et al., 2009; Hughes & Dexter, 2011; National Center on Response to Intervention, 2010; Zirkel, 2011).

Tiers of Intervention

The number of tiers necessary to determine an adequate intervention has occurred has been the center of some debate. While no approach has been empirically proven to be the most effective, numerous models of RTI are conceptualized based on a three-tier model (Kaplan, 2011; Mellard et al., 2010). The RTI team has several options for increasing the level of intensity of interventions within and between tiers. Examples of options for increasing intervention intensity include: (1) utilizing more systematic, teacher-centered, clear (e.g., scripted) instruction; (2) increasing the frequency of instruction; (3) increasing the duration of instruction; (4) establishing smaller, homogenous groups; and/or (5) providing instruction and interventions by specialized, highly skilled professionals (Fuchs & Fuchs, 2006).

Within the RTI framework, tier one is viewed as the primary prevention level in which schools provide access to scientifically-based core academic instruction for all students (Berkeley et al., 2009; Hughes & Dexter, 2011; Mellard et al., 2010). Approximately 80 percent of student's academic needs can be met at tier one (Berkeley et al., 2009). Universal screening is viewed as a critical component for identifying students who are at risk for experiencing academic difficulties within the RTI model. Unfortunately, at this time there are no empirically supported guideline for criteria (e.g., cut score, percentile rank, or quartile) that should be used to identify at-risk learners at tier one (Hughes & Dexter, 2011).

Tier two, the secondary intervention tier, involves approximately 15 percent of the student population. Typically this tier is characterized by increased levels of intensity of instruction with a targeted small group or more intensive research based interventions and more frequent progress monitoring (Berkeley et al., 2009; Mellard et al, 2010). It is important to note that tier two interventions and progress monitoring do not supplant, but are in addition to tier one (Hughes & Dexter, 2011). Students who do not respond adequately to the increased intervention intensity at tier two are referred to tier three.

The group of students at tier three is very small, generally made up of no more than 5 percent of the total school population (Berkeley et al., 2009; Fuchs & Fuchs, 2006; Hughes & Dexter, 2011; Mellard et al., 2010). Tier three is characterized by the most rigorous intervention setting with intense, very small group, or individualized instruction. Students at tier three are progress monitored on a very frequent, typically weekly basis (Berkeley et al., 2009). At tier three, students who do not demonstrate improvement with a rate of growth trajectory that predicts they will close the achievement gap with their

same-grade peers are referred for a special education evaluation (Fuchs & Fuchs, 2006; Hughes & Dexter, 2011).

RTI Approaches

Currently, there are two major approaches to decision making within the RTI model: (1) the Standard Protocol Approach which has been promoted by prevention or early intervention researchers (Burns, 2005; Fuchs & Fuchs, 2006; Fuchs et al., 2003), and (2) the Problem Solving Approach, which typically is promoted by behaviorally-oriented school psychologists. Although there are distinct differences between these approaches, most RTI models described in literature are a blend of the two (Burns, 2005; O'Connor & Freeman, 2012). More importantly, both models can fit within a problem solving framework. "The fundamental difference [in the two approaches]…is the level of individualization and depth of problem analysis that occurs prior to the selection, design, and implementation of an intervention" (Christ, Burns, & Ysseldyke, 2005, p. 2). In summary, the standard protocol approach employs research-based interventions selected from a bank of choices in which students with similar difficulties are grouped, while the problem solving approach utilized decision making teams to determine research-based interventions that are designed specifically for that individual student (Berkeley et al., 2009).

Standard Protocol Approach. The standard protocol approach determines the responsiveness to intervention for groups of at-risk students who present with similar difficulties. This approach emphasizes scientifically-based classroom intervention and trial group designs for clusters of at-risk students (Kaplan, 2011). "A Standard-Protocol

Approach to RTI requires the use of the same empirically validated treatment for all children with similar problems in a given domain" (Fuchs et al., 2003, p. 166).

Carney and Stiefel (2008) outlined several benefits to this RTI model including: (a) efficiency of training educators to conduct one intervention with accuracy, (b) large numbers of students are able to participate in intervention protocols resulted in a limited need for additional personnel, and (c) group analysis allows for comparison of student assessment data compared to established aim-line criteria. The Standard Protocol approach is often favored by leaders due to a perceived increase in the degree of fidelity with established interventions based on the standardized methods, structure, and training involved (Schwierjohn, 2011). However, as Wanzek and Vaughn (2007) pointed out, several key elements must be in place for this RTI approach to be successful. These features include: (a) interventions directly related to specific skill deficit with improved outcomes, (b) a well-defined curriculum that is clearly aligned with student needs, and (c) intervention procedures are provided to students by personnel trained in specific protocols. Without the use of standard protocols, the other elements of this RTI model will become much less effective.

Collaborative problem solving approach. Collaborative problem solving is defined by Burns et al., (2005) as "a systematic approach in which a problem is conceptualized and identified, factors that contribute to the problem are analyzed, interventions are designed, and strategies are implemented and evaluated" (p. 92). Typically this model is comprised of decision-making teams whose members may consist of general education teachers, special education teachers, administrators, speech-language pathologists, school psychologists, and parents (Berkeley et al., 2009; Fuchs &

Fuchs, 2006). The assumptions underlying this approach to student learning are: (1) every child can learn, (2) collaboration is the theoretical basis, (3) the emphasis is problem solving rather than finding or labeling (Berkeley et al., 2009; Burns et al., 2005; Fuchs & Fuchs, 2006), and (4) the use of evaluation data to assess the effectiveness of interventions will improve their quality as well as student outcome (Burns et al., 2005).

Within the collaborative problem solving model, significant emphasis and effort is made to individualize assessment and interventions throughout the RTI process. As Fuchs and Fuchs (2006) noted, this also has the potential to be a weakness. Without adequate structures and support, the potential exists for the lack of knowledge and expertise required to establish a sound intervention and assessment plan for each student. RTI teams may not possess this level of expertise in areas such as: clinical judgment, knowledge of multiple forms of assessments and interventions, and the ability to accurately measure the effectiveness of an intervention. They then run the risk of inadequately managing or defining students' academic needs (Burns et al., 2005; O'Connor & Freeman, 2012).

The collaborative problem solving model has become part of best practices guidelines for school psychologists. Alan and Garden (2002) clearly outlined school psychologists' role as consultants and service providers within this model. Providing leadership in establishing collaborative problem solving teams is proposed as "a useful way for school psychologists to conceptualize and organize their (entire) service delivery practice" (p. 565). Within this approach, although roles and responsibilities vary, all contributors participate actively in all levels of the RTI process with the school psychologist typically serving in a leadership role.

System level support beyond the role of school psychologist is critical for the implementation of a collaborative problem-solving model to yield long-term success and truly impact student achievement. Variables that have the potential to impact the success or failure of this model include: (1) sufficient resources, (2) incentives for staff to actively participate in the problem solving process, (3) motivations for staff to effectively implement intervention plans and progress monitoring with fidelity, and (4) adequate time allocated for collaboration to occur (Allen & Graden, 2002; O'Connor & Freeman, 2012). Without district level support, the viability and sustainability of the collaborative problem solving approach to RTI implementation is highly questionable.

RTI in Georgia

Student Support Teams (SST) in Georgia originated as the result of the 1984 federal lawsuit *Marshall v. Georgia* (Rogers, 2010; Student Support Team Guidelines, 2011). This court ruling dealt primarily with the disproportionate identification and placement of minority students in special education. Although Georgia prevailed in the overall case, a deficiency in Georgia's special education identification process was revealed. Georgia had not established a consistent procedure for students to receive individualized academic assistance in the regular education classroom. Instead, students who required academic assistance were frequently removed from the general education classroom and automatically placed in Special Education (Rogers, 2010; Student Support Team Guidelines, 2011). As a result of *Marshall v. Georgia*, the state mandated that a SST should be established in all K-12 public schools. The state's commitment was accepted by the court, resulting in the formation of SST as a permanent injunction in Georgia. Tier three of Georgia's RTI process is clearly defined as SST; thereby,

complying with the court's ruling. *Marshall v. Georgia* was appealed to the 11th Circuit Court of Appeals, but the court refused to hear it. Therefore, SST is not a nation-wide requirement. It is, however, binding for all public schools in Georgia. (SST Guidelines, 2011)

Consequently, Georgia's RTI process consists of four, rather than the traditional three, tiers of student support. Within Georgia's four-tier system, tier three is reserved for SST, and tier four signifies placement of students who meet the eligibility requirements for special education (Berkeley et al., 2009; Georgia's Student Achievement Pyramid, 2011). Georgia's RTI model has been defined as a blended approach incorporating both the problem-solving and standard protocol methods at each tier with structured decision-making required throughout the process (Georgia's Student Achievement Pyramid, 2011).

Although RTI is federally mandated, for the most part, education is primarily the concern of each individual state. Therefore, states differ in their implementation of special education laws on factors such as operational definitions of disabilities, referral practices, testing guidelines, the make-up of eligibility committees, the availability and cost of services, and the acceptability of special education classification categories (Singer, Palfrey, Butler, & Walker, 1989). The Georgia Department of Education Regulations requires the following:

> Prior to referring for consideration for eligibility of special education and related services, a student must have received special scientific, research or evidence based interventions selected to correct or reduce the academic, social, or behavioral problem(s) the student is having. (Chapter 160-4-7.03-2)

To meet this requirement, Georgia law requires the use of RTI for identification and placement of students in special education. A rare exception to this is allowed by the state when an immediate evaluation is required due to a student presenting with a significant disability. Georgia is one of only four states in the nation to require RTI prior to establishing SLD eligibility, and it is one of only two states that allows the additional use of "patterns of strength and weaknesses" (Zirkel & Thomas, 2010, p. 57) to be considered as part of the criteria for establishing SLD eligibility (Birkeley et al., 2009; Zirkel & Thomas, 2010; Zirkel, 2010).

In their review of district level considerations for the implementation of RTI, O'Connor and Freeman (2012) posited that RTI should be closely tied with the concept of *continuous school improvement*. Bernhardt and Herber (2011) have defined continuous school improvement as the cyclical process of improving the educational organization in a manner that includes: assessment of data to define the current status of the system; establishing system level goals; analyzing causes for current status; planning system actions to achieve goals; and, evaluating results routinely to guide system decisions. These authors stated:

> Until you get continuous school improvement right, you cannot get RTI right. If you do continuous school improvement right, you will have a good start toward an effective RTI system. If you do RTI right, you will be engaged in a continuous school improvement process. (Bernhardt & Herbert, p.1)

Hence, implementation of a truly effective RTI program requires significant educational reform, including changes in the way we think and act at all levels of the educational system. RTI in its purist form is not a program or an initiative but a process that is

integrated throughout a district as the foundation for all educational decision making (O'Connor & Freeman, 2012).

One of the overlooked factors impacting RTI implementation is the role of culture and beliefs that exist in a district or school (O'Connor & Freeman, 2011). One of the essential principles necessary to support the implementation of RTI is, "we can effectively teach all children" (National Association of Directors of Special Education, 2005, p. 19). In districts where RTI has become operational and well established, staff believes that a systematic analysis of student response to high-quality interventions conducted with fidelity will, in time, yield information that can be used to remedy skill deficits and close the achievement gap with same-grade peers (O'Connor & Freeman, 2011). For those who do not share this core belief, participation in interventions of progressing intensity, data analysis, and problem solving will have a considerably increased likelihood of being characterized by limited integrity, fidelity, and diligence of effort (O'Connor & Freeman, 2011).

The Role of School Psychologist in RTI

Historically, the school psychologists' role was to conduct and interpret psycho-educational assessments as well as other activities associated with establishing special education eligibility. However, with the introduction of RTI their role was, in theory, restructured to include leadership, problem solving, and clinical decision-making. While the role school psychologists play in the RTI process is not clearly defined in research literature or in government regulations, it has been systematically inserted, and in some instances required, as part of best practices, state and district policy, and laws. Scholars (in both P-12 and universities) and members of professional organizations (e.g., National

Association of School Psychologists & American Psychological Association) have discussed the diversification of the school psychologists' role for a long time. Professional commentary and research on school psychologists has focused on expanding the profession beyond assessment and special education into various additional school-based services including collaboration, consultation, data analysis, team leader, and teacher mentor (Allen & Garden, 2002; Fuchs & Vaughn, 2006; Rogers, 2010; Sullivan & Long, 2010; Ysseldyke, Burns, & Rosenfield, 2009). The National Association of School Psychologists (NASP) supported the development of certification standards as well as service delivery models for school systems across the nation with the National Board Certification System and Blueprint Publications (Yssledyke et al., 2006). Each of these modifications has been embedded with the goal to move away from assessment and identification for special education and toward prevention, intervention and providing support to regular education through RTI. However, research continues to suggest that theory may not have moved into practice.

Limitations of RTI for SLD Identification

Problems with the original operational definition of SLD using the IQ-Achievement discrepancy model set the stage for new ways to classify and serve children with learning problems (Hale, Wycoff, & Fiorello, 2011). Although it appears that RTI is slowly becoming the leading candidate for replacing the discrepancy approach in SLD identification, several issues associated with this model should be taken into consideration. States have primarily assigned responsibility for the design, training, and implementation of RTI programs to individual districts resulting in significant inconsistencies in all areas of the model (Burns et al., 2005). Without effective district

coordination, decision making, and support for RTI, there is an increased potential for the model to become fragmented and unfocused, and thereby unsustainable (O'Connor & Freeman, 2012). Given that the foundation of an RTI model is the implementation of research-based practices and interventions which tend to be dynamic and ever-changing, continual "consumption of information" from professionals in the research community is required (O'Connor & Freeman, 2012, p. 301) for the RTI model to be performed with fidelity. The issue of "dimensional vs. categorical" nature of SLD has not been addressed through the implementation of RTI (Buttner & Hasselhorn, 2011, p. 82). Additionally, a range of outcome data regarding student's response to prescribed interventions exists (e.g., student data will be normally distributed); hence, the cut-off point for determining SLD eligibility remains unspecified. Therefore, similar to the IQ-Achievement discrepancy model, the question of how bad a student's response to research-based practice need to be to qualify as SLD persists (Buttner & Hasselhorn, 2011; Ysseldyke, 2005). Limited research is available regarding how to deal with the student who is repeatedly moved back to his general education setting at tier one, only to fail again requiring additional intervention and remediation. RTI does not define if this student should be classified SLD or assigned to another category. Possibly more importantly, RTI does not delineate what type of supplementary remediation students in this category should receive long-term (Buttner & Hasselhorn, 2011). Finally, there is no true positive in an RTI model. When a child does not respond to interventions within either RTI model, practitioners can only be sure of one thing; "the child did not respond the idiosyncratic criteria chosen by the team" (Hale, Wycoff, & Fiorello, 2011, p. 174). Without the definition of a true positive for a disorder, it becomes impossible to

determine the sensitivity and specificity of the measures; therefore, any method for determining disability is flawed. The classification of a child as SLD based on their non-response to interventions is not scientifically or empirically sound; it is essentially a "diagnosis by default" (Hale, Whycoff, & Fiorello, 2011, p. 175).

In summary, the passage of IDEIA resulted in the elevation of RTI to a prominent role in the eligibility process as a means of providing effective interventions and progress monitoring of students' responses to the established, research based interventions. Recent literature, however, suggests that scholars and professionals working in the area of learning disabilities have begun to question whether RTI alone is the answer to SLD identification. As O'Connor and Freeman (2012) pointed out in their analysis of district-level considerations necessary for successfully implementing and sustaining an effective RTI program: "Many schools have established RTI structures and are collecting a great deal of data related to student learning outcomes, but are not realizing significantly improved student achievement or behavior outcomes" (p. 297). Regardless of the school district's goal for implementation of RTI, either as the core of a continuous school improvement process (O'Conner & Freeman, 2012) or solely for the purpose of identifying students' SLD's (Berkeley et al., 2009), questions have been posed concerning the long-term fidelity and sustainability of RTI (Fuchs & Vaughn, 2012; Hughes & Dexter, 2011; Machek & Nelson, 2007; Ysseldyke, 2005; Zirkel, 2011). More importantly, there are multiple reasons for a child's failure to respond to interventions, only one of which is SLD. Consequently, there is no possible way to determine whether a child who does not respond meets the statutory requirements of SLD classification (Hale, Wycoff, & Fiorello, 2011).

As prominent RTI advocates, Fuchs and Fuchs (2006) noted, “This [unreliability of RTI diagnosis] is important because a major criticism of IQ-Achievement discrepancy as a method of SLD identification has been the unreliability of the diagnosis” (p. 99). Using RTI for the identification of SLD is likewise, unreliable and therefore invalid because there is no true positive in an RTI model. Multiple plausible explanations for nonresponse to intervention exist, only one of which may possibly be SLD (Hale, Wycoff, & Fiorello, 2011).

Other Alternative Research Based Procedures

Given the significant limitations of RTI as the sole criteria used for SLD identification discussed throughout prominent literature (Buttner & Hasselhorn, 2011; Fuchs & Fuchs, 2006; Fuchs & Vaughn, 2012; Hale, Wycoff, & Fiorello, 2011; Hughes & Dexter, 2011; Machek & Nelson, 2007; O’Conner & Freeman, 2012; Ysseldyke, 2005; Zirkel, 2011), the Office of Special Education and Rehabilitative Services (OSERS) moved quickly to include what has been coined the *third method* for determining a SLD classification in the final IDEIA regulations published in 2006 (Hale et al., 2011). The third alternative for establishing SLD outlined in IDEIA allows for the use of *other alternative research-based procedures* (IDEA, 2004, § 300.307[a]). Although the language of this option is also somewhat vague, it has been interpreted by most researchers and practicing professionals to involve the evaluation to determine the presence of a *pattern of strengths and weaknesses* (PSW) (Flanagan & Alfonso, 2011). PSW are typically identified using tests of academic achievement, cognitive abilities, and neuropsychological processes (Hale et al., 2008; Zirkel & Thomas, 2010).

Currently, several methods for the evaluation of PSW have been recommended throughout literature. Each of these models follows four general principles: (1) full scale IQ is irrelevant except for a diagnosis of an intellectual disability (formerly Mentally Retarded); (2) children classified as SLD demonstrate a pattern with academic skills and cognitive abilities within the average range with an isolated weakness in academic *and* cognitive functioning; (3) specific cognitive processing weaknesses must be matched to specific area of academic concern; although, administration of multiple measures in an attempt to *find* a deficit is unacceptable; and (4) cognitive areas unrelated to the area of academic concern are within or above the average range (Berninger 2011; Flanagan, Fiorello, & Ortiz, 2010; Hale et al., 2011; Hanson et al., 2009; Naglieri, 2011).

Prominent empirically-based models of SLD identification which are consistent with IDEIA's *third option* include: (1) Virginia Berninger's (2011) Evidence-Based differential diagnosis and treatment of reading disabilities with and without comorbidities in oral language, writing, and math; (2) Cattell-Horn-Carroll (CHC) theory (Flanagan, Fiorello, & Ortiz, 2010), which was refined by Flanagan, Alfonso, & Mascolo (2011), becoming CHC-based operational definition of SLD; (3) Concordance-Discordance Model (Hale, Fiorello, Bertin, & Sherman, 2003), which has been expanded to incorporate RTI & cognitive hypothesis testing and intervention of SLD (Hale, Wycoff, & Fiorello, 2011); and (4) Discrepancy-Consistency approach to SLD identification using the PASS Theory (Naglieri, 2011).

Cognitive assessments used within each of these models are characterized by highly reliable, norm referenced, assessments based on nationally established norms (Stuebing, Fletcher, Branum, & Francis, 2012). These empirically-based methods for

assessing PSW assume discrepancies in cognitive abilities are related to low achievement and that all other exclusionary factors have been ruled out.

Examination of exclusionary factors is intended to rule out other possible explanations for poor academic performance or factors that may negatively impact a student's performance on cognitive assessment while not *ruling in* SLD (Flanagan et al, 2011). Because many possible reasons for deficient acquisition of academic skills or test performance exist (i.e., intellectual disability, sensory deficits, economically disadvantaged, poor instruction, cultural differences, emotional/behavior disordered, lack of motivation, or performance anxiety), the importance of examining exclusionary factors prior to determining an SLD classification should not be minimized (Flanagan et al., 2011; Hale et al., 2011; Naglieri, 2011; National Association of School Psychologists, n.d.; Stuebing et al., 2012).

Unlike the IQ-Achievement discrepancy and RTI approaches to SLD identification, the above methods for evaluating PSW are posited to be empirically-based approaches that address the statutory and regulatory requirements of IDEIA (Hale et al., 2011). All of the methods target the evaluation of comprehensive profiles of strengths and weaknesses in cognitive skills. However, determining a student who presents with an average ability profile, while also exhibiting below-average aptitude and achievement is not a straightforward task; and at this time, an agreed-upon technique for determining this condition does not exist (Flanagan et al., 2011). Typically, multiple cognitive skills are assessed targeting an identifiable weakness that is relative to an achievement domain. It is important to note that the identified cognitive or processing weakness must occur within a set of strengths to classify a student as SLD

under IDEIA's *third option* (Flanagan et al., 2011; Hale et al., 2011; Stuebing et al., 2012).

Within the state of Georgia SLD is defined as; "An unexpected low achievement relative to aptitude or ability and displays distinct *patterns of strengths and weaknesses* with notable, unexplainable, and profound inconsistencies in academic performance. Specific learning disabilities result from one or more processing deficits" (Georgia Special Education Rules Implementation Manuel, part 2, p. 69). As a result, Georgia law mandates the documentation of a pattern of strength and weaknesses in performance and/or achievement in relation to age and grade level.

Theoretically, a pattern of cognitive and academic strengths and weaknesses approach incorporates assessment of basic psychological processes in conjunction with underlying academic success. At this time, however, Georgia has not chosen nor recommended a particular empirically-based model for determining PSW. Therefore, guidelines for psychologists interpretation of the comprehensive assessment of intellectual development designed to assess specific measures of processing skills are not available. Within Georgia, it remains the responsibility of LEA and at times individual psychologists to determine how to interpret assessment results in conjunction with academic and RTI data to establish a processing strength, a processing weakness, and an academic deficit associated with the identified processing weakness.

The lack of salient guidance for operationalizing the PSW requirement in Georgia law could potentially be compounded by a nation-wide general lack of understanding of the *third option* provided under IDEIA. In a recent nationwide survey of 525 practicing school psychologists regarding their impressions of the third-model of SLD

identification, over 88 percent of responders stated they were familiar or extremely familiar with IDEIA (Kerrigan, 2011). However, only 17 percent of all responders were able to correctly identify that three options are outlined in IDEIA for SLD identification. Approximately 25 percent of the responding psychologists reported using an alternative, research-based approach in their SLD identification process however, 93 percent reported administering cognitive and/or neuropsychological tests as part of their SLD identification process. Additionally, over half (60.9 percent) of practicing psychologists believe the cognitive ability-achievement discrepancy model is a viable and useful model for identification of SDL (Kerrigan, 2011). These results mirror previous research (Berkeley et al., 2009; Zirkel & Thomas, 2010) in which the majority of states are explicitly permitting or prohibiting ability achievement-discrepancy while permitting or requiring RTI. Clearly, the majority of practicing school psychologists nationwide are unaware of the availability of an alternative research based approach to the identification of SLD or lack adequate training to employ these models. Results from this research will reveal the extent to which practicing psychologists in Georgia are observing these guidelines in their current assessment practices.

School Psychologists' Perceptions and Practices

Prior to the reauthorization of IDEIA, Speece and Shekita (2002) conducted a survey targeting the perceptions of editorial board members (N=113) of four leading research journals. The researchers' goal was to develop an understanding of which definitional components were perceived by these leading experts to be most important when operationalizing learning and reading disabilities in schools. Results revealed ambiguity among the experts surveyed regarding which criteria should be included.

Three of the possible seven definitional component choices were selected by at least two-thirds of the respondents as strongly agree/agree. These components included reading achievement, phonemic awareness, and treatment validity. Interestingly, 30.2 percent of survey participants agreed that discrepancy between IQ score and reading achievement should be included in the operational definition, while 42 percent agreed that IQ score alone was an important component. When asked to rate which component was perceived as most important, 31 percent of respondents chose to not answer the question. Of those who did respond, no operational component was selected by more than 25 percent of the survey group. Finally, when the experts were asked if exclusionary factors should be included in the operationalization of reading learning disabilities, 76.6 percent indicated affirmative.

Although these findings were limited by the population size as well as the very narrow demographics of the sample (e.g., white [93.8 percent], middle-age: between 30-49 years [81.4 percent], university employees [87.6 percent], with doctorates [99.1 percent]) (Speece & Shekita, 2002), the results were reflective of the philosophies of scholars, knowledgeable and informed on the research and controversy surrounding operationalizing reading disabilities. Given that this research was conducted prior to the reauthorization of IDEIA, these results from informed academics, were predictive of the challenges to be faced when attempting to operationalize all eight domain areas of SLD at the state and local level, as well as, with individual school psychologists.

In 2007, Machek and Nelson conducted a survey of practicing school psychologists (N= 549) randomly selected from the NASP directory to determine their perceptions of procedures for identifying children with a reading disability (RD). The

researchers based their survey on the instrument originally developed by Speece and Shekita (2002). This instrument used a 4-point Likert scale to measure psychologist's self-assessment of knowledge regarding RD classification and operational definitions of criteria for RD identification. Machek and Nelson's survey sought school psychologists' perceptions regarding the role of IQ testing in evaluating RD and the role of identification within the framework of RTI; additionally, it asked general questions regarding assessment of RD, as well as, detailed demographic information. Machek and Nelson (2007) piloted their survey using a sample of university faculty, graduate students studying school psychology, and practicing school psychologists. Based on feedback from pilot participants, the researchers clarified language in the survey, added questions regarding curriculum based measurements, and redefined treatment validity as it applied to RTI (Machek & Nelson, 2007).

Results revealed that of the eight possible choices of criteria to establish RD eligibility, three were endorsed by more than 75 percent of the responders. These included RTI (88 percent), cognitive processing (77.6 percent), and cut-off scores on measures of phonemic awareness (75.6 percent). In addition, 61.9 percent of responding psychologists chose IQ-Achievement discrepancy as a viable model for determining RD eligibility. These results indicate a significant number of school psychologists continue to value and use the information gleaned from the comparison of IQ and achievement to assist with making clinical judgments regarding the identification of a reading disability. Psychologists' endorsement of cognitive processes and IQ-Achievement discrepancy models appear somewhat contradictory, given their strong approval of the RTI model. Further research is needed to explore this apparent contradiction and develop an

understanding of why psychologists continue to desire clinical information pertaining to a student's IQ vs. achievement level as part of the evaluation process. The limited empirical data available may indicate psychologists' desire to utilize a combined approach, incorporating RTI and cognitive factors and/or IQ discrepancy model in a comprehensive evaluation. However, additional research is needed to validate this hypothesis. Machek and Nelson (2007) concluded that psychologists who self-reported being more knowledgeable in assessing RD endorsed the RTI model significantly higher (83.2 percent) than those who self-reported being less knowledgeable (71.1 percent), (p=.009). These results may indicate that additional professional development in the area of RTI was needed at the time of the survey.

In 2011, O'Donnell and Miller conducted a comparable national survey of school psychologists to determine levels of acceptability for the RTI model versus the IQ-Achievement (IQ-A) discrepancy model. Practicing school psychologists (N=230) were presented two hypothetical case descriptions and asked to evaluate the acceptability of each model for identifying SLD in the domain of reading. O'Donnell and Miller (2011) concluded that levels of acceptability for the IQ-Achievement discrepancy model varied significantly based on the psychologists' level of exposure to the RTI model. Researchers discovered a positive correlation between exposure to the RTI model and its acceptability rating as well as a negative correlation between exposure to RTI and acceptability of IQ-Achievement discrepancy model. Data also indicated that work setting significantly affected psychologists' acceptability of the RTI model. In their study, O'Donnell and Miller (2005) defined work setting as elementary, middle/high school, or multiple settings, which the authors further clarified as working in more than

one school with varied grade-levels (i.e., middle and elementary). Based on this information, O'Donnell and Miller (2011) concluded that acceptability of RTI model varied based on the school setting in which the reporting psychologists worked. Elementary and multiple settings resulted in higher degrees of acceptability.

The major finding of O'Donnell and Miller (2011) was that the acceptability of both the RTI model and IQ-Achievement discrepancy model were found to vary significantly based on the psychologists' exposure to the RTI. The researchers did not make a distinction between mere exposure to each model versus model-specific training and whether the exposure to the two models was direct or indirect. Additionally, information regarding the psychologists' roles within the RTI process (i.e., consultant vs. coordinator) may have further clarified these results. These findings further support the need for additional research to fill this gap in knowledge regarding practicing school psychologists' perceptions, acceptability, and practices of RTI versus cognitive-assessment within and outside of an IQ-Achievement discrepancy model for SLD identification.

In an attempt to answer questions raised by their 2007 study, Machek and Nelson (2010) utilized the previous data from a national survey of practicing school psychologists (N=549) to further analyze school psychologists' perceptions and acceptability of various RD assessment procedures. Researchers correlated responses based on years of experience as well as work setting. In contrast to O'Donnell and Miller (2011), Mechek and Nelson (2010) narrowly defined work setting. Participants who reported working any length of time in an elementary environment were placed in the elementary category. To reduce Type I errors due to multiple comparisons, researchers

adjusted alpha levels for correlations and t tests using the Bonferroni correction with correlation significance levels set at α=.001.

Mechek and Nelson's (2010) results were consistent with previous research in this realm. The researcher's concluded that psychologists' perceptions regarding whether RTI model vs. IQ-Achievement discrepancy model would minimize overrepresentation of minority children as RD were essentially split (45 percent *not at all*). When utilizing cognitive assessments, school psychologists reportedly preferred the use of factor index scores (62.2 percent) and subtest analysis (59.8 percent), as compared to the full scale IQ scores (48.4 percent) to understand the nature of reading disabilities. Greater than 55 percent of participants reported that they perceived IQ as having implications for teaching, treatment planning, and generation of instructional strategies for students with RD. These results again appear to indicate that psychologists prefer the use of a combined model of RD identification, which incorporates both RTI and cognitive assessment. Additional research to ascertain the perceptions and beliefs of psychologists regarding the issue of classification practices is needed. The proposed study will begin to fill this gap.

Merely 58.1 percent of responding psychologists in Mechek and Nelson's (2010) study found a leadership role in RTI desirable. Most participants perceived their ability to consult higher than their ability to directly engage in a direct RTI role. For example, although 60 percent of surveyed psychologists were positive about their ability to consult regarding effective reading instruction, only 30 percent felt they possessed the skills to actually provide that instruction. Similar to O'Donnell and Miller's (2011) findings, work setting appears to impact psychologists' desire to take on roles typically associated

with RTI. Machek and Nelson (2010) concluded that participants working at the elementary level had a significantly higher desire to take on an RTI leadership role than those working in middle or high-school settings. These results are not surprising, given that RTI was originally developed for the elementary student population in the area of reading disorders (Fuchs & Vaughn, 2012).

The majority of existing research on the identification of SLD has been in the area of reading disabilities (Fuchs & Vaughn, 2006; Machek & Nelson, 2007). Although RTI was originally developed specifically for this area, the model was expanded by IDEIA to also include all areas of mathematics and writing. This study will begin to fill the void in empirical research in which psychologists' opinions are elicited regarding their overall perceptions of various operational components used to determine SLD classification including RTI versus the IQ-Achievement discrepancy model in all eight areas (i.e., oral expression, listening, thinking, speaking, reading, writing, spelling, mathematical problem solving, and/or calculations). In addition, given the unique requirements for establishing SLD eligibility in the state of Georgia, empirical research focused solely in this state is needed. Although a significant amount of research is available establishing the pros and cons of various models used for the identification of SLD (e.g., RTI, IQ-achievement discrepancy), there is a void in the literature regarding school psychologists' acceptance, perceptions, and use of these models. O'Donnell and Miller's (2011), and Machek and Nelson's (2007, 2010) research began to fill a void in the literature concerning the opinions and perceptions of psychologists regarding the most effective model for the identification of reading disabilities and their role in establishing and sustaining an RTI program. However, an understanding of the clinical practices, as well

as the operational criteria used by school psychologists when establishing SLD eligibility in all eight areas of eligibility continues to be needed.

Currently, the State of Georgia does not permit significant discrepancy between IQ and achievement to be considered in the process of determining eligibility for students to receive special education services in the area of SLD (Berkeley et al., 2009; Zirkel, 2010). Georgia law and educational authorities have mandated RTI, in addition to the use of professional judgment to analyze a variety of sources, including a comprehensive assessment of cognitive processes, as the primary avenue for school psychologists to qualify students under the SLD eligibility. Not enough is known about the perceptions, attitudes, and genuine assessment practices of psychologists regarding the evolution of RTI in Georgia over the last decade. Therefore, the purpose of this study will be to begin to account for the limitations of previous research while developing an understanding of the acceptance, perceptions and practices of Georgia school psychologists regarding assessment practices, RTI, and the operationalization of SLD.

Chapter Summary

For the past three decades, the federal definition of SLD has essentially remained unchanged. However, SLD remains the most frequently classified special education disability in our nation's schools. The federal definition does not specify procedural guidelines for the identification of SLD. As Kavale (2002) aptly stated; "The definition [of SLD] is primarily exclusive, describing what SLD is not rather than identifying what SLD is. Consequently, operational definitions necessary for practice have usually considered factors that may not have been articulated in the formal definition" (p. 369). Despite no change in the definition of SLD in the most recent reauthorization of IDEIA,

the procedures for identifying SLD have changed. Based on the current law, IQ-Achievement discrepancy can no longer be mandated. Although it remains a viable option in the majority of states it is currently prohibited for SLD identification within the state of Georgia. RTI has been embraced by several states as the required approach for SLD identification, although empirical literature has concluded that using this method alone is inconsistent with the federal law (Flanagan & Alfonso, 2011). The state of Georgia currently mandates the use of RTI as part of the SLD eligibility process. The *third option* provided under IDEIA is the use of research based alternatives for SLD identification. This classification option is now permitted in more than 20 states, including the mandated assessment of cognitive processing abilities and documentation of *patterns of strengths and weaknesses* requirement in Georgia. The confusion that has surrounded methods of SLD identification for many years, along with the obvious disconnect between the definition of SLD and the most typical methods of identification, continue to spark controversy among researchers (Flanagan & Alfonso, 2011) and confusion among practitioners.

The accountability for interpreting and implementing this federal law is the responsibility of individual states. Therefore, based on the general guidelines outlined by the state of Georgia it becomes the responsibility of local education agencies and school psychologists throughout the state to operationally define SLD. At this time, the current operational definition of SLD within the state of Georgia remains rather unspecified. Gaining an understanding of the assessment and identification practices used by school psychologists throughout the state of Georgia will allow decision-making regarding policy, training, and professional development to move forward in a positive manner.

This study will evaluate if, and how, Georgia psychologists are interpreting and executing Georgia's current law in their daily professional practices. Additionally, this research will evaluate psychologists' perceptions of the current requirements imposed by Georgia's interpretation of IDEIA.

CHAPTER 3

METHODOLOGY

The purpose of this study was to explore the perceptions of practicing Georgia school psychologists regarding the operational components, assessment practices, and the use of RTI for determining SLD classification. Additionally, this study explored and examined if the likelihood or probability of school psychologists' perceptions regarding SLD classification could be accounted for based on explanatory variables concerning population served, RTI implementation, professional affiliation, and years since completion of last degree. The results of this study could lead to a better understanding of psychologists' perceptions concerning the operationalization of SLD; therefore, providing insight for policy decision making, institutional training programs, and, professional development needs within the state of Georgia. The following chapter will include a review of research methods used to conduct this study including: (1) research questions, (2) research design, (3) the study population and sampling techniques, (4) data collection, (5) instrumentation, and, (6) statistical analyses used to quantify the data collected.

Research Question

This research was guided by the following question: What are the perceptions, practices, and operational components used by practicing Georgia school psychologists for determining eligibility under the classification of specific learning disability in all eight domain areas (oral expression, listen, think, speak, read, write, spell, mathematical problem solving, and/or calculation)? In addition, the following sub-questions helped clarify the results:

1. What is the probability that the assessment processes perceived as important by Georgia school psychologists for establishing SLD eligibility can be accounted for by various explanatory variables including: population served, RTI vs. non-RTI school, years since completion of last degree, and membership in a state/national professional organization?
2. What is the probability that the perceptions of Georgia school psychologists' regarding the use of RTI for establishing SLD eligibility can be can be accounted for by various explanatory variables including: population served, RTI vs. non-RTI school, years since completion of last degree, and membership in a state/national professional organization?
3. Are practicing Georgia school psychologists incorporating empirically-based models in their evaluation of *patterns of strengths and weaknesses* as part of the SLD eligibility process?

Research Design

The goal of this research was to provide insight into the perceptions of practicing Georgia school psychologists regarding operational components, assessment practices, and the use of RTI when establishing SLD eligibility. In this ordinal logistic regression study, proportional odds models were constructed to explore and examine the relationship between psychologists' perceptions of SLD classification and explanatory variables concerning various demographics and psychologists' perception ratings. The outcome variables of interest in this study were psychologists' perceptions regarding the classification of SLD using various four-level ordinal measures such as "very much agree" , "agree", "disagree", "very much disagree" (Chen & Hughes, 2004). As indicated

earlier, explanatory or independent variables included population served, RTI vs. Non-RTI school, years since completing last degree, and membership in state/national organization. Additionally, this study explored if psychologists' use of empirically-based models when assessing cognitive processes and evaluating for *patterns of strength and weaknesses* could be predicted based on a variety of independent or predictor variables.

Various regression methods such as linear, logistic, and ordinal logistic regression could be useful tools to analyze the relationship between psychologists' perceptions of SLD classification practices and multiple explanatory variables (Chen & Hughes, 2004; Higgins, n.d.; Liu, 2008). The use of a regression method would allow the researcher to identify explanatory variables related to psychologists' work environments and professional demographics that contribute to their overall perceptions of SLD classification practices (Chen & Hughes, 2004; DeCarlo, 2003). The choice of linear, logistic, or ordinal logistic regression methods depends largely on the measurement scale used to determine the outcome variables. Linear regression analysis would be an appropriate model when using continuous scale outcome variable measurements, while logistic regression analysis would have been superior for binary or dichotomous outcome data (Chen & Hughes, 2004; DeCarlo, 2003). It is important to note that linear regression analyses require normality and constant variance of residual and outcome data points to be considered an appropriate model (Chan & Hughes, 2004; Salkind, 2008) . Given that the ordinal outcome data obtained in this research contained a small number of discrete categories, it was improbable to assume normal distribution and homogeneity of variance of ordered categorical outcome variables (Chen & Hughes, 2004). Therefore, the ordinal logistic regression design was the preferred method because it did not assume normality

and constant variance of outcome data. The proportional odds model for ordinal logistic regression was used to estimate the odds of being at or above a particular level of the response variable (Liu, 2008). For example, "if there are *j* levels of ordinal outcomes, the model will make J-1 predictions, each estimating the cumulative probabilities at or above the jth level of the outcome variable (Lie, 2008, p. 1). Therefore, ordinal logistic regression requires the assumption of proportional odds across all levels of the categorical outcome.

Ordinal logistic regression is a specific form of a general linear model. To fit a binary logistic regression model, which serves as a basis for an ordinal logistic regression model, a set of regression coefficients are estimated to predict the probability of the outcome of interest (Ordinal Regression: Chapter 4, n.d.). The following model formula demonstrates the function of the probabilities modeled as a linear combination of parameters:

$$Ln\left(\frac{prob(event)}{(1-prob(event))}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + ... + \beta_k X_k$$

The quantity on the left of the equal sign is the logit, which is the log of the odds that an event occurs (Ordinal Regression: Chapter 4, n.d.). Hence, the coefficient in the logistic regression model provides information regarding how much the logit changes based on the values of the predictor variables (Ordinal Regression: Chapter 4, n.d.).

Defining the Event

The event of interest defined by ordinal logistic regression is observing a particular score or one of higher order (Ordinal Regression: Chapter 4, n.d.; Chen & Hughes, 2004). Therefore, rather than considering the probability of an individual event occurring (i.e., likelihood of getting a response of 'somewhat agree') based on a four-

point Likert scale, this model considered the probability of that event occurring, as well as, all other events that are ordered before it (Garson, 2012). For the purposes of this study, psychologists' ratings of perceptions were modeled by the researcher using the following odds:

θ_1 = prob (score of 4) / prob (score of less than 4)

θ_2 = prob (score of 4 or 3) / prob (score of less than 3)

θ_3 = prob (score of 4, 3, or 2) / prob (score of less than 2)

No odds are associated with the last category since the probability of scoring up to and including the last score would be 1 (Ordinal Regression: Chapter 4, n.d.).

The essential features of an ordinal regression model outlined by Chen and Huges (2004) include:

> (1) the outcome variable of interest is a grouped and ordered category that may be regrouped from an unobserved continuous latent variable, however, it is not clear whether the ordinal outcome is equally spaced; (2) the ordinal regression analysis employs a link function to describe the effect of the explanatory variables on the ordered categorical outcome in such a way that the assumptions of normality and constant variance are not required; (3) the model assumes that the corresponding regression coefficients in the link function are equal for each cut-off point, therefore, the violation of the model assumption parallel lines has to be verified carefully by the test of proportional odds. (p. 4)

Limited research soliciting school psychologists' assessment practices and perceptions regarding operational components and RTI necessary for establishing SLD eligibility is available at this time. Of the available research, three studies (e.g., Mechek

& Nelson, 2007; 2010; Speece & Shekita, 2002) utilized the same core survey to conduct their research. Therefore, the researcher obtained access and incorporated a modified version of this survey instrument as the basis for this research. A survey design was chosen for this research due to its economically conservative nature and the relatively rapid turnaround for data collection (Creswell, 2009). Additionally, Creswell (2009) states survey methodologies are the most effective manner for measuring perceptions, attitudes, and beliefs. The researcher chose to use a web-based survey because it was the most efficient, cost effective manner to invite practicing school psychologists throughout the state of Georgia to participate (deVaus, 2002).

Population and Sample

In 2011, the Georgia Department of Education reported a total of 769 practicing school psychologists in 147 (of 179) districts across the state. The researcher utilized a variety of resources in an attempt to gain access and establish a broad list of e-mail addresses for practicing school psychologists in the state. These resources included: (1) Georgia Department of Education, (2) Student Support Team Association of Georgia, (3) Georgia Association of School Psychologists, (4) personal contacts, and (5) phone call contact of Special Education Director or Superintendent of remaining districts. Demographics of this population have not been established and are therefore, unavailable (Georgia DOE).

The participants in this study were comprised of 366 practicing school psychologists in the state of Georgia. Although utilizing a random sampling procedure would have been optimal, given the required minimal sample size (N=270), as well as, an

unknown rate of response, the researcher chose to include a self-selected sample which would optimize chances that the minimum sample size would be obtained.

Unfortunately, specific demographic data summarizing practicing school psychologists' in Georgia has never been collected (Georgia Department of Education). Additionally, the Georgia Association of School Psychologists reportedly does not compile demographic information from their members. Therefore, no data are available to compare the demographic characteristics of the sample (Machek & Nelson, 2010).

Survey sampling was a self-selected design in which the researcher had access to the majority of names in the population. After the removal of duplicate names, all psychologists known within the population were sent an invitation to participate. The final sample consisted of psychologists in which e-mail addresses were successfully obtained that chose or selected to participate. Following completion of the IRB process for Atlanta Public Schools (APS), the research approval committee determined that individual e-mail addresses would not be provided to the researcher. Therefore, a link to the survey was e-mailed to practicing school psychologists within the APS district via Dr. Darnell Logan, Coordinator of Psychological Services. Sending the survey in this manner did not allow the researcher to send reminders to survey non-responders. Although many of the practicing school psychologists in Georgia received an invitation to participate in the survey, the research population was ultimately comprised of a self-selected sample of 366 practicing school psychologists.

Instrumentation

The researcher obtained permission from Dr. Jason Nelson (Appendix A) to modify and use the survey implemented in his reserach, A National Survey of School

Psychologists' Perceptions of Identification Practices for Students with Reading Disabilities (Machek & Nelson, 2007). The original survey questions were analyzed and revised based on feedback from Dr. Nelson, to include all 8 areas of SLD rather than only reading, and to address the unique features of Georgia special education law. The instrument used in this study was made up of 49 items (Appendix C). Psychologists'who successfully completed the selection criteria, were asked to respond to 11 general demographic information and professional affiliation(s) questions. Section two, examined Georgia school psychologists' perceptions regarding the operationalization of learning disabilities. This section was comprised of nine questions in which psychologists respond on a four-point Likert scale which ranged from a 1 = Strongly Disagree to 4 = Strongly Agree. One additional question in this section asked participants to select which standard used in the operationalization of SLD they perceive as primary and secondary in level of importance. Section three of the survey instrument was comprised of seven questions which assessed psychologists' perceptions and beliefs regarding the influence of IQ or cognitive ability scores in assessment for SLD. For each of the items regarding assessment and use of IQ/cognitive ability, psychologists' responded on a four-point Likert scale, which ranged from 1 = very much disagree to 4 = very much agree. With this scaling, a higher score indicated the psychologists' favorable preference of the use of full-scale scores for determining the existence of a SLD. The fourth section of the survey incorporated two additional four-point scales to develop an understanding of RTI in each district as well as the psychologists' role within each individual RTI model. The scale in this section ranged from a 1 = poor to a 4 = excellent. The general assessment practices of school psychologists was evaluated using

a similar four-point Likert scale ranging from a 1 = very much disagree to a 4 which corresponded to a response of very much agree.

In addition to the structured Likert scale items presented above, the final survey questions utilized embedded logic to determine if psychologists were incorporating empirically-based methods in the assessment of cognitive processes and evaluation for *patterns of strength and weaknesses.* Of the psychologists' who responded that they currently used research-based methods, the final questions attempted to determine which research based methods were used most frequently. Psychologists who did not utilize empirically-based methods for assessing *patterns of strength and weaknesses*, were asked a follow-up question to determine why a formal, research based approach was not being employed. Georgia's current guidelines for assessing PSW were provided prior to these questions in an attempt to ensure respondents were informed and familiar with the concept prior to answering. The following information was included in the survey:

> Georgia's current interpretation of the **third option** for SLD identification outlined in IDEA (2004) includes the following provision:
>
> Determining SLD identification requires professional judgment based on "multiple sources of evidence to conclude that the child exhibits a *pattern of strengths and weaknesses in performance, achievement or both,* relative to age, State-approved grade level standards and intellectual development" (Georgia Department of Education, Special education rules implementation manual, 2011, p. 22).

Content validity for structured items was addressed using several methods. Psychologists' opinion regarding operational definition of SLD, the use of IQ and the use of RTI in the SLD identification process were identified in the literature (see Appendix D) and corresponding items were selected for each. Second, wording from a previous instrument (Machek & Nelson, 2007) designed to measure psychologists' opinion of the classification SLD, use of IQ and RTI, as well as assessment practices were reviewed. Wording from this instrument was used whenever possible to help ensure consistency with other researchers' construction. Some alterations were needed to adapt items to include all 8 areas of SLD, as opposed to solely reading disabilities, and to address the unique features of Georgia special education eligibility process. Third, once a completed draft of the instrument was developed, two experts in school psychology, familiar with research on RTI as well as Georgia's special education law, reviewed each item and provided expert feedback for refinement and clarification of wording. Lastly, the instrument was pilot tested with all (N=5) school psychologists' in one Georgia district. These individuals were asked to complete and critique the instrument, as well as provide comments for needed modifications.

Following completion of the first pilot survey, psychologists' responses to the final two open-ended questions regarding how they were currently assessing *patterns of strengths and weaknesses* did not yield valuable or functional data. Therefore, these questions were modified with the assistance of both original expert reviewers to include embedded logic with multiple choice answers. These new survey questions were then piloted with the original pilot group. Following analysis of the second pilot results, the questions utilizing embedded logic were selected to replace the open-ended questions.

For respondents that were currently not utilizing a formal empirically-based process for evaluating PSW, a final open-ended question regarding how they were currently assessing this area was included.

Data Collection

An invitation to participate in the on-line, anonymous survey (Appendix B) with the URL attached was sent electronically via *SurveyMonkey*© to all practicing school psychologists in the state of Georgia for whom e-mail addresses were successfully secured. All participants accessed the survey link using *SuvveyMonkey*© Secure Sockets Layer (SSL) encryption. This feature ensured that all data transmitted to and from survey respondents, as well as, data downloaded by the researcher was secure. Given the needed sample size, as well as specific responder goals, several factors were mindfully considered in an attempt to increase response rate. The initial invitation to participate in the survey was sent July 23, 2013. The survey remained open through September 9, 2013. This schedule accommodated for the various school start dates throughout the state, while also occurring during pre-planning and the first weeks of school when psychologists are working but have more flexibility with their time. The survey was configured to allow respondents to pause or exit survey and return at a later time to complete unanswered questions. Additionally, participants could choose to exit the study at any time without cause or justification. As an incentive to participate, psychologists' who completed the survey were provided with the opportunity to be entered into a drawing to win a $100.00 Amazon gift card, which translates into a total cost of $0.13 per practicing school psychologist. Participation in the drawing was completely voluntary. Individuals who chose to participate had to option to provided personal information on a

separate sweepstakes entry page which opened at the completion of the survey. This allowed all survey participants' responses to remain anonymous. No personal or identifying information was available to the researcher. *SurveyMonkey*© randomly selected the winner, contacted them directly, and distributed rewards on behalf of the researcher. Although the number of total survey items was rather large, which was not ideal, 11 of the items were demographic in nature, requiring minimal effort to respond. It was estimated that the survey took approximately 20 to 25 minutes to complete. Lastly, the researcher assured responding psychologists who complete the survey; results would be made available to them following completion of the project.

In an effort to obtain the e-mail addresses of school psychologists' working in Atlanta Public Schools (APS), the researcher completed the district-level required IRB process. After gaining approval to conduct research in the APS district, the researcher was informed that the district would not release psychologist's e-mail addresses directly. Following extensive discussions, Dr. Logan Darnell, Coordinator of Psychological Services, agreed to send an e-mail with a survey link to all school psychologists. Sending the invitation to participate in the survey in this manner prohibited the researcher from utilizing *SurveyMonkey*© feature for sending reminders to non-responders and non-completers of the survey from APS.

Using *SurveyMonkey*©, all responses were automatically compiled and imported into an Excel spreadsheet. The researcher ensured security and anonymity of responders through encryption of the survey instrument. Additionally, all responses were assigned an individual code and saved electronically for further evaluation as needed. An e-mail stating "You have completed the survey" was sent at the end of each survey to allow for

tracking who had responded while maintaining anonymity. A follow up reminder e-mail to all psychologists who had not completed or not responded to the survey were sent at two weeks, and again at four weeks after the initial invitation to participate.

Human Subject Protection

The United States Office for Human Research Protections (OHRP) as well as the Institution Review Board (IRB) at Georgia Southern University requires the oversight of all research involving human subjects. As outlined above, this proposed research was designed based on the guidelines outlined by the IRB. Following the cover letter at the beginning of the anonymous survey (Appendix C), participants responded regarding their willingness to participate in the research study and their status as an adult (older than 18 years of age). The cover letter included the following information:

1. Participants are being asked to participate in a research study.
2. Brief description of the study and outline of the survey make-up including time required to complete.
3. Participation is completely voluntary and participants may withdraw from the study, chose to not participate, or not answer any question without penalty.
4. Responses will be completely anonymous; no identifiable information or IP addresses will be collected.
5. Contact information is provided for participants to ask questions regarding the survey or research study.
6. Information regarding Georgia Southern University IRB review and approval of the study.

Data Analysis and Reporting

Data was collected from responses submitted by subjects, coded, and entered electronically into an Excel spreadsheet. The survey included eleven demographic questions (Appendix C). A description of the population for each demographic variable included the percent and frequency of respondents in each category. A matrix of demographic data was developed and presented in table form.

All Likert scale questions were collapsed into separate categories, coded and entered into Excel. Individual sub-categories included: (1) operationalization of learning disabilities, which aligns with the overarching research question; (2) perceptions of obtaining and using cognitive assessment/IQ as part of an evaluation for SLD, which aligns with research sub-question one; (3) perceptions of RTI approach to SLD identification, which aligns with sub-question two; (4) psychologists' general perceptions of the classification of SLD, which corresponds to the overarching research question. Please refer to Appendix D for a comprehensive alignment of research questions, survey questions, and supporting literature.

The ordinal regression model was interpreted initially by analyzing the signs of the regression coefficients. The model assumption of proportional odds was carefully examined to determine the model adequacy (Chen & Hughes, 2004; Garson, 2012; Ordinal Regression: Chapter 4, n.d.). These signs provided insight into the effects of the explanatory variables on the ordinal outcome. Parameter estimates obtained through ordinal logistic analysis were converted to cumulative odds ratios in order to obtain effect size measures (Garson, 2012). The magnitude (e.g., odds ratio or $\mathbf{e}^{\beta}$) of the effect of a specific explanatory variable was used to indicate the size of the effect of a specific

explanatory variable on the odds of the event occurring (Chen & Hughes, 2004; Garson, 2012; Ordinal Regression: Chapter 4, n.d.). Given that outcome data from ordinal logistic regression is cumulative, results were presented in table and narrative form. Tables for each ordinal logistic regression model include; the chi-square statistic, degrees of freedom, p-value, odds ratio, and confidence interval to represent the probabilities for each variable. Significance level for all ordinal logistic regression analyses was established at $p = .05$.

The final three survey questions regarding psychologists' use of research-based approaches for analyzing cognitive processes and evaluating for *patterns of strengths and weaknesses* as well as questions 21 & 22 were structured as multiple choice questions. Therefore, the data was analyzed using a chi-square analysis to determine if the proportions of responders in each category significantly differ from chance. Results with $p = .05$ were considered statistically significant.

Limitations of Ordinal Logistic Model

Potential limitations of the use of ordinal logistic regression models must be taken into consideration. The first potential limitation is sample size. Given that numerous explanatory variables were entered into the equation for analysis, a small sample size would not yield the high power of the statistical tests required to obtain valid results. The model goodness-of-fit is dependent on chi square test results. If the sample size was limited, or the number of cells with zero values (items participants choose to not answer) was excessive, the chi-square goodness of fit statistic would not be appropriate (Chen & Hughes, 2004). At this time, automatic methods for assessing goodness-of-fit are currently not available in standard statistical packages such as SPSS. As a result,

possibility of multicollinearity (two or more variables so highly correlated, they are basically measuring the same phenomenon or construct) was a potential limitation of this chosen method. A high rate of response, as well as the use of SAS 9.3 for data analysis minimized this limitation.

Chapter Summary

Reauthorization of IDEIA discouraged the use of IQ-Achievement discrepancy model and actively encouraged the use of an RTI approach for SLD identification. However, the wording of this law provided no specific procedures (i.e., operational definition) for determining SLD eligibility. Therefore, the responsibility for operationally defining SLD falls to each Local Education Agency (LEA). Georgia law currently prohibits the use of IQ-Achievement discrepancy while mandating the implementation of RTI, assessment of cognitive processes, and, the use of professional judgment based on various forms of evidence to conclude that the child exhibits a *pattern of strengths and weaknesses* in performance, achievement, or both prior to determining an SLD classification. As a result, no formal operational definition for determining SLD classification currently exists in the state of Georgia.

The purpose of this ordinal logistic regression survey study was to provide insight into the perceptions of practicing Georgia school psychologists regarding the operational components, assessment practices, and the use of RTI for determining SLD classification. Additionally, this study explored if the likelihood of a particular perception or assessment practice could be predicted based on a variety of independent or predictor variables (e.g., population served, RTI vs. non-RTI school, years since completion of last degree, and membership in a state/national professional organization). Finally, this research has

begun to provide an understanding of psychologists' use of empirically-based models in their assessment of cognitive processes and evaluation for *patterns of strength and weaknesses.*

The instrument used in this study was modified from Machek and Nelson's (2007) national survey with two expert reviewers, and an independent pilot study conducted to ensure construct validity An anonymous on-line survey was sent electronically via *SurveyMonkey*© to school psychologists' throughout the state of Georgia. Data from ordinal logistic regression and chi-square analyses are presented in Chapter 4 in table and narrative forms.

CHAPTER 4

REPORT OF DATA AND DATA ANALYSIS

The objective of this ordinal logistic regression study was to provide insight into the perceptions of Georgia school psychologists regarding the various operational components, assessment practices, and the use of RTI to determine SLD eligibility. Additionally this study explored whether psychologists' perceptions could be accounted for based on a number of explanatory variables including: population served, RTI vs. non-RTI school, years since completion of last degree, and affiliation with state and/or national professional organization. A sample of 366 self-selected, practicing school psychologists in the state of Georgia responded to an on-line survey. The survey instrument used in this study was modified from Machek and Nelson's National Survey of School Psychologists' Perceptions of Identification Practices for Students with Reading Disabilities (2007), reviewed by two experts, and piloted with all practicing school psychologists (N=5) in one Georgia district.

Research Questions

The following research questions were addressed throughout this study: What are the perceptions, practices, and operational components used by practicing Georgia school psychologists for determining eligibility under the classification of specific learning disability in all eight domain areas (oral expression, listen, think, speak, read, write, spell, mathematical problem solving, and/or calculation)? In addition, the following sub-questions helped clarify the results:

1. What is the probability that the assessment processes perceived as important by Georgia school psychologists for establishing SLD eligibility can be accounted for

by various explanatory variables including: population served, RTI vs. non-RTI school, years since completion of last degree, and membership in a state/national professional organization?

2. What is the probability that the perceptions of Georgia school psychologists' regarding the use of RTI for establishing SLD eligibility can be can be accounted for by various explanatory variables including: population served, RTI vs. non-RTI school, years since completion of last degree, and membership in a state/national professional organization?
3. Are practicing Georgia school psychologists incorporating empirically-based models in their evaluation of *patterns of strengths and weaknesses* as part of the SLD eligibility process?

Research Design

The use of an ordinal logistic regression design was chosen for this study due to the ordinal nature of the majority of survey data, as well as, the lack of normality and constant variance of residual and outcome data points. Given that the survey instrument used in this research was not designed to create continuous responses, the researcher determined an evaluation of each response independently would yield the most pertinent data.

Interpreting Ordinal Logistic Regression Outcomes

Ordinal logistic regression (OLR) is reported frequently throughout the following research findings. Given the limited use of this methodology within social and educational research, a brief overview has been provided to assist the reader, as needed, with understanding and interpreting the results.

The proportional or cumulative odds model of OLR analyses provides an option for researchers to analyze ordinal dependent variables within a logistic framework (Fullerton, 2009). In an attempt to avoid assigning arbitrary values for each ordinal category, OLR assumes that the cut points between categories (i.e., *Very Much Disagree - Disagree - Agree - Very Much Agree*) are unknown. Additionally, it is not known if the ordinal outcomes are evenly spaced (i.e., the distance between *Disagree* and *Agree* may not be the same as *Very Much Disagree* and *Disagree*). Therefore, assigning a value to each category would be inaccurate. However, the ordinal values can be placed in rank order, while keeping in mind, there is no real mathematical relationship between the choices (i.e., A*gree* is not twice as large as *Strongly Disagree*). Examining the probability that a person gave a particular answer, rather than assigning true values to the answers achieves this.

Significant findings from all OLR analyses will be presented below as odds. Odds are defined as the probability of the response belonging to a particular category, divided by the probability of it not being in that category. Fullerton (2009) suggests the equation below to demonstrate this concept:

$$odds\ (Strongly\ Agree) = \frac{p(Strongly\ Agree)}{p(Agree,\ Disagree,\ Strongly\ Disagree)}$$

Given that all ordinal data in this study have four levels, the researcher took advantage of the ordered nature of the responses and examined the odds that an individual will give a “higher” versus a “lower” answer based on the established predictor variables. For example, the odds of two distinct groups of people (e.g., one who works in an elementary school and the other who works in only middle/high school) responding in a “higher” manner (i.e., more agreement) versus a “lower” manner (i.e.,

less agreement) on various Likert scale items will be presented. When predictor (independent) variables had more than two levels, (i.e., *professional organization affiliation*: Both, National, State, or None), odds were compared across each pair of categories (e.g., Both vs. None, Both vs. State, National vs. None, National vs. State, and None vs. State). Finally, when the predictor variables were continuous, for example, *years since completion of most recent degree*, the odds ratio was evaluated by comparing the odds of a more "agreeable" answer across each single unit (one year) increase.

The assumption of proportional odds is a prime concept within OLR. The proportional odds assumption concludes the relationship, in terms of the odds ratio based on a given variable, is the same among each pair of outcome groups. Therefore, the coefficients that describe the relationship between the highest category (*Strongly Agree*) and all response categories below it (*Agree, Disagree, Strongly Disagree*) are the same coefficients which describe the relationship between the next highest category (*Strongly Agree & Agree*) and all lower categories (*Disagree & Strongly Disagree*), given that all other variables in the model are held constant (Institute for Digital Research and Education, n.d.). Therefore, only one set of coefficients will be reported because the relationships between all ordered pairs of groups are constant.

Following analysis of the signs of the regression coefficients, the assumption of proportional odds was examined to determine the model adequacy and to provide insight into the effects of explanatory variables on the ordinal outcome. Parameter estimates obtained through OLR were converted to cumulative odds ratios to obtain effect size measures. The magnitude or odds ratio of the effect of a specific explanatory variable was used to indicate the size of the effect of a specific explanatory variable on the odds of

the event occurring. Data meeting the established significance level of $p = .05$ were considered significant and will be reported in this chapter.

The final three survey questions regarding psychologists' use of research-based approaches for analyzing cognitive processes and evaluating for *patterns of strengths and weaknesses* as well as questions 21 and 22 were structured as multiple choice questions. Therefore, these data were analyzed using chi-square analysis to determine if the proportions of responders in each category significantly differ from chance. Chi-square analyses were compared with the same four independent variables as all OLR models. The preponderance of data did not meet all assumptions necessary for the chi-square tests to be considered valid. Therefore, these results will be presented using descriptive statistics.

Findings

This chapter details the research results, which are organized to present demographic summaries, ordinal logistic regression, and descriptive statistic results. See Appendix F for a comprehensive summary of all OLR findings. All significant data ($p = .05$) have been collapsed and organized in the following manner: (1) the assessment practices and classification criteria used by practicing Georgia school psychologists to operationalized SLD based on significant explanatory variables, (2) Georgia school psychologists' perceptions of RTI and the use of this approach for SLD identification based on significant explanatory variables, and, (3) Georgia school psychologists' use of research-based approaches for analyzing cognitive processes and the evaluation of *patterns of strengths and weaknesses*. Research results are summarized at the conclusion of the chapter.

Demographic Profile of Respondents

In aggregate, 366 individuals self-selected to participate in the online survey, resulting in an initial response rate of 47.6 percent. A thorough analysis of responses resulted in the disqualification of 27 responders due to the following reasons: opting out of the survey (*n* = 3), stating that they were not currently a practicing school psychologist (*n* = 18) in the state of Georgia, or exiting the survey following completion of demographic questions (*n* = 6). Additionally, 23 individuals did not complete the entire survey; therefore, their data were not considered adequate for analysis. Therefore, a response rate of 41percent (*n* = 316) was achieved.

Of total respondents, 83.9 percent were female and 16.1 percent were male. Participants' level of education was predominantly an Ed.S./Specialist degree in school psychology (72.5 percent), with remaining participants reporting holding a doctorate (21.5 percent) or master's (6 percent) degree. Race was distributed between white (86 percent), black/African-American (10.8 percent), and the remaining indicated other or a combination of multiple races. Table 1 presents descriptive statistics of study participants for all predictor variables.

Table 1

Descriptive Statistics

Variable	n	Percent
Population Served		
Elementary	301	95.3
Non-Elementary	11	3.5
No response	4	1.2
Total	316	100.0
Implementation of RTI		
Yes	134	42.4
*No	7	2.2
*Yes, not at optimal level	175	55.4
* combined for analyses		
Total	316	100.0
Member of State/National Organization		
State	116	36.7
National	23	7.3
None	58	18.3
Both	119	37.7
Hold NCSP (National Certification)		
Yes	87	27.5
No	228	72.2
No Response	1	.3
Total	316	100.0

Assessment Practices of Georgia School Psychologists

Two major sections of the survey instrument focused on the assessment practices of Georgia school psychologists, as well as their perceptions regarding the classification of SLD students. This comprehensive topic was initially addressed with survey questions targeting psychologists' perceptions regarding various proposed strategies for the operationalization (e.g., classification criteria) of SLD. In a separate section, the survey investigated psychologists' perceptions regarding the specific topic of cognitive/IQ assessments and how psychologists utilized these results in the classification of students

as SLD. These sections were combined and presented below as the assessment practices and classification criteria used by Georgia school psychologist based on significant predictor variables.

Operationalization and classification of SLD. Prior to responding to questions concerning the operational definition of SLD, psychologists were asked to identify their perceived level of understanding and knowledge regarding the classification/definitional issues surrounding SLD. In addition to the four main predictor variables, psychologists' self-reported knowledge ranking was included in the OLR analyses as a possible predictor variable for this section only. This dichotomous category was defined as extremely knowledgeable and not extremely knowledgeable. Following psychologists' self-selection of knowledge level surrounding this topic, they were asked to rank the various criteria currently used for the operationalization of SLD. Each criterion was ranked on a 4-point Likert scale according to psychologists' level of agreement ranging from *Very Much Disagree* to *Very Much Agree.* After completion of the operationalization section, psychologists were asked to select the two criteria they perceived as most important for the identification and classification of students with SLD.

OLR analysis revealed three of the five options presented as possible criteria in the operationalization of SLD resulted in at least one significant predictor variable. Three predictor variables resulted in significant findings when psychologists rated their perception of the use of cognitive achievement discrepancy as the defining feature of special education eligibility under the category of SLD. Psychologists who described themselves extremely knowledgeable, strongly disagreed with this statement 29.1 percent

of the time, compared to 16.7 percent of those who described themselves as less knowledgeable. OLR results revealed the odds of an extremely knowledgeable Georgia school psychologists perceiving the use of cognitive achievement discrepancy in the classification of SLD favorably was .613 (95% CI 0.398 to 0.943) times as high (less likely) as a psychologist that placed themselves in the less knowledgeable category, a statistically significant effect, Wald $\chi^2(1) = 4.963$, $p = .026$. Therefore, the odds of an extremely knowledgeable psychologist perceiving the use of cognitive achievement discrepancy in the classification of SLD favorably is .613 times as high (less likely) as a psychologist that placed themselves in the less knowledgeable category.

The second significant explanatory variable regarding the use of cognitive achievement discrepancy as the defining feature of SLD eligibility was psychologists' membership in a professional organization. Approximately one-third (31 percent) of respondents who reported no professional membership strongly disagreed with this operational definition, while 30 percent of members of National Association of School Psychologists (NASP) also strongly disagreed. In contrast, a mere 18.1 percent of members of state professional organizations strongly disagreed with the use of IQ-achievement discrepancy as the defining feature for SLD classification. OLR results revealed the odds that psychologists with membership in only a national professional organization would agree with the use of achievement discrepancy for operationalizing SLD were .373 (95% CI 0.157 to 0.888) times as high as members in only state organizations. Similarly, psychologists who reported no professional membership were also less likely than members of state only professional organizations to agree

(odds ratio = .501, 95% CI 0.271 to 0.926). Both of these professional membership dichotomous pairs resulted in a statistically significant effect, Wald $\chi^2(3) = 7.932$, $p = .047$). Hence, school psychologists who are members in only Georgia professional organizations were significantly more likely than psychologists who were members of only national organizations, or those having no professional organization affiliation, to respond more agreeably to the use of significant discrepancy between cognitive ability and achievement as the defining feature of SLD classification.

Years since completion of most recent degree was the final significant explanatory variable related to cognitive achievement discrepancy as an operational definition of SLD. OLR results revealed, for each additional year increase since completion of most recent degree, the odds of selecting a more agreeable statement are .974 (95% CI 0.951 to 0.998) times as high (less likely) resulting in a statistically significant effect, Wald $\chi^2(1) = 4.575$, $p = .032$. Therefore, psychologists with greater number of years since graduation are more likely to disagree with the use of cognitive achievement discrepancy for operationalizing SLD.

The use of RTI as a means of operationalizing SLD was the second option containing a significant predictor variable. The odds that psychologists who reported working in a school or district with no RTI program, or a RTI program lacking commitment and reliability, were .588 (95% CI 0.382 to 0.904) times as high as psychologists who reported working in a district with a comprehensive RTI program to agree that RTI should be the defining feature in the operationalization of SLD, a statistically significant effect, Wald $\chi^2(1) = 5.857$, $p = .016$. Analysis of frequency

distribution revealed less than half (49 percent) of responding psychologists selected RTI as the most or second most important criteria used for operationalization of SLD.

The final possible option with significant results regarding psychologists' perceptions of operationalizing SLD was the use of a simple but severe discrepancy in academic achievement. Results revealed the odds that psychologists rating themselves as extremely knowledgeable in the classification/definitional issues surrounding the operationalization of SLD would select an agreeable response were .629 (95% CI 0.410 to 0.966) times as high as less knowledgeable psychologists (Wald $\chi^2(1) = 4.491$, $p = .034$). Therefore, psychologists with self-reported knowledge regarding classification and definitional issues surrounding SLD classification are less likely to agree that a severe academic achievement discrepancy should be a defining feature in the operationalization of SLD.

At the conclusion of the operationalization section, psychologists were asked to select which of the five criteria outlined they perceived as the most important and second most important for the identification of students with SLD. As indicated in Table 2, the overwhelming majority of psychologists (80 percent) perceived the assessment of cognitive processing deficits evidenced through patterns of strengths and weaknesses as the most important criteria. RTI was the second most frequently selected criteria (49 percent). The integration of RTI combined with assessment for patterns of strengths and weaknesses was the third most frequently selected criteria (38 percent). The data indicate psychologists appear to prefer the use of assessment of processing deficits evidenced through patterns of strengths and weaknesses or RTI rather than a combination of these criteria.

Table 2

Criteria Most Frequently Selected For Operationalizing SLD

Criteria	N	Percent
Cognitive processing deficits evidenced through PSW	252	80
Discrepancy between academic achievement scores	38	12
Discrepancy between Cognition and achievement	64	20
Response to Intervention	154	49
RTI and evaluation for PSW	121	38

Note. PSW = patterns of strengths and weaknesses

Three survey items pertaining to general perceptions surrounding SLD classification also resulted in significant predictor variables. When asked if students with discrepancies between cognitive ability and achievement have qualitatively different instructional needs over students whose low cognitive scores are causally related and, therefore, indicative of low-achievement, the predictor variables related to affiliation with professional organizations and years since completion of last degree proved significant. Results revealed that less than half (47.8 percent) of psychologists who reported membership in national organizations agreed/strongly agreed with this statement, while over 70 percent of state-only members and psychologists with no professional affiliation (73.7 and 75.4 percent, respectively) agreed. OLR results revealed the odds of psychologists who are members of a national organization agreeing that the instructional needs of students with various learning difficulty profiles are meaningfully different were .330 (95% CI 0.128 to 0.848) times as high as psychologists with no professional membership and .280 (95% CI 0.117 to 0.670) times as high as members of state-only organizations, resulting in a statistically significant effect, Wald $\chi^2(3) = 9.019$, $p = .029$. Hence, psychologists who are members of national professional organizations only are significantly less likely than members of state organizations or psychologists with no

professional organization affiliation, to agree that students with discrepancies between cognitive ability and achievement have qualitatively different instructional needs than the sub-group of slow learners (students who have lower cognitive ability and achievement commensurately). Additionally, for every year since graduation, the odds of a psychologist choosing a more agreeable statement regarding the instructional needs of students with various learning difficulties was .949 (95% CI 0.949 to 0.998) times as high, also a statistically significant effect, Wald $\chi^2(1) = 4.455$, $p = .035$.

In a similar question regarding poor readers who are classified as slow learners, psychologists were asked if these students should be designated as having a specific learning disability. OLR results revealed the only significant predictor variable for this question was years since completion of most recent degree. Results indicated that for every year since completion of highest degree, the odds of a psychologist being more agreeable that poor readers whose learning profile would identify them as slow learners should be classified as SLD were 1.028 (95% CI 1.002 to 1.054) times higher, a statistically significant effect, Wald $\chi^2(1) = 4.520$, $p = .033$. Hence, psychologists who have been out of school the longest are significantly more likely to agree that struggling readers who fall into the sub-group of slow learner should be classified as SLD.

The use of cognitive ability/IQ scores in the identification of SLD. Psychologists' perceptions of the use of cognitive ability scores to assist with identifying and serving children with learning disabilities were briefly explored. Of the seven questions pertaining to various aspects of the use of cognitive ability testing, three contained significant predictor variables. Again, psychologists' professional organization affiliation was observed in two of the three significant areas.

Membership in a professional organization resulted in statistically significant OLR findings (Wald $\chi^2(3) = 8.733$, $p = .033$), regarding psychologists' perception of the value of analyzing individual cognitive assessment sub-test when determining SLD classification. The odds of psychologists with membership in a national organization agreeing that individual subtests analysis is a sound assessment practice was .304 (95% CI 0.118 to 0.784) times as high as members of Georgia only professional organizations. Additionally, the odds that psychologists with no professional affiliation agreed with the use of individual subtest analysis were .469 (95% CI 0.238 to 0.926) times as high (less likely) as members of Georgia-only organizations. Frequency distribution revealed 90 percent of members of state-only professional organizations selected *agree* or *very much agree* with this use of individual sub-test analysis to assist in understanding the nature of a learning disability, while 78 percent of both psychologists who were members of national organization and psychologists who had no professional organization affiliation selected similar criteria. Therefore, results revealed that psychologists who are members in only a Georgia professional organization were significantly more likely than members of national organizations or psychologists with no professional membership to agree that individual sub-test analysis is a useful assessment practice for understanding the nature of a learning disability.

When asked to respond to the following statement: *Cognitive ability and achievement discrepancy criterion is useful because it is the only unique feature of learning disabilities that makes SLD distinct from other disability categories*, psychologists who were members of Georgia professional organizations were, again, significantly more likely to agree than any other category (i.e., membership in both state

and national, national only, or no professional membership). Of responding psychologists, 47 percent of members in a Georgia professional organization agreed or very much agreed with this statement, while only 22 percent of national members, 33 percent of psychologists with no membership and 31 percent of psychologists with membership in both national and state organizations agreed or strongly agreed. OLR results indicated the odds of psychologist with membership in both state and national organizations were .571 (95% CI 0.349 to 0.935) times as high as members of a Georgia organization to agree that cognitive ability and achievement discrepancy criterion is the single unique feature that makes SLD category distinct. Similarly, the odds that members of national organizations only would agree with this statement were .405 (95% CI 0.169 to 0.968) times as high as members of state organizations, and the odds that psychologists with no professional membership agreeing were .469 (95% CI 0.254 to 0.869) times as high as psychologists who were members of Georgia only professional organizations. Each resulting in a statistically significant effect, Wald $\chi^2(3) = 9.176$, $p = .027$.

The second significant predictor variable regarding the usefulness of cognitive ability discrepancy for classifying SLD, because it is the exclusive feature making SLD distinct from other disability categories, was years since completion of most recent degree. OLR results revealed that for each additional year since completion of most recent degree the odds of psychologists agreeing that cognitive ability and achievement discrepancy criterion is useful because it is the one unique feature of SLD are .976 (95% CI 0.953 to 1.000) times as high (less likely), a statistically significant effect, Wald $\chi^2(1) = 3.920$, $p = .048$.

The final area of psychologists' perceptions of the use of cognitive ability testing which revealed a significant OLR predictor variable focused on the learning ability of students classified as SLD. Specifically, the question investigated psychologists' perceptions regarding whether the level of difficulty a student would have acquiring new learning could be predicted by the magnitude of discrepancy between cognitive assessments and ability. OLR analysis revealed that for each additional year since graduation, the odds of a psychologist selecting a more agreeable response to this statement were less likely (odds ratio: .960, 95% CI 0.935 to 0.984), a statistically significant effect, Wald $\chi^2(1) = 10.120$, $p = .001$. Consequently, psychologists who have been working in the field longer, without additional formal training at a university, are significantly less likely to agree that the level of learning difficulty a child will experience is related to the magnitude of discrepancy between cognitive ability and achievement scores.

Perceptions of RTI and its use in SLD Identification

The Response to Intervention (RTI) section of the survey provided an in-depth analysis of psychologists' perceptions regarding the RTI program in the school(s) and district they worked. Questions explored psychologists' abilities, skills, and desires, to perform various roles within their RTI program, as well as, the use of RTI for the identification of SLD. Survey questions regarding RTI were separated into four main categories with multiple sub-questions. These categories included psychologists' perceptions regarding the following: (1) the availability of various school personnel and resources necessary to successfully implement an RTI program; (2) the perceived capability of psychologists to fulfill various professional roles within the training and

implementation of their RTI program; (3) psychologists' desire to engage in various roles within the RTI program; and, (4) the extent to which the RTI model has improved the assessment of students for SLD.

One predictor variable used throughout this research was psychologists' perceptions of the RTI program at the schools in which they worked. Psychologists were presented with the major components which have appeared throughout literature (Berkelye et al., 2009; Fuchs, Mock, Morgan, & Young, 2003; Fuchs & Vaughn, 2012; Hughes & Dexter, 2011; National Center on Response to Intervention, 2010; Zirkel, 2011) and asked to classify their RTI program in one of three categories: (1) their schools have effectively implemented these components into their RTI program, (2) their schools have some of the components outlined but not all of the components necessary for a fully-functional RTI program, and (3) the school which the psychologists worked did not have an RTI program. For the purposes of OLR analysis, psychologists' responses to the level of RTI implementation in their school(s) were combined into two dichotomous predictor variable categories. Results revealed that a little over half of the survey participants (58.1 percent) placed their schools in the no/less than optimal category while the remaining participants (41.9 percent) stated the RTI program in their schools was fully functional. Although the predictor variables, professional membership affiliation and years since completion of last degree were found significant in a select few of the OLR analyses, by far, the primary significant predictor variable throughout this section was psychologists' classification of the quality of the RTI program in the district they worked.

R**esources to implement a reliable RTI program.** The initial section requested that psychologists rate the ability of the personnel and the availability of resources within the RTI program in the schools/districts they serve on a four-point Likert scale ranging from *excellent* to *poor*. OLR analysis indicted the one significant predictor variable for each of the five sub-questions regarding the availability of resources to implement an effective RTI program was psychologists' perceptions regarding the quality of their schools' RTI program.

Psychologists' perceptions regarding the ability of general education teachers to implement effective reading, math, and writing interventions with fidelity (e.g., implementing instruction as designed) were clearly impacted by the RTI program in their districts. Psychologists who reported working in an optimal RTI model were less likely (33 percent) to indicate general education teachers' ability as *fair/poor*, while 58 percent of psychologists working in a school/district with no RTI or an inadequate model indicated *fair/poor*. OLR analysis revealed the odds that psychologists whose districts either lacked commitment and reliability or simply had no RTI program would select a response on the *poor* end of the scale were 3.029 (95% CI 1.937 to 4.737) times higher (more likely) than psychologists who indicated a rigorous RTI model was in place (Wald $\chi^2(1) = 23.602$, $p = .001$).

Psychologists' perceptions of special education teachers' ability to provide academic interventions with fidelity resulted in a similar outcome. Psychologists working in districts with no RTI or less optimal RTI programs were more likely (35 percent) to rank the ability of special education teachers as *fair/poor*; while a mere 17 percent of psychologists working in optimum RTI districts indicated the abilities of

special education teachers as *fair/poor*. OLR results revealed the odds of psychologists in the no/less than optimal RTI category responding at the *poor* end of the scale regarding special education teachers' abilities to implement reading, math, and writing interventions with fidelity were 3.464 (95% CI 2.130 to 5.632) times higher than psychologists in the optimal RTI category, a statistically significant effect, Wald $\chi^2(1) = 25.086$, $p = .001$.

When asked if their schools/districts had an adequate level of personnel to implement RTI effectively, 92 percent of psychologists in non-RTI schools indicated *fair/poor*, while 67 percent of psychologist in fully functional RTI programs made a similar selection. OLR analysis indicated that the odds of psychologists in the non-RTI category selecting at the *poor* end of the scale regarding level of personnel necessary for RTI implementation were 5.607 (95% CI 3.490 to 9.009) times higher than psychologists working in fully functional RTI model (Wald $\chi^2(1) = 50.775$, $p = .001$).

Psychologists' perceptions regarding the availability of the financial resources necessary to implement an RTI model effectively were similar to other inquiries on this topic. Over 60 percent of psychologists who reported working in a non-RTI school indicated their access to adequate resources for effective RTI implementation was poor, while only 20 percent of psychologists working in fully-functional RTI models indicated their resources were in the *poor* range. Similarly, OLR results indicated the odds of psychologists selecting a response in the *poor* range were 6.101 (95% CI 3.817 to 9.753) times higher for a psychologist from a non-RTI school than for a psychologist working in a well-designed RTI model, a statistically significant effect, Wald $\chi^2(1) = 57.090$, $p = .001$.

Psychologists' perceptions concerning the availability of time necessary to implement an RTI program effectively was the final resource area with significant OLR findings. Over half (58 percent) of psychologists working in non-RTI schools indicated the amount of time available for the implementation of an effective RTI model was poor, while only 24 percent of psychologists working in functional RTI programs selected the poor range. OLR results indicated the odds of psychologists' selecting a response on the poor end of the scale was 4.449 (95% CI 2.820 to 7.019) times more likely when the respondent worked in a non-RTI school than psychologists working in optimal RTI program (Wald $\chi^2(1) = 41.194$, $p = .001$). In a related question, psychologists working in non-RTI schools were more likely than psychologists in ideal RTI programs to agree that the availability of time necessary to complete all of the tasks required of a school psychologist is a barrier to the effective implementation of the RTI model (odds ratio: 1.662, 95% CI 1.092 to 2.530), a statistically significant effect, Wald $\chi^2(1) = 5.610$, $p = .018$.

Psychologists' perception regarding competence and desire to fulfill RTI leadership roles. A variety of predictor variables were found significant when psychologists were asked to rate their ability and desire to fulfill various leadership roles within their schools RTI programs. OLR results revealed that for each additional year since completion of most recent degree, the odds that psychologists would indicate their ability to fulfill a leadership role in the organization and training to develop an effective RTI program as *desirable/very desirable* were .967 (95% CI 0.945 to 0.990) times higher, a statistically significant effect, Wald $\chi^2(1) = 7.930$, $p = .005$. Similarly, the odds that psychologists had a *desire* to fulfill a training role were also contingent on years since

graduation. OLR results revealed for each year since completion of most recent degree the odds of psychologists' selecting *desirable/very desirable* were .974 (95% CI 0.952 to 0.996) times higher, also a significant effect, Wald $\chi^2(1) = 5.348$, $p = .021$. These results indicate for each additional year since completion of most recent degree psychologists' *ability* and *desire* to fulfill leadership roles within an RTI program increase.

When psychologists were asked to rank their ability and desire to provide highly effective reading, math and writing instruction, professional organization affiliation and level of RTI program implementation were consistently significant predictor variables. Psychologists working in schools with less optimal RTI programs dependably indicated the *poor* end of the scale when ranking their ability to provide highly effective reading (odds ratio: 1.629, 95% CI 1.080 to 2.457, Wald $\chi^2(1) = 5.419$, $p = .020$), math (odds ratio: 1.888, 95% CI 1.242 to 2.868, Wald $\chi^2(1) = 8.865$, $p = .003$), and writing (odds ratio: 1.660, 95% CI 1.093 to 2.520, Wald $\chi^2(1) = 5.651$, $p = .017$) instruction. Based on these findings, it was not surprising that the odds of psychologists' working in less than optimal RTI programs selecting *not at all* when ranking their desire to provide highly effective reading, math, and writing instruction were 1.854 (95% CI 1.198 to 2.841) times higher than psychologists working in optimal RTI programs, a statistically significant effect, Wald $\chi^2(1) = 7.724$, $p = .005$.

Psychologists who were members of both a state and national professional organizations were consistently less likely to rate their ability to provide highly effective math, reading, and writing instruction on the poor end of the scale as opposed to psychologists who have no professional organization affiliation. The odds that psychologists with membership in both state and national organizations would indicate

their ability was on the *poor* end of the scale compared to psychologists with no professional membership affiliation were .416 (95% CI 0.231 to 0.748, Wald $\chi^2(3)$ = 8.646, p = .034) times as high for reading, .443 (95% CI 0.245 to 0.802, Wald $\chi^2(3)$ = 8.050, p = .045) times as high for math, and .387 (95% CI 0.213 to 0.702, Wald $\chi^2(3)$ = 10.707, p = .013) times as high (less likely) for writing.

Psychologists clearly indicated they possessed the ability and desire to actively participate in the area of behavior and classroom management consultation within an RTI model. Psychologists' perceived ability to consult in data tracking and academic based interventions was notably reduced. Furthermore, their desire to perform academic-oriented tasks was even more diminished. Table 3 contrasts psychologists' responses regarding their ability to consult and engage in various RTI roles versus their desire to actually perform those roles.

Table 3

Psychologists' perceived capability to consult and engage in various RTI roles and desire to fulfill that roll.

RTI Role	Ability to Consult	Ability to Engage	Desire to Consult	Desire to Fulfill role
	Percent	Percent	Percent	Percent
Progress monitoring and data tracking	90.96	72.10	78.62	33.13
Provide "highly effective" reading, math, writing instruction	65.72	28.96	58.44	19.18
Consult regarding classroom management	87.81		82.13	
Consult regarding behavioral support	90.22		84.38	

Note. Ability to consult or engage = percent selecting good/excellent. Desire to consult or fulfill role = percent selecting desirable/very desirable

Psychologists' perceptions regarding how RTI has addressed factors surrounding assessment for SLD. When presented with various academic factors in the area of both general education and special education which RTI has been purported to improve, results revealed approximately half (54.9 percent) of the responding psychologists perceived that RTI had provided little to no improvement. Table 4 outlines psychologists' perceptions concerning the areas in which RTI has enriched the educational environment for students.

Table 4

Psychologists' perception regarding the extent to which the RTI model has been an improvement in addressing the following factors

Academic Factor	Little/No Improvement	Moderate/Significant Improvement
	Percent	Percent
Identification and intervention of children at a young age	54.9	45.1
Minimizing over-representation of minority children as SLD	64.3	35.7
Accurate identification of students with cognitive disabilities	68.6	31.45
Accurate identification of students with SLD	44.8	55.2
Taking the quality of classroom instruction into account	56.3	43.7
Screening of all children at an early age	51.4	48.6
Connection between assessment and instruction	49.4	50.6
Ongoing monitoring of student progress.	32.1	67.9

A single predictor variable was found significant for each of the above academic factors. As presented in Table 5, the sole significant predictor variable found throughout OLR analyses was the quality of psychologists' RTI program. The odds of psychologists

working in less optimal RTI programs indicating that RTI had resulted in a *significant improvement* were consistently less likely than psychologists working in a fully-functional RTI model. Table 5 presents OLR results for the odds that psychologists working in schools with no RTI or a less rigorous RTI program would select a response on the *significant improvement* end of the scale.

Table 5

Ordinal Logistic Regression results for perception of psychologists from non-RTI schools concerning the impact of RTI on various academic areas

Academic Factor	Wald $\chi^2(1)$	P-value	Odds Ratio	Lower Limit	Upper Limit
Identification and intervention of children at a young age.	13.226	.001	.465	.308	.702
Minimizing overrepresentation of minority children as SLD.	25.766	.001	.329	.214	.505
Accurate identification of students with cognitive disabilities.	35.730	.001	.268	.174	.412
Accurate identification of students with SLD.	35.442	.001	.259	.166	.404
Taking the quality of classroom instruction into account.	6.555	.010	.582	.384	.881
Screening of all children at an early age.	26.317	.001	.333	.218	.506
Connection between assessment and instruction.	20.218	.001	.374	.244	.574
Ongoing monitoring of student progress.	32.315	.001	.281	.182	.436

Two additional areas resulted in significant OLR findings concerning psychologists' perceptions surrounding the use of RTI in their assessment for SLD. First, for each year increase since completion of most recent degree, the likelihood that a psychologist would agree that cognitive assessments should be administered within the RTI model to rule out a cognitive disability as the cause of severe achievement discrepancy decreased (odds ratio: .975, 95% CI 0.953 to 0.998, Wald $\chi^2(1) = 4.418$, p =

.036). The second significant area surrounded psychologists' perceptions was the need for a systematic way to rule out lack of appropriate instruction as a factor in student's learning difficulties. The odds that psychologists working in a less functional RTI program would agree with the need to develop a means to systematically rule out lack of appropriate instruction were 1.574 (95% CI 1.007 to 2.460) times higher than psychologists working in fully functional RTI model, a statistically significant effect, Wald $\chi^2(1) = 3.957$, $p = .047$.

Approaches for Analyzing Cognitive Processes in Evaluation of PSW

Within the state of Georgia, a formal research-based model for selecting assessment section and analysis of cognitive processing data to determine the significance of observed patterns of strengths and weaknesses has not been recommended. This lack of operationalization for assessment and interpretation of patterns of strengths and weaknesses (PSW) places the responsibility on the local education agencies (LEA) and individual school psychologist for determining if observed PSW warrant a classification of SLD. The goal of the final survey section was to determine if Georgia school psychologists were incorporating empirically-based models in their evaluation of PSW as part of the SLD eligibility process. As stated previously, all data in this section were initially analyzed using a chi-square analysis to determine if the proportions of responders in each category significantly differ from chance. Chi-square analyses were compared with the same four independent variables as the ordinal logistic regression models. Following completion of chi-square analysis, the majority of data did not meet all assumptions necessary for the chi-square tests to be considered

valid, primarily due to inadequate responses within some independent variable subgroups. Therefore, results were analyzed and presented as descriptive statistics.

Of the 315 psychologists who chose to respond to this question, 64 percent (*n* = 201) stated that they currently use a formal alternative research-based approach in their evaluation for patterns of strengths and weaknesses when establishing SLD eligibility, while 36 percent (*n* = 114) stated they do not. As Table 6 indicates, the use of Cattell-Horn-Carroll (CHC) based operational definition of SLD, which is grounded in CHC theory, was, by far, the most prominent approach selected by Georgia school psychologists. Although considerably less, the second most frequently selected approach was the use of RTI and cognitive hypothesis testing based in the Concordance-Discordance theory.

Table 6

Research-based Approach Most Frequently Selected

Criteria	*n*	Percent
CHC-Based Operational definition of SLD (CHC Theory)	128	62.4
RTI and Cognitive Hypothesis testing for identification and intervention of SLD	27	13.2
Discrepancy/Consistency approach to SLD identification (PASS Theory)	19	9.3
Evidence-based differential diagnosis and treatment of reading disabilities with and without commodities in oral language, writing, and math (Evidence-Based Theory)	11	5.4
I am not aware of any of these	10	4.9
Other	10	4.9

The majority of psychologists who indicated they did not use a research-based approach when assessing PSW cited a lack of familiarity with various approaches as their

primary reason. Table 7 summarizes the descriptive statistics of the various explanations psychologists provided for not using an empirical approach to the assessment of PSW.

Table 7

Reason for Not Utilizing a Research-Based Approach Most Frequently Selected

Criteria	*n*	Percent
I am not familiar with this type of approach	46	41.1
I do not think they are useful	4	3.6
I am not trained in how to use alternative research based approaches	27	24.1
I am not allowed by my district to use alternative research-based approaches	13	11.6
I do not think federal regulations allow for the use of alternative research-based approaches	2	1.8
Other	20	17.9

Psychologists indicating they did not use an empirically-based approach for evaluation of PSW were asked to briefly describe the method they were using for analyzing PSW. Psychologists' responses were difficult to analyze due to their diverse and multifaceted nature. Therefore, frequency data indicated two to four areas of analysis selected by a single psychologist. Below is a sample of psychologists' responses to clarify the multiple informal methods reported to analyze PSW:

- Within the RTI process we analyze error patterns in student work. We also look at teacher assessment of standards and progress toward standard achievement. Within the formal psych educational component, there is careful monitoring of error patterns and of behaviors students demonstrate when giving responses. Additionally consideration is given to common processes that underlie subtest performances, as well as looking at actual individual standard score discrepancies.

- Just looking at the scores and seeing if there is a general discrepancy (approximately 10 standard points), which is why they always qualify. We (in my district) are always worried about "in the court of law" since the discrepancy is not defined clearly in the regulations. Who are we to define it? (in the court of law, we may be faulted).
- Currently, I am using cognitive, adaptive, social/emotional and achievement measures and index scores to analyze patterns of strengths and weaknesses.
- Standards based on school system practices.
- We are using a roughly 10-point difference between IQ and processing scores to indicate significant differences.
- Discrepancy model.
- I examine academic achievement and see if processing strengths and weaknesses match the child's classroom performance.
- In the area of processing, we typically administer processing measures including things like CTOPP, subtests of WJIII Cog, visual perceptual measures, memory and learning measures. Instead of using strict cut-offs or a cross battery spreadsheet -- we look more holistically for a pattern of strengths and weaknesses. Are there areas well below average and areas that are at least average. The pattern of strengths and weaknesses also appears to refer to achievement so we look for a pattern of strengths and weaknesses there as well.

Response analysis resulted in nine categories. However, as the examples above indicate, frequently a single response could be classified in multiple categories. Following analysis, the majority (46.2 percent) of psychologists reported administering and analyzing various forms of cognitive processing assessments. Frequently, responses involved methods for analysis including, “looking at scores” or “using professional judgment” to determine if a significant pattern of strength and weakness existed. Table 8 summarizes the categories of responses from the 36 percent of psychologists who reportedly are not currently utilizing a formal procedure for the analysis of cognitive processing assessment data in their analysis for PSW. Appendix E provides the comprehensive list of all psychologists’ responses.

Table 8

Techniques reported by psychologists for evaluation of patterns of strengths and weaknesses

Criteria	*n*	Percent
Cross Battery	10	9.4
Discrepancy	4	3.8
General Processing Analysis	49	46.2
Inter-Individual Comparison	21	19.8
Intra-Individual Comparison	33	31.1
Multiple Source Comparison	40	37.7
Standards based Assessment	2	1.9
Subtest Analysis	14	13.2
Other	3	2.8

Chapter Summary

The federal definition of SLD has remained essentially unchanged for the past 30 years. Additionally, federal and state regulations have utilized somewhat vague and ambiguous terms when establishing classification criteria for SLD. IDEIA, provides three major options for the classification of SLD, including: (1) discrepancy between cognitive ability and academic achievement, (2) Response to Intervention (RTI), and/or (3) the use of other alternative research-based procedures (Flanagan & Alphonso, 2011). Georgia, however, has mandated that the IQ-Achievement discrepancy model is no longer recognized as an acceptable operational component in the classification of SLD. The state of Georgia requires RTI with additional assessment of cognitive processes, as well as, psychologists' professional judgment to determine if the student exhibits a *pattern of strengths and weaknesses* in performance prior to determining eligibility for a SLD.

The objective of this research study was to provide straightforward insight into the perceptions of Georgia school psychologists regarding the various operational components, assessment practices, and the use of RTI for determining SLD eligibility. Additionally this study explored if psychologists' perceptions could be linked to any of the established explanatory variables including the following: population served, RTI vs. non-RTI school, years since completion of last degree, and affiliation with state and/or national professional organization.

Assessment Practices and Classification Criteria Used to Operationalize SLD

Psychologists' perceptions regarding the use of cognitive ability/IQ achievement discrepancy scores as an assessment practice for both the operationalization of SLD

classification and as a method for defining the learning needs of the SLD student were most significantly predicted by the professional organization affiliation variable. Psychologists reporting membership in Georgia-professional organizations were significantly more likely than members of national organizations to select *agree/strongly agree* that IQ/cognitive ability-achievement discrepancy should be the defining feature of special education eligibility under the category of SLD. Additionally, psychologists with only a state membership were significantly more likely than members of national, both, or psychologists with no professional membership to *agree/strongly agree* that cognitive ability-achievement discrepancy is useful because it is the one unique feature of learning disabilities that makes SLD distinct from other disability categories. Similarly, members of Georgia only and psychologists with no professional affiliation were significantly more likely to *agree/very much agree* that the instructional needs of students who present with discrepancies between cognitive ability and achievement are qualitatively different than students with similar learning difficulties who present with low cognitive scores which are commensurate with their achievement abilities (i.e., slow learners).

The second significant predictor variable observed when analyzing psychologists' assessment practices and classification criteria used to operationalize SLD was years since completion of most recent degree. In many cases this could be interpreted as years of experience; however, this variable was analyzed according to the reported year that each psychologist received their highest degree. For each year since completion of degree, OLR results indicated an increased likelihood that the responding psychologists would *disagree/very much disagree* that IQ-achievement discrepancy criterion was useful, because it is the one unique feature that makes SLD distinct from other special

education classifications. Similarly, for each additional year since completion of most recent degree, the odds of a responding psychologist *disagreeing/very much disagreeing* that children with greater discrepancies between their cognitive ability and achievement have more significant learning difficulties or require distinctly different instruction than students classified as slow-learners (globally low cognitive ability and achievement) increased. The final significant finding of years since completion of most recent degree predictor variable was that for each year increase responding psychologists were more likely *to agree/very much agree* that poor readers who are also slow learners should be classified under the SLD eligibility category.

The only question with significant findings concerning the operationalization of SLD in which the predictor variable, psychologists' rating of the quality of the RTI program in the district they worked, was psychologists' perception concerning RTI as the defining feature of special education eligibility under the category of SLD. Psychologists from districts with no RTI or less optimal RTI programs were significantly less likely to agree with this statement.

Perceptions of RTI and the Use of this Approach for SLD Identification

Two predictor variables were found significant following OLR analyses of the survey section concerning psychologists' perceptions regarding the implementation of their RTI program and the use of this model for SLD identification. By far the most prominent significant predictor variable was the quality of the RTI program in the responding psychologists' district. Of responding psychologists, 58 percent reported working in districts with no RTI or less than optimal RTI programs. This group consistently responded on the *poor* end of the scale regarding the availability of resources

needed for RTI implementation, their capability to engage in various RTI roles including leadership, training, and modeling direct instruction. Additionally, this group's responses were significantly on the *not desirable* end of the scale for fulfilling various RTI responsibilities.

Years since completion of last degree was found to be a significant predictor variable solely in the area of providing leadership, training, and organization of their district's RTI program. As years since completion of most recent degree increased, psychologists' perceived ability and desire to engage in this leadership role also increased.

Use of Research-Based Approaches for Analyzing Cognitive Processes and PSW

The majority (64 percent) of responding psychologists reported utilizing a research-based approach in their analysis of cognitive process for PSW. Of those psychologists, 63 percent reported using CHC based theory in their analysis process. The majority of psychologists whom reported not employing research based techniques in their analysis of cognitive processing testing data for PSW cited the reason as a lack of familiarity with the technique (41 percent) or lack of training (24 percent). Analysis of the responses from psychologists who reportedly do not use an empirically-based model for analyzing cognitive assessment data to determining PSW concluded that the majority (49 percent) administer general processing assessments and multiple source comparisons (40 percent) to determine if processing strengths and weaknesses are significant enough to warrant placement in special education under the classification of SLD.

CHAPTER 5
SUMMARY, CONCLUSIONS AND IMPLICATIONS

Summary

The conceptual definition of specific learning disabilities (SLD) has remained essentially unchanged since it was inserted as part of the Education of all Handicapped Children Act in 1977. However, with the reauthorization of IDEIA, the operational definition or standards of classification used in the identification of students as learning disabled changed. IDEIA explicitly has stated that the use of IQ-Achievement discrepancy is no longer a required classification model for determining eligibility under the special education eligibility of specific learning disability (SLD). More relevant to this research, Georgia law prohibits the use of IQ-Achievement discrepancy while explicitly mandating the implementation of RTI, assessment of cognitive processes, and the use of professional judgment to assess for *patterns of strengths and weaknesses* in performance and achievement prior to determining an SLD classification. The wording of both IDEIA and Georgia law provide no specific procedures (i.e., operational definition) for determining SLD eligibility. As a result, this responsibility falls to each local education agency and ultimately individual school psychologists.

The school psychologist plays a vital role in the implementation of RTI. Additionally, school psychologists are the leading experts in the area of assessment of cognitive processes and the interpretation of multiple forms of outcome data for establishing SLD eligibility. The first step in achieving consistent identification of students presenting with a possible learning disability is to develop an understanding of school psychologists' perceptions and beliefs, as well as, the identification procedures

used in SLD assessment and eligibility determination. It is imperative that the perceptions and assessment practices of school psychologists across Georgia be understood in an effort to improve the accuracy, fidelity, and consistency of SLD identification methods, as well as identify possible training institution and professional development needs state-wide.

This study administered an instrument used in three previously published studies (Mechek & Nelson, 2007, 2010; Speece & Shekita, 2002) to survey practicing school psychologists across the state of Georgia. The researcher selected an ordinal logistic regression design to answer the following research question: What are the perceptions, practices, and operational components used by practicing Georgia school psychologists for determining eligibility under the classification of specific learning disability in all eight domain areas (oral expression, listen, think, speak, read, write, spell, mathematical problem solving, and/or calculation)? In addition, the following sub-questions helped clarify the results:

1. What is the probability that the assessment processes perceived as important by Georgia school psychologists for establishing SLD eligibility can be accounted for by various explanatory variables including: population served, RTI vs. non-RTI school, years since completion of last degree, and membership in a state/national professional organization?
2. What is the probability that the perceptions of Georgia school psychologists' regarding the use of RTI for establishing SLD eligibility can be can be accounted for by various explanatory variables including: population served, RTI vs. non-RTI

school, years since completion of last degree, and membership in a state/national professional organization?

3. Are practicing Georgia school psychologists incorporating empirically-based models in their evaluation of *patterns of strengths and weaknesses* as part of the SLD eligibility process?

An ordinal logistic regression (OLR) research design was selected based on the nature of the measurement scale used throughout the survey to determine the outcome variables. The outcomes of interest in this research (e.g., school psychologists' perceptions) were measured predominantly on a four-point Likert scale resulting in categorical dependent variables with ordered levels. OLR design allowed the researcher to compare the probability of a particular response occurring at or above a specified level of the ordinal response variable as a function of established predictor (independent) variables (DeCarlo, 2003; Liu, 2008). Predictor variables used for all OLR analyses throughout this study included population served, RTI vs. Non-RTI school, years since completing last degree, and membership in state/national professional organization. Additionally, this study explored if psychologists were currently using empirically-based models when assessing cognitive processes and evaluating for *patterns of strength and weaknesses*.

Analysis of Research Findings

Clear trends emerged when predictor variables were analyzed using OLR analyses. The predictor variable, population served (i.e., elementary only vs. non-elementary) was the one variable that did not reveal any significant findings throughout this study. All other predictor variables were found to yield varying levels of significant

findings. Questions related to psychologists' assessment practices, their use of cognitive ability scores, and psychologists' perceptions of classification of SLD, revealed affiliation with a state or national professional organization as by far the most frequently observed significant, predictor variable. Results indicated that members of national professional organizations only were consistently more likely to disagree with the ongoing use of cognitive ability achievement discrepancy in operationalizing SLD than psychologists with membership in Georgia professional associations only. When the topic of cognitive ability discrepancy was further explored, again, members of only Georgia-based professional organizations continued to assert that cognitive ability achievement discrepancy was the unique feature that makes SLD distinct from all other disability categories. These significant findings were consistent across all other professional affiliation (i.e., national, both, none) compared to psychologists who had membership in Georgia-only professional organizations. On a few occasions, significant results from the predictor variable years since completion of most recent degree paralleled the findings observed with members of national professional organizations. As the years since completion of most recent degree increased, respondents were more likely to respond in a similar fashion as psychologists with only national professional affiliation. Please refer to Appendix F for summary table of all OLR analyses.

Clearly these findings are not aligned with Georgia law or the state's eligibility procedures outlining the assessment and analysis requirements for classifying a student as SLD. These results do, however, appear to align with research suggesting some psychologists continue to favor the use of cognitive ability scores in their assessment and classification of SLD (Mechek & Nelson, 2010, O'Donnell & Miller, 2011). These

findings indicate that some Georgia school psychologists continue to value and possibly use cognitive achievement discrepancy as a means of establishing SLD eligibility. Additionally, psychologists who have membership in Georgia professional organizations appear to agree with the ongoing use of cognitive ability and achievement discrepancy significantly more often than those with membership in only National organizations.

Psychologists' perceptions of the use of RTI in the operationalization of SLD, as well as, their desire and capability to fulfill various leadership roles and responsibilities within an RTI program, were significantly impacted by the predictor variable related to the quality of the RTI program in the schools that respondents worked. Psychologists working in districts with no RTI program or less functional models clearly indicated they lack the financial resources, skilled personnel, and time, to implement a quality RTI program more frequently than psychologists working in schools with fully functional RTI programs. Interestingly, responses from psychologists working in less functional RTI programs also indicated *fair/poor* significantly more often when asked about their own ability to provide highly effective reading, math, and writing instruction. These findings may help to explain why psychologists working in less optimal RTI programs were significantly more likely to select *disagree/strongly disagree* when asked if RTI should be a defining feature for special education eligibility under the classification of SLD.

As stated previously, chi-square analyses were performed on the three multiple choice questions regarding psychologists' use of alternative research-based approaches in their analysis of cognitive processing assessments for PSW. Results from these analyses were inconclusive because much of the data did not meet the assumptions necessary for the chi-square tests to be considered valid. Some clear trends did become apparent,

however, following the analysis of descriptive statistical analysis. More than half (64 percent) of responding psychologists specified that they currently use an alternative research-based approach in their evaluation for PSW. Similarly, 59 percent of psychologists selected assessment of cognitive processing deficits evidenced through PSW as the most important criteria for establishing SLD classification. When provided a list of possible research-based approaches used in analysis for PSW, the use of CHC-based operational definition of SLD (based in Cattell-Horn-Carroll theory) was by far the most frequently selected (62 percent) model reportedly used by psychologists.

Similarly, (88 percent) of all responding psychologists *agree/strongly agree* that cognitive ability scores are useful for understanding the nature of a child's learning disability, and 94 percent stated that IQ/cognitive ability has significant implications for how one can learn and be taught academic concepts. These results are interesting given that the CHC-based model does not employ the use of full-scale IQ/cognitive ability scores as part of the analysis process. The CHC-based operational definition of SLD theory integrates general cognitive ability comprised of a combination of broad and narrow cognitive processing abilities. Findings from this study appear to indicate that although psychologists are beginning to embrace the use of cognitive processing analysis for evidence of PSW, they continue to also value incorporating the traditional full-scale cognitive ability scores as part of their assessment practice and in the operationalization of SLD.

Discussion of Findings

Several studies presented in the literature review prove salient to the findings in this research. Three of the studies (Speece & Shekita, 2002; Mechek & Nelson, 2007,

2010) presented in the literature review used essentially the same survey instrument administered in this research. Thus, this provides a unique opportunity to compare the responses of practicing psychologists from various work environments over time. The following discussion will compare the findings from this study to other pertinent research presented in the literature review.

Operational Definitions and Assessment Practices

The two definitional components most frequently selected by Georgia psychologists as the most important to include in the operationalization of SLD were the use of RTI (58.3 percent) and cognitive processing deficits evidenced through PSW (86.3 percent). By far, the majority of respondents perceived evidence of distinct patterns of strength and weaknesses verified through cognitive processing deficits as the primary defining feature in the operationalization and classification of SLD. This is an increase from the 77.6 percent agreement found in Mechik and Nelson's 2007 survey and almost twice as large as Speece and Shekita's (2002) findings (49.5 percent) using the same survey. These results appear to indicate that responding Georgia school psychologists have moved in the direction of established Georgia regulations and favor the assessment and analysis of cognitive processes for the classification of SLD.

The second most frequently selected definitional component for the operationalization of SLD was the use of RTI. Results indicated that 58.3 percent of Georgia psychologists agree that RTI is an important feature. Interestingly, these findings are markedly lower than both Speece and Shekita's (2002) (67.3 percent) and Mechik and Nelson's (2007) (81.1 percent) earlier findings. In 2007, Mechik and Nelson concluded that the significant increase in psychologists' selection of RTI from 2002 to

2007 was possibly due to the notoriety gained by RTI during that time period. However, with a little over half of respondents (58.3) stating that they perceive RTI as a defining feature of special education eligibility under the classification of SLD, findings from this research indicate, Georgia psychologists' perceptions of RTI as have fallen well below the 2002, outcome (67.3 percent) of Speece and Shekita. These results may indicate that in the six years since Mechik and Nelson completed their study, the challenges and limitations of long-term RTI implementation have become a reality. These findings were further clarified by analysis of OLR data. OLR findings clearly indicated that the quality of the RTI program in the schools in which a responding psychologist worked was the single significant predictor variable consistently observed throughout the survey's RTI section. Psychologists working in less functional RTI programs were significantly less likely to *agree/strongly agree* that the RTI model is an important defining feature in the operationalization of SLD. These findings strongly imply that the quality of the RTI program significantly impacted psychologists' perceptions of validity of the use of RTI in the operationalization of SLD.

Usefulness of cognitive ability achievement discrepancy. Given that the state of Georgia no longer allows the use of cognitive (IQ) achievement discrepancy as part of the classification and eligibility determination for learning disabilities, findings regarding the perceptions of Georgia psychologists concerning this option for operationalizing SLD are worth exploring. Previous research revealed strikingly different results concerning the use of cognitive ability achievement discrepancy in the classification of students as SLD. In 2007, Mechik and Nelson reported 61.9 percent of responding psychologists *agreed/strongly agreed* with the use of cognitive achievement discrepancy in the

classification of students as SLD. This figure was twice as high as Speece and Shekita's (2002) earlier findings (30.2 percent). Results from this research concluded that currently a mere 20.9 percent of responding Georgia school psychologists agreed with the use of cognitive achievement discrepancy as a defining feature in the operationalization of SLD. These findings are not surprising, given that Georgia law no longer allows the use of this assessment practice when classifying a student as SLD. Although 20.9 percent is a relatively small number of respondents to select this assessment practice, results do appear to indicate that some school psychologists practicing in Georgia continue to perceive cognitive ability achievement as the preferred practice in the operationalization of SLD. This understanding could be viewed as important to the Georgia Department of Education as future decisions regarding special education policy and continuing education are considered.

In 2011, O'Donnell and Miller found a positive correlation between psychologists' exposure to RTI and their acceptance of the RTI model, as well as a negative correlation between psychologists' exposure to RTI and acceptance of the IQ-Achievement discrepancy model. OLR findings from this research indicate that RTI exposure did not significantly impact Georgia psychologists' perceptions regarding the use of cognitive ability achievement discrepancy in the operationalization of SLD. Results however, did indicate a single significant predictor variable professional membership affiliation, impacted respondents' perception of the continued value of cognitive ability achievement discrepancy for operationalizing SLD.

Ordinal logistic regression analyses revealed several interesting and significant findings regarding psychologists' perceptions of the use of cognitive ability and

achievement discrepancy scores. Results indicated that members of national-only professional organizations or psychologists with no professional membership affiliation were significantly more likely to *disagree/strongly disagree* with the use of cognitive ability and achievement discrepancy in the operationalization of SLD than members of Georgia-only professional organizations. In similar findings, psychologists who are members of a national professional organization, those with no professional membership affiliation, and, those who were members of both national and state organizations were significantly more likely than members of only a Georgia professional organization to *disagree/strongly disagree* that cognitive achievement discrepancy is useful because it is the one unique feature that makes SLD distinct from other classification criteria. Additionally, the same subgroup, psychologists with Georgia-only membership, were significantly more likely to *agree* that children with significant cognitive ability and achievement discrepancies have qualitatively different instructional needs than students classified in the category of slow-learner. Interestingly, the only other significant predictor variable consistent across these areas was years since completion of most recent degree. For each year since a psychologist had completed his/her most recent education, the likelihood of him/her *disagreeing* with those statements increased. Thus, psychologists who have been out of school longer tended to disagree with the value of assessing for cognitive ability achievement discrepancies in the operationalization and classification of SLD. These OLR results provide vital new information in understanding the variables that appear to currently influence the assessment practices and classification techniques of practicing school psychologists within the state of Georgia.

These results provide Georgia professional organizations with valuable information regarding the current perceptions of their members regarding the ongoing use of cognitive ability achievement discrepancy as a viable assessment and diagnostic practice. Additionally, these results may warrant a thorough review of the National Association of School Psychologists (NASP) position statement, assessment guidelines, and the emphasis of ongoing professional development toaccount for the apparent discrepancy between the perceptions and assessment practices of national versus Georgia professional organizations.

Perceptions regarding efficacy of cognitive ability assessments. Analysis of psychologists' perceptions of the use of cognitive ability assessments for SLD classification revealed that a clear majority (88 percent) of responding Georgia school psychologists continue to value the use of full-scale cognitive ability (IQ) scores. Speece and Shekita (2002) found 42 percent of responding psychologists in their study agreed that full-scale cognitive ability score alone was useful in understanding a child's learning disability, while 48.3 percent of respondents in Mechik and Nelson's (2007) study found full-scale scores valuable. Results of the current study indicated that, while the majority of Georgia school psychologists appear to be moving away from the use of cognitive ability achievement discrepancy model, they continue to value full-scale cognitive ability scores. Given that, within the state of Georgia, SLD eligibility requirements include the use of RTI and assessment of cognitive processes to identify PSW when establishing SLD eligibility, these results are somewhat surprising. As multiple scholars on the topic of the research-based models used in the assessment and evaluation of PSW posit, the only practical use of full-scale IQ or cognitive ability scores is for the diagnosis of an

intellectual disability. Therefore, full-scale cognitive ability scores are considered irrelevant in all PSW models (Berninger 2011; Flanagan, Fiorello, & Ortiz, 2010; Hale et al., 2011; Hanson et al., 2009; Naglieri, 2011).

Further analysis of psychologists' perceptions of cognitive ability testing revealed that they preferred the use of factor index scores (90.9 percent) and subtest analysis (86.9 percent) for understanding the nature of a learning disability. These results indicated a substantial increase in this assessment practice from Mechek and Nelson's 2010 study which revealed responding psychologists' perceptions of the value of factor index scores was 62.2 percent and subtest analysis was 59.8 percent. Ordinal logistic regression results from this reserach provided further clarification of variables which appear to have impacted psychologists' perceptions. Results revealed that psychologists who were members of only national professional organizations or had no professional membership were significantly more likely than members of Georgia professional organizations to *disagree* with the use of subtest analysis in their assessment of learning disabilities.

One important difference between Mechek and Nelson's (2010) study that may account for the differences observed in this study is the research population. Mechek and Nelson's research population was comprised solely of members from the National Association of School Psychologists (NASP). The population from this study resulted in only 7.3 percent of responding psychologists reporting national-only professional membership, while 37.7 percent reported both national and state, and 36.7 reported only state professional membership affiliation. These findings contribute to the understanding of the assessment practices of Georgia school psychologists, specifically indicating

Georgia psychologists appear to value and continue to utilize the assessment of cognitive ability in the classification of students with SLD.

This apparent discrepancy between the opinions of state professional organizations and NASP may be of interest to Georgia professional organization leadership. A review of NASP professional development and position statements may reveal how or why this discrepancy persists. Additionally, Georgia Department of Education may find these results informative as they develop and design ongoing statewide training and professional development for Georgia school psychologists.

Perceptions of RTI

The passage of IDEIA resulted in the elevation of RTI to a prominent role in the SLD eligibility process. Although current literature provides a comprehensive overview of the basic construct and methodology for establishing a RTI program (Fuchs & Fuchs, 2006; Ikeda, 2012; O'Connor & Freeman, 2012; VanDerHeyden, 2007; Witt, & Gilbertson, 2007; Ysseldyke, 2005), the literature is replete with concerns regarding the limited consistency of RTI practices across schools, districts, and states (Berkeley, Bender, Peaster, Gregg, & Saunders, 2009; Hale et al., 2010). It is important to recall that Georgia is one of only four states in the nation requiring RTI prior to establishing SLD eligibility (Zirkel & Thomas, 2010). Findings from this current study suggest that only a little more than half (58.3 percent) of responding Georgia psychologists *agreed/strongly agreed* that RTI should be one of the defining features of SLD classification. The results presented below begin to provide an understanding of why many school psychologists in Georgia may not have embraced this model.

Abilities and resources of schools for implementing RTI model. Findings from this study indicated that the majority of school psychologists in Georgia perceive that there is an overall lack of resources available to implement a quality RTI program. More than 80 percent of respondents perceived their district as having inadequate financial resources (80.1 percent), amount of personnel (82.1 percent), and time (85 percent) necessary to implement an effective RTI program. When asked about the availability and quality of support personnel, responding psychologists perceived special education teachers superior to general education teachers in their ability to provide effective reading, math, and writing interventions with fidelity. Analysis of the findings revealed that 72.5 percent of responding psychologists perceived special education teachers' skills as *good/excellent* while only little more than half (53.1 percent) perceived general education teachers possessing similar abilities. Although the majority of psychologists' responses revealed the perception of deficient resources, results from OLR analysis revealed psychologists' perceptions were significantly impacted by the quality of the RTI program in their district.

Providing that RTI continues to be as one of the defining features for operationalizing SLD within the state of Georgia, it is imperative that state and district-level leadership ensure adequate instruction and interventions are occurring at Tier 2 and Tier 3. Ensuring adequate instruction is the only way that policy makers and district leadership can be assured that the SLD eligibility process is conducted with fidelity and the SLD population is neither over- nor under- identified.

Responding psychologists presented with significantly different perceptions of RTI resource availability based on whether they worked in schools that were

implementing a quality RTI program with good fidelity. OLR results revealed that psychologists working in schools with less functional or no RTI programs were significantly more likely to select *poor* when rating the ability of special education teachers, and all other resources including level of personnel, availability of financial resources, and time necessary for RTI implementation. These findings may begin to confirm the caution presented by multiple scholars and professionals working in the area of learning disabilities who have questioned the long-term fidelity and sustainability of RTI (Fuchs & Vaughn, 2012; Hughes & Dexter, 2011; Machek & Nelson, 2007; Yesseldyke, 2005; Zirkel, 2011).

Psychologists' ability and desirability to engage in RTI roles. Respondents' perceptions of their ability to take on roles generally associated with RTI models were frequently more favorable than their desire to assume those roles. For example, of responding psychologists, 72.8 percent stated they possessed *good/excellent* capability for taking on a leadership role in the organization and professional training within an RTI program, whereas only half (50.5 percent) found this role *desirable/very desirable*. Most psychologists perceived their ability to consult to be higher than their capacity to directly engage in various RTI roles. Furthermore, psychologists' desire to actually perform various academic-based tasks within an RTI model was quite limited. This was particularly true regarding the provision of effective instruction. These findings were quite similar to Machek and Nelson (2010), who reported that 60 percent of surveyed psychologists had a positive perception of their ability to consult regarding effective reading instruction, while only 30 percent felt they possessed the skills to actually provide that instruction. Findings from this research clearly indicated that respondents

perceived themselves capable of providing classroom management and behavioral consultation in far greater numbers than in any academic areas. Additionally, they indicated a significant desired to fulfill the role as a behavioral consultant. Conversely, as indicated in Table 3, psychologists' perceived skills and abilities in the area of academic consultation or direct instruction were quite limited.

Ordinal logistic regression results regarding psychologists' perceived ability and desire to perform various roles within the RTI model revealed two areas of interest. Psychologists working in schools with no RTI or limited programs were significantly more likely to rate both their ability and desire to engage in academic based roles as *fair/poor*. Further research regarding the impact of psychologists' perceptions of their ability and desire to perform various RTI roles, especially in the area of academics, would provide a needed level of understanding of the impact of these beliefs on the schools RTI program. A clear lack of resources appears to be one contributing factor indicating why psychologists' perceive their RTI program as less functional. Additional research exploring the impact psychologists' lack of ability and desire to fulfil various academic RTI roles has on the faithfulness of the RTI program is warranted.

Years of experience was an additional significant predictor variable. For each year since completion of most recent degree, psychologists' perception of their capability and desire to provide leadership in RTI training increased. These results were different than O'Donnell and Miller's (2005), who concluded work setting (e.g., elementary vs. non-elementary), and Machek and Nelson (2007), who concluded self-reported level of knowledge, as the variables impacting psychologists' acceptability of RTI. Perhaps these various results are best explained by prominent researchers in this field. As Burns,

Vanderwood, and Ruby (2005) concluded, states have primarily assigned responsibility for the design, training, and implementation of RTI programs to individual districts and at times, individual psychologists, resulting in significant inconsistencies in all areas of the model. Additionally, O'Connor and Freeman (2012) posited that without effective district coordination, decision-making, and support for RTI, there is an increased potential for the model to become fragmented and unfocused, and thereby unsustainable. As long as the SLD classification process in the state of Georgia continues to depend on a quality RTI program conducted with good fidelity, district and state leaders need to ensure that an adequate level of leadership is present for training, organizing, and supervision of RTI program development and implementation.

Approaches for Analyzing Cognitive Processes and Evaluation of PSW

In 2006, the third option included in IDEIA for identifying students with SLD (§300.307[a]) was the use of *alternative research-based procedures*. As Flanagan and Alfonso (2011) pointed out, this relatively vague term has been interpreted by many experts to be the assessment and analysis of neuropsychological processes and various forms of academic achievement data to evaluate for PSW. Although multiple empirically-based approaches for evaluating profiles of strengths and weaknesses in cognitive processing skills have been proposed, the state of Georgia has not chosen nor recommended a particular empirically-based model for determining PSW. Therefore, guidelines for psychologists' interpretation of the comprehensive cognitive processing assessments are not currently available.

Of responding psychologists, 64 percent reported currently using a formal method for analyzing psychological processing assessments and other forms of data to determine

the presence or absence of PSW for SLD eligibility. This is a dramatic increase from Kerrigan's (2011) conclusion that 17 percent of psychologists responding to a nation-wide survey were able to correctly identify that three options were available in IDEIA for SLD identification. Additionally, only 25 percent of psychologists responding in Kerrigan's (2011) study reported using an alternative research-based approach in their SLD identification process. Of the five research-based approach options provided to psychologists in the survey, 62.4 percent stated they currently use the CHC based operational definition of SLD (Flanagan, Alfonso, & Mascolo, 2011).

The CHC-based operational definition of SLD is arranged into five levels requiring extensive pieces of data defining the characteristics and nature of a student's academic performance, response to RTI intervention approaches and outcome data, specific neuropsychological processing assessments selected and administered based on collected academic and RTI data, and finally the integration of all data collected at each level to conduct an analysis of a pattern of strengths and weaknesses consistent with SLD. Findings indicating this model as the one most frequently used by Georgia school psychologists were unexpected, given the outcome results concerning psychologists' perceptions of the current RTI program in their schools, the use of full-scale cognitive ability scores, and their significant lack of time. Further research into the apparent contradictions between psychologists' assessment practices and specific operational requirements of formal research-based methods for evaluating for PSW is warranted.

Of responding psychologists, 36 percent indicated that they did not currently use a formal empirically-based approach in their assessment of PSW. Of these respondents, 65.2 percent cited lack of familiarity or training in how to conduct a formal alternative

based approach when analyzing PSW for establishing SLD eligibility. These results provide valuable knowledge to psychology training institutions and the Georgia Department of Education regarding areas of needed training and professional development.

Conclusions and Implications

Operationalization provides a process for the identification and classification of concepts that have been formally defined (Flanagan, Alfonso, & Mascolo, 2011). This research has focused on developing and understanding of the perceptions, practices, and operational components used by practicing Georgia school psychologists for determining eligibility under the classification of SLD in all eight domain areas. This research will provide training institutions and the educational leaders of Georgia with valuable information that could improve the accuracy, fidelity, and consistency of SLD identification methods statewide. The conclusions that can be established below are based on the findings from this research.

Operational Definition and Assessment Practices

The majority of responding psychologists in Georgia value the assessment of cognitive processes analyzed for evidence of distinct patters of strengths and weaknesses as the favored defining feature in the operationalization of SLD. Additionally, a clear majority of psychologists continue to value full-scale cognitive ability scores, factor index scores, and subtest analysis. Finally, although the numbers are limited, approximately 20 percent of responding psychologists continue to value the use of cognitive achievement discrepancy as a means of establishing SLD eligibility. The predictor variables which appeared to significantly influenced psychologists' assessment

practices were professional membership affiliation, and on a much smaller degree, years since completion of degree. Psychologists with membership in only national organizations were much less likely to favor the use of individual subtest analysis or the use of cognitive ability achievement discrepancy in any decision-making or predicting of a student's instructional needs. The reasons for these differences are unclear at this time and warrant further investigation.

Response to Intervention

A little over half of responding psychologists *agree/strongly agree* that RTI should be a defining feature in the operationalization of SLD. Furthermore, a clear majority of psychologists' perceived an overall lack of resources including financial, personnel, and time needed to implement an effective RTI program. A single variable, quality of the RTI program in the schools and districts which psychologists worked, consistently predicted this trend of responses. The less effective the RTI program, the less favorably psychologists viewed its use in the operationalization of SLD.

Psychologists' perceived abilities to take on various roles typically associated within an RTI model were consistently higher than their desire to assume those roles. This trend was stable across all questions pertaining to leadership, progress monitoring/data tracking, and consulting or providing highly effective instruction. Additionally, psychologists perceived themselves better able to consult than actually engage in those tasks. Psychologists' perceptions were quite different in the area of behavioral supports and classroom management. A clear majority of psychologists' feel capable and qualified to provide behavioral supports and, possibly just as important, they desire to fulfill this role.

Psychologists' perceptions of all areas of RTI were consistently predicted based on the quality of the RTI program in the schools they worked. Psychologists who reported working in schools with less functional RTI or no RTI were significantly less likely to make a favorable selection regarding the merits of an RTI model or the use of RTI in the operationalization of SLD. Unfortunately, almost half (44.6 percent) of responding psychologists were in this category. These findings are alarming given that RTI is one of the two variables currently allowed in the classification of SLD students in Georgia. Further research into the functionality and true implementation of RTI programs across the state of Georgia is warranted.

Given the current fiscal climate and general cutbacks in education, the effect of the RTI mandate on school psychologists is currently in a rather decisive period nation-wide. This research began to answer several questions regarding the status of RTI within the state of Georgia. However, one very important question remains unanswered: Will RTI become a true reform that informs the decision-making process in the classification of SLD and many other reforms or be a brief blip on the educational radar screen that dwindles away? If the state of Georgia elects to require that RTI play a vital role in the operationalization of SLD, it is imperative that the state also ensures that schools have the resources, knowledge, and specialized personnel to conduct an RTI program with consistency and fidelity. RTI in its purist form is not a program or a state-based initiative; it has the potential to be a process founded in decision-making that is integrated throughout each district as the basis of the school improvement process. This evolution requires substantial educational reform, including a significant change in the mindset of leaders at all levels of the educational system. These are very difficult decisions given

the current economic climate; however, if state leadership is not able to support the level of resources and funding necessary to establish fully-functional RTI programs, they may possibly need to reconsider the emphasis of this model in the operationalization of the largest special education classification area in the state.

Analysis of Cognitive Processes and Evaluation of PSW

More than half of the responding psychologists' reported utilizing a formal method in their analysis of psychological processing assessments and other forms of data to determine the presence or absence of PSW when determining SLD eligibility. A large majority selected the CHC-based operational definition of SLD as the method they currently use in their analysis. This finding was unexpected due to the substantial assessment requirements, as well as the labor-intensive parameters outlined in the CHC-based operational definition of SLD. The extensive requirements of this model compared to psychologists' survey responses in areas such as assessment practices, interpretation of results, lack of support for RTI, and time constraints place on psychologists warrant further research into the apparent contradiction between the reported assessment practices of psychologists and the rigorous guidelines established in various formal research-based methodologies for evaluating PSW.

Over one-third of responding psychologists stated they did not use a formal method in their analysis of PSW. A large majority of these psychologists cited a lack of training and familiarity with formal alternative based approaches as the reason they were not used. These findings provide valuable information regarding additional training at both the university-level and to define statewide professional development needs for practicing psychologists.

Limitations and Recommendations for Future Research

Scholars seeking to further investigate this topic should take the following implications and limitations of the current study, as well as recommendations for future research into account.

1. The significant response rate of Georgia school psychologists to the survey conducted within this research indicates the value and level of interest currently placed on this topic. Psychologists' appear to be eager and willing to wrestle with the complex issue of operationalizing the identification of SLD. It appears this would be a good time for professional organizations and the Georgia Department of Education to work collaboratively to achieve this goal.
2. Results from this study indicate that there is considerable inconsistency in the assessment practices and interpretation techniques currently used by psychologists across Georgia when classifying a child as SLD. This is not surprising given that psychologists have been directed to use their *professional judgment* to assess for PSW in performance and achievement prior to determining an SLD classification. A clearly defined statewide operational definition for the classification of children as SLD would eliminate several areas of concern identified by this study. A policy outlining clear classification criteria (operationalization), as well as procedures for selecting and analyzing all assessment data when establishing SLD eligibility would be beneficial to psychologists and result in increased consistency of SLD identification throughout the state.

3. This study provided a thorough overview of the general assessment practices of psychologists in the state of Georgia. However, additional in-depth understanding of how psychologists are currently synthesizing and analyzing the multiple data points (i.e., teacher/parent reports, standards-based classroom performance, performance on high-stakes tests, RTI and CBM data, cognitive ability, and cognitive processing data) to systematically determine SLD eligibility in a consistent manner is needed. Psychologists reported using empirically-based methods in their analysis of PSW; however, some of the general responses necessitate additional inquiry to fully understand the level of consistency of SLD classification techniques statewide.
4. This study did not determine the causal factor(s) for why almost half of the responding psychologists perceive that they work in districts with less functional RTI programs. Research should be conducted to fully comprehend the status of all RTI programs across the state. Developing a comprehensive understanding of the current status of RTI programs state-wide could serve to inform many budgetary and academic reform decisions.
5. This researcher, as well as the empirically-based studies of many other researchers as reported throughout this document have concluded that psychologists neither feel qualified nor desire to fulfill a leadership or mentoring role in the area of academic RTI. Conversely, between 80 and 90 percent perceive they are competent and do desire a role in the area of

behavioral RTI. Possibly researchers have been asking the wrong question. Rather than asking why psychologists do not feel competent in fulfilling various academic-based RTI roles, future research may consider defining which educational professional has the desire and skill-set to fulfill this role. With the right knowledge-base, leadership, and accountability, transferring the responsibility for academic-based RTI away from school psychologists may solidify their role as the expert in the assessment of psychological processes and the objective synthesis of all forms of data, including academic RTI for determining SLD eligibility.

6. Two demographic areas were underrepresented in this study. The first was psychologists working in urban schools. Although this researcher made significant effort to include psychologists working in urban environments, the research approval policies (i.e., IRB) in larger urban districts significantly restricted access to that population. The second underrepresented population was psychologists working in only middle/high schools. A very limited number of responding psychologists reported working in the middle/high school environment only with no elementary school assignment. These two factors could be related. It may be that urban schools are the only districts large enough to require a psychologist assigned solely to middle/high schools. Further research to determine if the findings of this study are consistent with the finding from these two underrepresented populations is warranted.

7. The method of measurement used throughout the survey instrument administered in this study was a four-point Likert scale. The ranking (i.e., *strongly favorable* to *strongly unfavorable*, *poor* to *excellent*) of the scales, however, was not constant throughout the survey instrument. Although this could be accounted for during the statistical analyses and interpretation process, it did require considerably more time and effort. It is recommended that future researchers considering the use of this instrument unify the ranking throughout.

DISSEMINATION

Numerous opportunities exist for the dissemination of this research. As with all dissertations, this work will be electronically published in Georgia Southern University's electronic dissertation database. Additionally, the findings will be presented as a white paper at The Georgia Association of School Psychologists 2014 state conference. This presentation will provide an opportunity for stakeholders to discuss the implications of the research findings. Additionally, the researcher plans to pursue presentations at other state and national professional symposiums. Throughout the process of gaining access to the e-mail addresses of school psychologists' across the state, some districts requested access to the research results as part of their RIB process. These districts will each receive a copy of the research. Additionally, the district that allowed and encouraged their psychologists' to pilot the survey used in this research will receive a copy. Finally, this research will be presented to several peer reviewed journals for publication. Target journals for publication will include: Journal of Learning Disabilities, Psychology in the Schools, and Learning Disabilities Research & Practice.

CONCLUDING THOUGHTS

As is the case with most things worth doing, I am not certain I would have attempted this study if I had truly internalized the level of complexity it presented. Selecting a methodology using ordinal logistic regression, compiling a comprehensive (although incomplete) list of the practicing school psychologists across the state of Georgia, and developing a thorough understanding of a field that is not my program of study, presented numerous challenges. In the end however, I am quite proud of this work and believe I have conducted research that will truly contribute to the body of knowledge in the areas of RTI and special education. I am grateful that I pursued this research and I conclude this project a stronger person and a more confident scholar.

REFERENCES

Adhearn, E. M. (2008). State eligibility requirements for specific learning disabilities. *inForum* (Brief Policy Analysis). Retrieved from: http://www.projectforum.rg/docs/StateEligibilityRequriementsforSpecific LeraningDisabilities.pdf

Allen, S. J., & Garden, J. L. (2002). Best practices in collaborative problem solving for intervention design. In A. Thomas & J. Grimes (Eds.) *Best practices in school psychology* (4th ed., pp. 565-582). Bethesda, MD: National Association of School Psychologists.

Assistance to States for the Education of Children with Disabilities and Preschool Grants for Children with Disabilities, 34 C.F.R. § 300 (2006). Retrieved from: www.gpo.gov/fdsys/pkg/FR-2006-08-14/pdf/06-6656.pdf

Bateman, B. (1966). Learning disorders. *Review of Educational Research, 36*(1), 93-119. Retrieved from http://www.jstor.org/stable/1169639

Berkeley, S., Bender, W. N., Peaster, L. G., Gregg, L., & Saunders, L. (2009). Implementation of Response to Intervention: A snapshot of progress. *Journal of Learning Disabilities, 42*(1), 85-95. Retrieved from http://ehis.ebscohost.com/eds/detail?sid=72bbb3b3-eb16-411e-b328-eae2d0cc563c percent40sessionmgr12&vid=6&hid=22

Berninger, V. W. (2011). Evidence-based differential diagnosis and treatment of reading disabilities with and without comorbidities in oral language, writing, and math. In Flanagan, D. P., & Alfonso, V. C. (Eds.), *Essentials of specific learning disability identification* (pp. 203-232). Hoboken, NJ: John Wiley & Sons, Inc.

Bernhardt, V. L., & Herbert, C. L. (2011). Response to intervention (RTI) and continuous school improvement (CSI): Using data, vision, and leadership to design, implement and evaluate a schoolwide prevention system. Larchmont, NY: Eye on Education

Bradley, R., Danielson, L. (2004). The office of special education program's LD initiative: A context for inquiry and consensus. *Learning Disability Quarterly, 27*, 186-188. Retrieved from: http://ehis.ebscohost.com/eds/pdfviewer/pdfviewer?vid=5&sid=30aec222-8b8b-46df-87d7-150f7290e5eapercent40sessionmgr112&hid=115

Burns, M. K., Vanderwood, M. L., & Ruby, S. (2005). Evaluating the readiness of pre-referral intervention teams for use in a problem solving model. *School Psychology Quarterly, 20*(1), 89-105. Retrieved from http://ehis.ebscohost.com/eds/pdfviewer/pdfviewer?vid=2&hid=22&sid=72bbb3b3-eb16-411e-b328-eae2d0cc563c percent40sessionmgr12

Buttner, 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.211.548476

Carney, K., & Stiefel G. (2008). Long-term results of a problem-solving approach to Response To Intervention: Discussion and implications. *Learning Disabilities: A Contemporary Journal, 6*(2), 61-75. Retrieved from http://ehis.ebscohost.com/eds/pdfviewer/pdfviewer?vid=2&sid=fb82747c-0cf4-437c-943d-ad4e925ffc6bpercent40sessionmgr114&hid=120

Chen, C. K., & Hughes, J. (2004). Using ordinal regression model to analyze student satisfaction questionnaires. *Association for Institutional Research: Using advanced Tools, Techniques, and Methodologies, 1*, 1-13. Retrieved from: http://www3.airweb.org/page.asp?page=554

Christ, T. J., Burns, M. K., & Ysseldyke, J. E. (2005). Conceptual confusion with response-to-intervention vernacular: Clarifying meaning differences. *Communique on Line, 34*(3). Retrieved from http://www.nasponline.org/publications/cq/cq343rti.aspx

Cortiella, C. (2010, January). IDEA 2004 close up: Evaluation and eligibility for specific learning disabilities. *Great Schools,* Retrieved from http://www.greatschools.org/special-education/LD-ADHD/943-evaluation-and-eligibility-for-specific-learning-disabilities.gs?page=all

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed method approaches*. Thousand Oaks, CA: Sage Publications.

DeCarlo, L. T. (2003). Using the PLUM procedure of SPSS to fit unequal variance and generalized signal detection models. *Behavioral Research Methods, Instruments, & Computers 35*(1), 49-56. Retrieved from http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CDoQFjAB&url=http%3A%2F%2Fwww.columbia.edu%2F~ld208%2Fbrmic03.pdf&ei=zOrKUZ_3NdT64AO66IHYDA&usg=AFQjCNGTe3g7cf5HASTcUqebbcFt0rMfKQ&sig2=8L9dGsArlleh6NNu6vFyJw&bvm=bv.48340889,d.dmg&cad=rja

Decker S. L., Hale, J. B., & Flanagan, D. P. (2013). Professional practice issues in the assessment of cognitive functioning for educational applications. *Psychology in the Schools 00*(0), 1-14. doi: 10.1002/pits.21675

de Vaus, D. A. (2002). *Surveys in social research.* Crowns Nest, Australia: Allen & Unwin

Education for All Handicapped Children Act. (1975). Public Law 94-142. Retrieved from http://www.venturacountyselpa.com/Portals/45/Users/Public percent20Law percent2094.pdf

Flanagan, D. P., & Alfonso, V. C. (2011). *Essentials of specific learning disability identification.* Hoboken, NJ: John Wiley & Sons, Inc.

Flanagan, D. P., Alfonso, V. C., & Mascolo, J. T. (2011). A CHC-Based operational definition of SLD integrating multiple data sources and multiple data gathering methods. In Flanagan, D. P., & Alfonso, V. C. (Eds.), *Essentials of specific learning disability identification* (pp. 233-298). Hoboken, NJ: John Wiley & Sons, Inc.

Flanagan, D. P., Fiorello, C. A., & Ortiz, S. O. (2010). Enhancing practice through application of Cattell-Horne-Carroll theory and research: A "third method" approach to specific learning disability identification. *Psychology in the Schools, 47*(7), 739-760. doi: 10.1002/pits20501

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., Fuchs, L.S., & Compton, D.L. (2012). Smart RTI: A next-generation approach to multilevel prevention. *Exceptional Children, 78*(3), 263-279. Retrieved from: http://ehis.ebscohost.com/eds/pdfviewer/pdfviewer?vid=2&sid=06a7a35d-a1e1-4ec9-9b5a-1843248b69d0 percent40sessionmgr15&hid=27

Fuchs, D., Mock, D., Morgan, P. L., & Young, C. L. (2003). Responsiveness-to-intervention: Definitions, evidence and implications for learning disabilities construct. *Learning Disabilities Research & Practice, 18*(3), 151-171. Retrieved from:

http://ehis.ebscohost.com/eds/pdfviewer/pdfviewer?vid=4&hid=4&sid=c17b87db-3f81-478c-b04a-3c9d2cf6b8a4 percent40sessionmgr15

Fuchs, L. S., & Vaughn, S. (2012). Responsiveness-to-Intervention: A decade later. *Journal of Learning Disabilities, 45*(3), 195-203. doi: 10.1177/0022219412442150

Fullerton, A. S. (2009). A conceptual framework for ordered logistic regression models. *Sociological Methods and Research, 38*(2), 306-347. dio: 10.1177/0049124109346162

Garison, G. D. (2012). *Ordinal regression: Statistical associates blue book series* [Kindle version]. Retrieved from http://www.statisticalassociates.com/ordinalregression.htm

Georgia Eligibility Determination and Categories of Eligibility (2010). O.C.G.A. § 20-2-152; 20-2-240 Retrieved from: http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CDgQFjAB&url=httppercent3Apercent2Fpercent2Fwww.doe.k12.ga.uspercent2FExternal-Affairs-and-Policypercent2FState-Board-of-Educationpercent2FSBOEpercent2520Rulespercent2F160-4-7-.05.pdf&ei=PXOiUbz-O5Tr0QH0sIGQDg&usg=AFQjCNHPRAWD7pssn-vZ1F3uDT7zjbNq4w&sig2=3w_QI0T4O4gS5ITY2cdiIw&bvm=bv.47008514,d.dmQ

Georgia Department of Education (2011). *Response to intervention: Georgia's student achievement pyramid of intervention*. Retrieved from http://archives.gadoe.org/DMGetDocument.aspx/RTI percent20document percent20Full percent20Text.pdf?p=6CC6799F8C1371F66C78C107659A83FADF587830346ACDB9773128AE45FDA00B

Georgia Department of Education (2011). *Special education rules implementation manual, part 2: Eligibility categories*. Retrieved from http://www.doe.k12.ga.us/Curriculum-

Instruction-and-Assessment/Special-Education-Services/Documents/Imp_Man_percent20Part_2-Eligibility_7-30-12.pdf

Georgia Department of Education. (2011). *Student Support Teams (SST) structure and process.* Atlanta, GA. Retrieved from: http://archives.gadoe.org/DMGetDocument.aspx/SST percent20Guidelines percent20Final percent209-16-11.pdf?p=6CC6799F8C1371F62BDB7AD6F76A3052D9E5ABE36C978EDD135479A5CF0628D1&Type=D

Griffin, B. W. (2011). *Notes from lectures on educational statistics.* Department of Curriculum, Foundations, and Reading. Georgia Southern University, Statesboro, GA.

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 Disability Quarterly, 33,* 223-236. Retrieved from http://ehis.ebscohost.com/eds/pdfviewer/pdfviewer?vid=4&sid=355b056b-aa02-4490-a893-cfdeda694254 percent40sessionmgr114&hid=116

Hale, J. B., Fiorello, C. A., Bertin, M., & Sherman, R. (2003). Predicting math achievement through neuropsychological interpretation of WISC-III variance components. *Journal of Psychoeducational Assessment, 21,* 358-380. doi: 10.1177/073428290302100404

Hale, J. B., Wycoff, K. L., & Fiorello, C. A. (2011). RTI and cognitive hypothesis testing for identification and intervention of specific learning disabilities, the best of both worlds. In Flanagan, P. F., & Alfonso, V. C. (Eds.), *Essentials of specific learning disability identification* (pp. 173-201). Hoboken, NJ: John Wiley & Sons, Inc.

Higgins, G. E. (n.d.). *Tips to perform and write studies using logistic regression analysis.* Retrieved from http://www.georgehigginsphd.com/pages/logit.htm

Holdnack, J. A., & Weiss, L. G. (2006). IDEA 2004: Anticipated implications for clinical practice integrating assessment and intervention. *Psychology in the Schools, 43*(8), 871-882. doi:10.1002/pits

Hanson, J., Sharman, L. A., & Esparza-Brown, J. (2009). *Pattern of strengths and weaknesses in specific learning disabilities: What's it all about?* (Technical assistance paper). Retrieved from Oregon School Psychologists Association website: http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CC8QFjAA&url=httppercent3Apercent2Fpercent2Fwww.ospaonline.compercent2FContentpercent2FDocumentspercent2FDocument.ashxpercent3FDocIdpercent3D68400&ei=vYnAUZS1DtWg4AO5vIHADQ&usg=AFQjCNGl8pmR68ukqW4Z3pXPjy0Ii0XQZA&sig2=Ye_J_uQHrebE8onntBbLFA&bvm=bv.47883778,d.dmg

Hughes, C. A., & Dexter, D. D. (2011). Response to Intervention: A research based summary. *Theory Into Practice, 50*(4), 4-11. doi: 10.1080/00405841.2011.534909

Ikeda, M. J. (2012). Policy and practice considerations for Response to Intervention: Reflections and commentary. *Journal of Learning Disabilities, 45*(3), 274-277. doi: 10.1177/0022219412442170

Individuals with Disabilities Education Act of 2004, 20 U.S.C. §1401 [30] (2004). Retrieved from: http://nichcy.org/wp-content/uploads/docs/PL108-446.pdf

Institute for Digital Research and Education (IDRE), UCLA. (n.d.). *STATA data analysis examples, ordered logistic regression.* Retrieved from http://www.ats.ucla.edu/stat/stata/dae/ologit.htm

Kaplan, J. P. (2011). *Massachusetts school psychologists' concerns regarding the implementation of responsiveness to interventions: A concerns based adoption model approach.* (Doctoral Dissertation) Retrieved from: ProQuest (UMI 3434770).

Kerrigan, J. E. (2011). *School psychologists' impressions of the third method of SLD identification* (Doctoral dissertation). Retrieved from: ProQuest (UMI 3455585).

Kirk, S. A. (1963). *Educating exceptional children.* Boston, Massachusetts: Houghton Mifflin.

Liu, X., (2007, April). *Ordinal regression analysis: Fitting the proportional odds model using Stat, SAS and SSPS.* Paper presented at the 2007 Annual Conference of the American Educational Research Association, Chicago, IL.

Machek, G. R., & Nelson, J. M. (2010). School psychologists' perceptions regarding the practice of identifying reading disabilities: Cognitive assessment and response to intervention considerations. *Psychology in the Schools,47*(3), 230-245. doi:10.1002/pits.20467

Machek, G. R., & Nelson, J. M. (2007). How should reading disabilities be operationalized? A survey of practicing school psychologists. *Learning Disabilities Research & Practice, 22*(2), 147-157.

McCook, J. (2006). *The RTI guide: Developing and implementing a model in your school.* Horsham, PA.: LPR Publications

Mellard, D., McKnight, M., & Jordan, J. (2010). RTI tier structures and instructional intensity. *Learning Disabilities Research & Practice, 25*(4), 217-225. Retrieved from: http://ehis.ebscohost.com/eds/pdfviewer/pdfviewer?vid=13&hid=22&sid=72bbb3b3-eb16-411e-b328-eae2d0cc563c percent40sessionmgr12

Mercer, C. D., Jordan, L., Allsop, D. H., & Marcer, A. R. (1996). Learning disabilities definitions and criteria used by state education departments. *Learning Disabilities Quarterly, 19*(4), 217-232.

Meyer, M. (2000). The ability-achievement discrepancy: Does it contribute to an understanding of learning disabilities? *Educational Psychology Review, 12*(3), 315-337. Retrieved from: http://ehis.ebscohost.com/eds/pdfviewer/pdfviewer?vid=2&sid=39a01c43-4731-40dc-ae20-0e2833d2fdb0percent40sessionmgr111&hid=105

Naglieri, J. A. (2011). The discrepancy/consistency approach to SLD identification using the PASS theory. In Flanagan, P. F., & Alfonso, V. C. (Eds.), *Essentials of specific learning disability identification* (pp. 145-173). Hoboken, NJ: John Wiley & Sons, Inc.

National Association of Directors of Special Education. (2005). Response to intervention: Policy considerations and implementation. Alexandria, VA: National Association of State Directors of Special Education. Retrieved from: http://www.nasdse.org/projects/responsetointerventionrtiproject/tabid/411/default.aspx

National Association of School Psychologists (n.d.). *Position statement: Identification of students with specific learning disabilities* [white paper]. Retrieved from: http://www.nasponline.org/about_nasp/positionpapers/Identification_of_SLD.pdf

National Association of School Psychologists (n.d.). *The role of school psychologists in the RTI process* [White paper]. Retrieved from: http://www.nasponline.org/advocacy/RTIrole_NASP.pdf

National Center for Educational Statistics, Digest of Educational Statistics: 2011 (May, 2012). *Chapter 2, Elementary and Secondary Education.* Retrieved from: http://nces.ed.gov/programs/digest/d11/ch_2.asp

National Center on Response to Intervention. (2010). *Essential components of RTI - A closer look at Response to Intervention.* Washington, DC: U.S. Department of Education, Office of Special Education Programs, National Center on Response to Intervention. Retrieved from http://www.cldinternational.org/articles/rtiessentialcomponents.pdf

National Council on Disability. (2000). *Back to school on civil rights: Advancing the federal commitment to leave no child behind*. Retrieved from: http://www.ncd.gov/publications/2000/Jan252000

National Research Center on Learning Disabilities. (2007). SLD identification developing solutions. Retrieved from: http://www.nrcld.org/resource_kit/tools/SLDOverview2007.pdf

No Child Left Behind Act of 2001, Pub. L. No. 107-110, § 1118 (2002). Retrieved from: http://www2.ed.gov/nclb/landing.jhtml

O'Connor, E. P., & Freeman, E. W. (2012). District-level considerations in supporting and sustaining RTI implementation. *Psychology in the Schools, 49*(3), 297-310, doi: 10.1002/pits

O'Donnell, P. S., & Miller, D. N. (2011). Identifying students with specific learning disabilities: school psychologists' acceptability of the discrepancy model versus Response to Intervention. *Journal of Disability Policy Studies, 22*(2), 83-94. doi: 10.1177/1044207310395724

Ordinal Regression: Chapter 4. (n.d.). Retrieved from http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CDIQFjAA&url=http%3A%2F%2Fwww.norusis.com%2Fpdf%2FASPC_v13.pdf&ei=_AzLUa3

xHObA4APt3IC4CA&usg=AFQjCNFjCyfc7WQp5YWCCxYZmOY6nHzFEA&sig2=E-D_fT52fDEefvJmwjleEA&bvm=bv.48340889,d.dmg

Rogers, B. A. (2010). *Examining aspects of role and practice changes for school psychologists in Georgia: A mixed methods analysis* (Doctoral Dissertation). Retrieved from: http://eaglescholar.georgiasouthern.edu:8080/jspui/bitstream/10518/2495/1/rogers_bruce_a_201008_edd.pdf

Salkind, N. J. (2008). *Statistics for people who hate statistics.* Thousand Oaks, CA: Sage Publications, Inc.

Schwierjohn, C. A. (2011). *Identifying key factors in implementing and sustaining Response to Intervention: A comparison of schools currently implementing RTI.* (Doctoral Dissertation) Retrieved from ProQuest (UMI 3453516).

Singer, J. D., Butler, J. A., Palfrey, J. S., & Walker, D. K. (1986). Characteristics of special education placements: Findings from probability samples in five metropolitan school districts. *Journal of Special Education, 20*(3), 319-339. Retrieved from: http://ehis.ebscohost.com/eds/pdfviewer/pdfviewer?vid=23&hid=102&sid=72bbb3b3-eb16-411e-b328-eae2d0cc563c percent40sessionmgr12

Speece, D. L., & Shekita, L. (2002). How should reading disabilities be operationalized? A survey of experts. *Learning Disabilities Research & Practice, 17*(2), 118-123. Retrieved from: http://ehis.ebscohost.com/eds/pdfviewer/pdfviewer?vid=2&sid=9c007f04-1b2e-4689-aa77-2fb13f7a4ed7percent40sessionmgr12&hid=16

Stuebing, K. K., Fletcher, J. M., Branum-Martin, L., & Francis, D. J. (2012). Evaluation of the technical adequacy of three methods for identifying specific learning disabilities based on cognitive discrepancies. *School Psychology Review, 41*(1), 3-22. Retrieved from

http://ehis.ebscohost.com.libez.lib.georgiasouthern.edu/eds/pdfviewer/pdfviewer?sid=13c45f6a-6bc8-4185-af2d-39eb95596bcdpercent40sessionmgr4&vid=1&hid=6

Sullivan, A. S., & Long, L. (2010). Examining the changing landscape of school psychology practice: A survey of school-based practitioners regarding response to intervention. *Psychology in the Schools, 47*(10), 1059-1070. doi: 10.1002/pits

Togut, T. T. (2012, June). SLD eligibility, RTI and child find under the IDEA. *Educating all students (IDEAS) 2012.* Symposium conducted at St. Simons, Georgia.

United States Department of Education, National Center for Educational Statistics (2011). *Digest of Educational Statistics, 2010 (NCES 2011-015),* Chapter 2. Retrieved from: http://nces.ed.gov/fastfacts/display.asp?id=64

United States Department of Education, Office of Special Education Programs and Rehabilitative Services (n.d.). *History twenty-five years of progress in educating children with disabilities through IDEA.* Retrieved from: http://www2.ed.gov/policy/speced/leg/idea/history.pdf

United States Department of Education, Institute of Educational Sciences. (2010). The Condition of Education: 2009 (NCES 2010-013). Retrieved from http://nces.ed.gov/programs/coe/tables/table-cwd-1.asp

United States Office of Education. (1977). Federal Register: 42 CRF part 205, *Assistance to states for education of handicapped children: Procedures for evaluating specific learning disabilities.*

VanDerHeyden, A. M., Witt, J. C., & Gilbertson, D. (2007). A mulit-year evaluation of the effects of a Response to Intervention (RTI) model on identification of children for special education. *Journal of School Psychology, 45*, 225-256. doi: 10.1016/j.jsp.2006.11.004

Wanzek, J., & Vaughn, S. (2007). Research based implications from extensive early reading interventions. *School Psychology Review, 36*(4), 541-561. Retrieved from: http://ehis.ebscohost.com/eds/pdfviewer/pdfviewer?vid=3&sid=fb82747c-0cf4-437c-943d-ad4e925ffc6bpercent40sessionmgr114&hid=120

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,* 125-128. Retrieved from: http://ehis.ebscohost.com.proxygsu-gso1.galileo.usg.edu/ehost/pdfviewer/pdfviewer?sid=610d76ef-883f-4b7e-a593-823904a33ed7 percent40sessionmgr111&vid=2&hid=109

Ysseldyke, J., Burns, M. K., & Rosenfield, S. (2009). Blueprints on the future of training and practice in school psychology: What do they say about educational and psychological consultation? *Journal of Educational and Psychological Consultation, 19*, 177-196. doi: 10.1080/10474410903106448

Zirkel, P. A. (2010). The legal meaning of specific learning disability for special education eligibility. *Teaching Exceptional Children, 42*(5), 62-67. Retrieved from: http://ehis.ebscohost.com/eds/pdfviewer/pdfviewer?vid=26&hid=102&sid=72bbb3b3-eb16-411e-b328-eae2d0cc563c percent40sessionmgr12

Zirkel, P. A. (2011). RTI confusion in the case law and legal community. *Learning Disabilities Quarterly, 34*(4), 242-247. doi: 10.1177/0731948711421760

Zirkel, P., & Thomas, L. (2010). State laws and guidelines for implementing RTI. *Teaching Exceptional Children, 43*(1), 60-73.

APPENDIX A

LETTER OF PERMISSION FOR USE OF SURVEY

Gmail by Google

Marie Underwood <munderwood56@gmail.com>

Use of your survey

2 messages

Marie Underwood <munderwood56@gmail.com> Sun, Mar 10, 2013 at 2:52 PM
To: Jason M Nelson <jmnelson@uga.edu>

Dr. Nelson,

Approximately 6 months ago I contacted you regarding the use of your National Survey of School Psychologists' Perceptions of Reading Disabilities. I appreciate you allowing me to use your survey in my doctoral research at Georgia Southern. I am embarrassed to say that I cannot find the e-mail in which you gave me permission to use your survey. I am sorry to bother you with this, however, my committee requires that I have your written permission. I would appreciate it if you would respond to this e-mail with a short statement that I have your permission to use the survey you adapted from Speece & Shekita, 2002. Also, I am in the process of completing the design and methodology section of my prospectus. If you have any psychometric data that helps establish validity of your instrument I would greatly appreciate it. Thank you so much for your assistance. I promise I will not continue to bother you. If you would like to see the results of my study with all practicing Georgia school psychologists let me know and I will be sure you get a copy.

Thank you again,
Marie Underwood

Jason M Nelson <jmnelson@uga.edu> Mon, Mar 11, 2013 at 9:41 AM
To: Marie Underwood <munderwood56@gmail.com>

Hi Marie,

Yes, feel free to use the survey in your research. We don't have any psychometric data on the survey. It would be great to see the results of your study.

Best of luck,

JN

From: Marie Underwood [mailto:munderwood56@gmail.com]
Sent: Sunday, March 10, 2013 2:53 PM
To: Jason M Nelson
Subject: Use of your survey

[Quoted text hidden]

APPENDIX B

LETTER OF INVITATION TO PARTICIPATE IN SURVEY

Dear Psychologist,

I am a doctoral candidate at Georgia Southern University School of Education. I am currently working on my dissertation entitled: "Georgia School Psychologists' Perceptions Regarding Identification of Specific Learning Disabilities". I am writing to invite you to participate in the voluntary survey I plan to use in my research. The goal of my research is to develop an understanding of the perceptions and practices of school psychologists in Georgia regarding establishing special education eligibility under the classification of specific learning disability.

All survey data will be transmitted in an encrypted format and responses will be completely anonymous. Additionally, participants e-mail and IP addresses will not be saved.

I appreciate you considering participating in this important research. If you would like to participate in this voluntary survey, please click on the link below. If you have any questions please feel free to contact me.

Sincerely,

Marie Underwood
mu00218@georgiasouthern.edu
706-367-2647

www.surveymonkey.com/mysurvey...

APPENDIX C

SURVEY

Georgia School Psychologists' Perceptions of Identification Practices for

Cover Letter

I am a doctoral student conducting dissertation research under the direction of Dr. Teri Melton in the Department of Educational Leadership and Administration at Georgia Southern University. I invite you to participate in a research study entitled "IDENTIFICATION OF SPECIFIC LEARNING DISABILITIES:GEORGIA SCHOOL PSYCHOLOGISTS' PERCEPTIONS". The purpose of this research is to gain an understanding of the perceptions and practices of school psychologists in Georgia regarding the classification and exclusionary criteria used to establish SLD eligibility.

Participation in this research will include completion of a 46-question online survey. The questions are constructed as follows: 3 questions to ensure proper selection of responders, 11 demographic questions, 25 Likert Scale, and 10 multiple choice questions exploring perceptions of operational definition of Specific Learning Disability(SLD), cognitive ability/IQ and SLD, Response to intervention (RTI), and psychological assessment practices. The survey is not expected to take longer than 20-25 minutes of your time.

Participation in this study is voluntary, and you may withdraw your participation at any time. There is no penalty for deciding not to participate. You do not have to answer any question which you do not wish to answer. Due to the nature of the research topic, you may experience minor discomfort such as minor anxiety, frustration, or anger. However, there is no risk beyond that associated with daily living. You may receive future personal and professional benefits related to your professional practices or future learning opportunities as a result of this study's findings. Society may also benefit from this research, in that study results may lead to improved assessment practices for the identification of SLD or a recognition for needed policy changes.

No monetary compensation will be provided for your participation. However, all participants choosing to complete the survey will have the opportunity to enter a Sweepstakes to receive one of two Amazon gift cards valued at $100.00 each. Participation in the Sweepstakes is completely voluntary and this researcher will not have access to any personal information from participants.

No individually identifying information about you, or provided by you during the research, will be shared with others. All data collected will be stored in a locked cabinet maintained by the researcher for a minimum of three years after the completion of the study, in case they are needed to publish or present data. All data retrieved online will be password protected. Additionally, all survey information will be encrypted to ensure responses are securely transmitted.

You have the right to ask questions and have those questions answered. If you do have questions about this study, please contact the researcher named below or the researcher's faculty adviser, whose contact information is located at the end of the cover letter. For questions concerning your rights as a research participant, contact Georgia Southern University Office of Research Services and Sponsored Programs at 912-478-0843. Please print a copy of this consent form to keep for your records. This project has been reviewed and approved by the GSU Institutional Review Board under tracking number XXXXX

Principal Investigator: Marie T. Underwood
Ph: 706-247-0105
Email: mu00218@georgiasouthern.edu

Faculty Advisor: Dr. Teri A. Melton
Ph: 912-478-0510
tamelton@georgiasouthern.edu

ELECTRONIC CONSENT: Please select your choice below.

Clicking on the "agree" button below indicates that:
"You have read the above information and you voluntarily agree to participate.
If you do not wish to participate in the research study, please decline participation by clicking on the "disagree

Page 1

Georgia School Psychologists' Perceptions of Identification Practices for

Selection Criterion

***1. I wish to participate in the research study**

- ◯ Agree
- ◯ Disagree

Page 2

Georgia School Psychologists' Perceptions of Identification Practices for

*2. I am over 18 years of age.

- Agree
- Disagree

Page 3

Georgia School Psychologists' Perceptions of Identification Practices for

*3. I am currently a practicing School Psychologist in Georgia

- ◯ Agree
- ◯ Disagree

Georgia School Psychologists' Perceptions of Identification Practices for

General Information

4. Are you male or female?

- ◯ Male
- ◯ Female

5. What is your age?

- ◯ 18 to 24
- ◯ 25 to 34
- ◯ 35 to 44
- ◯ 45 to 54
- ◯ 55 to 64
- ◯ 65 to 74
- ◯ 75 or older

6. What is your race? Please choose one or more.

- ☐ White
- ☐ Black or African-American
- ☐ Asian
- ☐ Native Hawaiian or other Pacific Islander
- ☐ American Indian or Alaska Native
- ☐ Other

7. What is the highest level of education you have completed?

- ◯ MA/MS/MEd
- ◯ EdS
- ◯ Doctorate
- ◯ Other (please specify) _____

8. What year did you receive your highest degree?

Enter **4 digit year** please _____

Page 5

9. Please indicate how many years you have worked in a school as a school psychologist (either full or part-time). Do not consider the current year a full year.

Number of years

10. Please select the descriptor that best characterizes your school district.

- urban
- suburban
- rural

11. Please indicate the percent of time you work at each level of education.

Preschool

Elementary

Middle School

High School

Other

12. Are you (Please choose one)?

- Full time
- Part time
- Contract Services

13. What is the approximate school psychologist to student ratio in your district?

- 1:500
- 1:1000
- 1:1500
- 1:2000
- 1:2500
- 1:3000
- 1:>3000

14. Please list all state or national professional organization(s) you are currently a member of

State organization

State organization

State organization

National organization

National organization

National organization

Georgia School Psychologists' Perceptions of Identification Practices for

Operationalizing Specific Learning Disabilities (SLD)

I am interested in your view regarding which criteria the public schools should use to identify young children as learning disabled. Listed below (questions 16-20) are several proposed criteria. For each one, please indicate the extent to which you believe it should be part of an operational definition of specific learning disability using the following scale.

Strongly Disagree
Disagree
Agree
Strongly Agree

15. How knowledgeable are you on classification/definitional issues in specific learning disabilities? Please select the option which best describes your knowledge.

- ◯ Extremely Knowledgeable
- ◯ Knowledgeable
- ◯ Somewhat Knowledgeable
- ◯ Limited or Cursory Knowledge
- ◯ Not At All Knowledgeable

16. The original concept of a significant discrepancy between cognitive ability and achievement should be the defining feature of special education eligibility under the category of SLD (oral expression, listening, thinking, speaking, reading, writing, spelling, mathematical problem solving, and/or calculations)

Strongly Disagree	Disagree	Agree	Strongly Agree
◯	◯	◯	◯

17. Cut-off score on test of cognitive ability should be the defining feature of special education eligibility under the category of SLD (oral expression, listening, thinking, speaking, reading, writing, spelling, mathematical problem solving, and/or calculations).

Strongly Disagree	Disagree	Agree	Strongly Agree
◯	◯	◯	◯

18. Response to Intervention: Children who do not respond to generally effective regular education instruction, which is consistently monitored, and increases in its intensity in accordance with lack of student response should be the defining feature of special education eligibility under the category of SLD (oral expression, listening, thinking, speaking, reading, writing, spelling, mathematical problem solving, and/or calculations).

Strongly Disagree	Disagree	Agree	Strongly Agree
◯	◯	◯	◯

19. Cognitive processing: Children who present with distinct patterns of strengths and weaknesses evidenced through processing deficits should be the defining feature of special education eligibility under the category of SLD (oral expression, listening, thinking, speaking, reading, writing, spelling, mathematical problem solving, and/or calculations)

Strongly Disagree	Disagree	Agree	Strongly Agree
○	○	○	○

20. A simple but severe achievement discrepancy should be the defining feature of special education eligibility under the category of SLD (oral expression, listening, thinking, speaking, reading, writing, spelling, mathematical problem solving, and/or calculations).

Strongly Disagree	Disagree	Agree	Strongly Agree
○	○	○	○

21. Which of the criterion outlined in questions 16-20 do you consider MOST important for the identification of students with SLD?

22. Which of the criterion outlined in questions 16-20 do you consider the second most important for the identification of students with SLD?

Georgia School Psychologists' Perceptions of Identification Practices for

IQ/Cognitive Ability testing and Specific Learning Disabiliteis

The following questions are an effort to better understand your perceptions of the use of IQ/cognitive ability scores to identify young children as learning disabled. For each question below, please indicate your opinion of the statement.

23. Cognitive ability scores are useful in understanding the nature of a child's learning disability.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

24. Factor index scores are useful to understanding the nature of a learning disability.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

25. Individual sub-test analysis is useful in understanding the nature of a learning disability.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

26. One's IQ/cognitive ability has implications for how one can learn and be taught new academic concepts.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

27. Tests of cognitive ability are useful in the treatment planning and generation of instructional strategies for students with learning disabilities.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

28. The cognitive ability/IQ and achievement discrepancy criterion is useful because it is the one unique feature of Specific Learning Disabilities that makes SLD distinct from other disability categories.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

29. Children with larger IQ/cognitive ability and achievement discrepancies will have greater learning difficulties than those with significant, but smaller cognitive ability-achievement discrepancies.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

Georgia School Psychologists' Perceptions of Identification Practices for

Response to Intervention

The reauthorized IDEA (2004) suggests the consideration of a "response to intervention" (RTI) model of SLD identification. In addition, the state of Georgia requires RTI. Experts have noted that the model would likely require:

1. Universal, population-based screening and progress monitoring to identify students with severe educational need.
2. Alignment of severity of student's problems to the intensity of interventions.
3. Instructional intervention, supplemental to general education instruction.
4. Data that provide information regarding student progress and it's impact on reducing the gap with same-grade peers.
5. A system in place to monitor the fidelity of all interventions

-Those who continue to not respond to such regular education classroom efforts as described above may be identified as needing special education services

30. Please indicate whether the school(s) you serve already implement the RTI model as described above

- ◯ Yes
- ◯ No
- ◯ Have RTI program in place but not to the extent outlined above

31. Considering the above description of how RTI would be implemented, rate the abilities and resources of the schools you serve to carry out this model in reference to the following categories:

	Excellent	Good	Fair	Poor
Ability of GENERAL education teachers to implement effective reading, math, and writing instruction with fidelity (fidelity=implementing instruction as designed).	◯	◯	◯	◯
Ability of SPECIAL education teachers to implement effective reading, math, and writing instruction with fidelity (fidelity=implementing instruction as designed).	◯	◯	◯	◯
Amount of personnel needed to implement RTI effectively.	◯	◯	◯	◯
Financial resources needed to implement the RTI model effectively.	◯	◯	◯	◯
Time needed to implement the RTI model effectively.	◯	◯	◯	◯

32. Rate your professional CAPABILITY to engage in the following RTI roles:

	Excellent	Good	Fair	Poor
Spearheading the training and organization of the RTI effort	○	○	○	○
Consulting others on progress monitoring and data tracking	○	○	○	○
Engaging in actual progress monitoring and data tracking	○	○	○	○
Providing "highly effective" reading instruction	○	○	○	○
Providing "highly effective" math instruction	○	○	○	○
Providing "highly effective" writing instruction	○	○	○	○
Consulting others on "highly effective" reading or math instruction	○	○	○	○
Consulting regarding classroom management	○	○	○	○
Consulting regarding behavior support	○	○	○	○

33. Rate your DESIRE to engage in the following RTI roles:

	Very Desirable	Desirable	Moderately Desirable	Not At All Desirable
Spearheading the training and organization of the RTI effort.	○	○	○	○
Consulting others on progress monitoring and data tracking.	○	○	○	○
Engaging in actual progress monitoring and data tacking.	○	○	○	○
Providing "highly effective" reading, math, or writing instruction.	○	○	○	○
Consulting others on "highly effective" reading, math, or writing instruction.	○	○	○	○
Consulting regarding classroom management	○	○	○	○
Consulting regarding behavior support	○	○	○	○

34. The time required to complete all tasks of a school psychologist are a barrier to the effective implementation of the RTI model.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

35. Intellectual/cognitive assessments should be used within the RTI model to rule out mental retardation as a cause of severe achievement discrepancy.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

36. Rate the extent to which you think the RTI model has been an improvement in addressing the following factors when assessing students for specific learning disabilities

	No Improvement	A little Improvement	A moderate Improvement	A significant Improvement
Identification and intervention of children at a young age.	○	○	○	○
Minimizing over-representation of minority children as learning disabled.	○	○	○	○
Accurate identification of students with cognitive disabilities.	○	○	○	○
Accurate identification of students with specific learning disabilities.	○	○	○	○
Taking the quality of classroom instruction into account.	○	○	○	○
Screening of all children at an early age.	○	○	○	○
Connection between assessment and instruction/intervention.	○	○	○	○
Ongoing monitoring of student progress.	○	○	○	○

37. Implementation of the RTI model has significantly increase the number of students qualifying for special education due to specific learning disabilities.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

Georgia School Psychologists' Perceptions of Identification Practices for

General Perceptions of SLD Classification

According to the 2004 reauthorization of IDEA, "...a local educational agency shall not be required to take into consideration whether a child has a severe discrepancy between achievement and intellectual ability in oral expression, listening comprehension, written expression, basic reading skill, reading comprehension, mathematical calculation, or mathematical reasoning." Additionally, Georgia law prohibits the use of if IQ-Achievement discrepancy. Given these changes, please respond to the following:

38. The changes in IDEA, 2004 has altered the way that school psychologists in my district identify learning disabilities.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

39. Students who have discrepancies between cognitive ability and achievement have qualitatively different instructional needs than students who have similar learning problems but intellectual skills generally commensurate with their academic abilities (i.e. identifiable sub-group whose low cognitive scores are causally related and predictive of sustained low achievement)

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

40. Poor readers who are also slow learners (students that have lower cognitive ability and achieve commensurately) should be designated as having a specific learning disability.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

41. The SLD category should be eliminated and resources currently designated for students with SLD should be made available to schools for addressing the needs of a broader segment of the student body who are not benefiting from general education.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

42. There is a need for a systematic way to rule out lack of appropriate instruction as a factor in learning difficulties.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

43. Assessment of a learning disability by school psychologists should primarily inform INTERVENTION EFFORTS.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

44. Assessment of a learning disability by school psychologists should primarily inform eligibility determination of those needing special education services.

Very Much Disagree	Disagree	Agree	Very Much Agree
○	○	○	○

Assessment Practices

Georgia's current interpretation of the **third option** for SLD identification outlined IDEA (2004) includes the following provision: Professional judgment based on "multiple sources of evidence to conclude that the child exhibits a *pattern of strengths and weaknesses* in performance, achievement or both, relative to age, State-approved grade level standards and intellectual development" (Georgia Department of Education, Special education rules implementation manual, 2011, p. 22).

45. Do you currently use a formal alternative research-based approach in your evaluation for *patterns of strengths and weaknesses* when establishing an SLD eligibility?

- ◯ Yes
- ◯ No

Choice 1

46. Which of the following research-based approaches do you currently use in your evaluation of *patterns and strengths and weaknesses* when establishing an SLD eligibility?

- ◯ CHC-Based approach
- ◯ Concordance-Discordance Model
- ◯ Discrepancy/Consistency Model using PASS Theory
- ◯ Cognitive Hypothesis Testing
- ◯ I am not aware of any of these methods
- ◯ Other (please specify)

Choice 2

47. Why do you not use an alternative research-based approach for the evaluation of *patterns of strengths and weaknesses* when establishing an SLD eligibility?

- ◯ I am not familiar with this type of approach
- ◯ I do not think they are useful
- ◯ I am not trained in how to use alternative research-based approaches
- ◯ I am not allowed by my district to use alternative research-based approaches
- ◯ I do not think federal regulations allow for the use of alternative research-based approaches
- ◯ Other (please specify)

Georgia School Psychologists' Perceptions of Identification Practices for

Thank you!

48. You have now completed the survey. Thank you for contributing to this important research.

◯ Done

Georgia School Psychologists' Perceptions of Identification Practices for

Selection Criteria

49. Unfortunately, you do not meet the selection criteria to participate in this survey. Thank you for your time.

◯ Done

APPENDIX D
RESEARCH QUESTIONS/SURVEY QUESTION ALIGNMENT

Overarching research question:

ORQ- What are the perceptions, practices, and operational components used by practicing Georgia school psychologists for determining eligibility under the classification of specific learning disability in all eight domain areas (i.e., oral expression, listen, think, speak, read, write, spell, mathematical problem solving, and/or calculation)?

Supporting questions:

R1 - Can the assessment processes perceive as important by Georgia school psychologists for establishing SLD eligibility be accounted for by various explanatory variables including population served, RTI vs. non-RTI school, years since completion of last degree, and membership in a state/national professional organization?

R2- Can the perceptions of Georgia school psychologists' regarding the use of RTI for establishing SLD eligibility be accounted for by various explanatory variables including population served, RTI vs. non-RTI school, years since completion of last degree, and membership in a state/national professional organization?

R3- Are practicing Georgia school psychologists incorporating empirically-based, models in their evaluation of *patterns of strengths and weaknesses* as part of the SLD eligibility process?

Survey Question	Research Question	Question answered through data analysis	Descriptive Stat	Literature Reference
SQ 4-14	Demographic Information	Do control variables influence psychologists' perceptions?	Summary of demographics	Mechek & Nelson, (2007); Machek & Nelson, (2010)
SQ15	ORQ, RQ1	Do psychologists' view regarding operationalization vary based on self-reported knowledge	Summary of self-perceived knowledge use as additional IV for questions 16-20	Speece & Shekita, (2002); Mechek & Nelson, (2007); Machek & Nelson, (2010); O'Donnell & Miller, (2011)
SQ16-SQ20	ORQ, RQ1	What operational components do psychologists view as most important for classifying specific learning disabilities? Compare across all areas for significance	Ordinal logistic regression analyzing relationship to selected demographic variables	Mercer, Jordan, Allsop, & Marcer, (1996); Meyer, 2000; Speece & Shekita, (2002); Ysseldyke, (2005); Mechek & Nelson, (2007); Machek & Nelson, (2010); Hale, Alfonso, Berninger, Bracken, Christo, Clarke, … Yalof, (2010); Buttner, & Hasselhorn, (2011); O'Donnell & Miller, (2011); Fuchs & Vaughn, (2012); National Association of School Psychologists, (nd)
SQ21, SQ22	RQ1	Summarize criteria selected most often (valued as most important) by psychologists	Summary of information	Speece & Shekita, (2002); Mechek & Nelson, (2007); Machek & Nelson, (2010); O'Donnell & Miller, (2011)
SQ23-SQ24	ORQ, RQ1	How are psychologists' analyzing and interpreting IQ tests? Compare across all areas for significance	Ordinal logistic regression analyzing relationship to selected demographic variables	Meyer, (2000); Ysseldyke, Burns, & Rosenfield, (2009); Hale, Alfonso, Berninger, Bracken, Christo, Clarke…Yalof, (2010); O'Donnell & Miller, (2011)

Survey Question	Research Question	Question answered through data analysis	Descriptive Stat	Literature Reference
SQ25-SQ29	OAR	How are psychologists' using IQ scores? What do they feel the score is telling them? Compare across all areas for significance	Ordinal logistic regression analyzing relationship to selected demographic variables	Meyer, (2000); Ysseldyke, Burns, & Rosenfield, (2009); Hale, Alfonso, Berninger, Bracken, Christo, Clarke…Yalof, (2010); O'Donnell & Miller, (2011)
SQ30	RQ2	Does school's implementation of RTI influence psychologists' responses	Summarize according to response category use as IV	Fuchs & Fuchs, (2006); Hale, Alfonso, Berninger, Bracken, Christo, Clarke,…Yalof, (2010); Bernhardt & Herbert, (2011); Schwierjohn, (2011); Fuchs, Fuchs, & Compton, (2012); Fuchs & Vaughn, (2012)
SQ31	RQ2	Do schools in Georgia have the ability and resources to implement RTI with fidelity? Compare across all areas for significance	Ordinal logistic regression analyzing relationship to selected demographic variables	Fuchs & Fuchs, (2006); Hale, Alfonso, Berninger, Bracken, Christo, Clarke,…Yalof, (2010); Bernhardt & Herbert, (2011); Schwierjohn, (2011); Fuchs, Fuchs, & Compton, (2012); Fuchs & Vaughn, (2012) Machek & Nelson, (2007); Machek & Nelson, (2011); O'Donnell & Miller, (2011)
SQ32	RQ2	How do psychologists' perceive their ability to carry-out various roles within the RTI process? Compare across all areas for significance	Ordinal logistic regression analyzing relationship to selected demographic variables	

Survey Question	Research Question	Question answered through data analysis	Descriptive Stat	Literature Reference
SQ33	RQ2	How desirable do psychologists' perceive various roles within the RTI process? Summarize criteria selected most often (valued as most important)	Ordinal logistic regression analyzing relationship to selected demographic variables	Machek & Nelson, (2007); Machek & Nelson, (2011); O'Donnell & Miller, (2011)
SQ34	RQ2	Do psychologists' perceive they have adequate time to complete tasks required to implement RTI with fidelity? Summarize criteria selected most often (valued as most important)	Ordinal logistic regression analyzing relationship to selected demographic variables	Machek & Nelson, (2007); Machek & Nelson, (2011); O'Donnell & Miller, (2011)
SQ35	RQ2	Do psychologists' perceive that cognitive/IQ assessments should be used prior to psychological evaluation (as part of RTI)? Summarize criteria selected most often (valued as most important)	Ordinal logistic regression analyzing relationship to selected demographic variables	Speece & Shekita, (2002); Mechek & Nelson, (2007); Machek & Nelson, (2010); O'Donnell & Miller, (2011)

Survey Question	Research Question	Question answered through data analysis	Descriptive Stat	Literature Reference
SQ36	RQ2	Do psychologists perceive that RTI has improved their capacity to rule out exclusionary factors prior to identifying specific learning disabilities? Summarize criteria selected most often (valued as most important)	Ordinal logistic regression analyzing relationship to selected demographic variables	Speece & Shekita, (2002); Mechek & Nelson, (2007); Machek & Nelson, (2010); O'Donnell & Miller, (2011)
SQ37	RQ2	Do psychologists perceive that RTI has resulted in an increase in the number of students classified as having a specific learning disability? Summarize criteria selected most often (valued as most important)	Ordinal logistic regression analyzing relationship to selected demographic variables	Machek & Nelson, (2007); Machek & Nelson, (2011); O'Donnell & Miller, (2011)
SQ38	RQ1	What are the overall perceptions of psychologists' regarding whether IDEIA, 2004 has changed their assessment practices?	Summarize according to response category	Machek & Nelson, (2007); Machek & Nelson, (2011); O'Donnell & Miller, (2011)

Survey Question	Research Question	Question answered through data analysis	Descriptive Stat	Literature Reference
SQ39	ORQ	Include with data from SQ 23-29: How are psychologists' using IQ scores? What do they feel the score is telling them?	Ordinal logistic regression analyzing relationship to selected demographic variables	Meyer, (2000); Ysseldyke, Burns, & Rosenfield, (2009); Hale, Alfonso, Berninger, Bracken, Christo, Clarke…Yalof, (2010); O'Donnell & Miller, (2011)
SQ40	RQ2	Do psychologists' perceive "slow learner" should be an exclusionary factor when classifying specific learning disabilities?	Ordinal logistic regression analyzing relationship to selected demographic variables	Meyer, (2000); Speece & Shekita, (2002); Mechek & Nelson, (2007); Machek & Nelson, (2010); O'Donnell & Miller, (2011)
SQ41	ORQ	Do psychologists' perceive the classification of specific learning disability should continue to be used?	Ordinal logistic regression analyzing relationship to selected demographic variables	Speece & Shekita, (2002); Mechek & Nelson, (2007); Machek & Nelson, (2010)
SQ42	ORQ	What exclusionary factors do psych. view most/least important	Summarize according to response category	Buttner & Hasselhorn, 2011; Speece & Shekita, (2002); Mechek & Nelson, (2007); Machek & Nelson, (2010); O'Donnell & Miller, (2011)

Survey Question	Research Question	Question answered through data analysis	Descriptive Stat	Literature Reference
SQ43, SQ44	ORQ	How are psychologists' using IQ scores? What do they feel the score is telling them?	Ordinal logistic regression analyzing relationship to selected demographic variables	Meyer, (2000); Ysseldyke, Burns, & Rosenfield, (2009); Hale, Alfonso, Berninger, Bracken, Christo, Clarke…Yalof, (2010); O'Donnell & Miller, (2011)
SQ 45	RQ3	Do psychologists report using empirically-based assessments to analyze PSW?	Ordinal logistic regression analyzing relationship to selected demographic variables	Berninger, 2011; Flanagan & Alfonso, 2011; Flanagan, Fiorello, & Ortiz, 2010; Hale, Fiorello, Bertin, & Sherman, 2003; Hale, Wycoff, & Fiorello, 2011; Naglieri, 2011
SQ 46	RQ3	Which empirically-based assessments do psychologists report using to evaluate PSW?	Ordinal logistic regression analyzing relationship to selected demographic variables	Berninger, 2011; Flanagan & Alfonso, 2011; Flanagan, Fiorello, & Ortiz, 2010; Hale, Fiorello, Bertin, & Sherman, 2003; Hale, Wycoff, & Fiorello, 2011; Naglieri, 2011
SQ 47	RQ3	Why do psychologists report not using empirically-based assessment strategies for evaluating PSW?	Ordinal logistic regression analyzing relationship to selected demographic variables	Berninger, 2011; Flanagan & Alfonso, 2011; Flanagan, Fiorello, & Ortiz, 2010; Hale, Fiorello, Bertin, & Sherman, 2003; Hale, Wycoff, & Fiorello, 2011; Naglieri, 2011

APPENDIX E

PSYCHOLOGISTS' METHOD OF ANALYSIS FOR PATTERNS OF STRENGTHS AND WEAKNESSES

Q49 Please briefly describe the methods you are currently using to analyze patterns of strengths and weaknesses at this time.

Answered: 106 Skipped: 260

#	Responses	Date
1	Again, a discrepancy model is used. Look at how the student does compared to the normative sample, but also how he or she does within the confines of his or her own learning profile to determine a pattern of strengths and weaknesses.	9/4/2013 3:38 PM
2	key is gathering data from multiple sources of information (i.e. achievement tests, current grades, educational history, etc)	9/4/2013 2:22 PM
3	I primarily use standard scores is assessing whether strengths and weaknesses are either normative or relative to the student being evaluated.	9/4/2013 1:16 PM
4	Within the RTI process we analyze error patterns in student work. We also look at teacher assessment of standards and progress toward standard achievement. Within the formal psychoeducational component, there is careful monitoring of error patterns and of behaviors students dmeonstrate when giving responses. Additionally consideration os given to common processes that underly subtest performances, as well as looking at actual individual standard score discrepancies	9/4/2013 12:41 PM
5	use of a scattering of subtests from different tests in order to determine where strengths and weaknesses lie.	9/4/2013 11:36 AM
6	Just looking at the scores and seeing if there is a general discrepancy (approximately 10 standard points), which is why they always qualify. We (in my district) are always worried about "in the court of law" since the discrepancy is not defined clearly in the regulations. Who are we to define it? (in the court of law, we may be faulted)	9/4/2013 11:15 AM
7	processing tests	9/4/2013 11:01 AM
8	Currently, I am using cognitive, adaptive, social/emotional and achievement measures and index scores to analyze patterns of strengths and weaknesses.	9/4/2013 10:55 AM
9	Standards based on school system practices	9/4/2013 9:38 AM
10	Analysis of data for normative significant weaknesses when compared to strengths	9/4/2013 9:01 AM
11	Professional judgement through individual analysis of student's performance on cognitive assessments.	9/4/2013 8:55 AM
12	I look at cognitive ability, processing strengths and weaknesses, academic strengths and weaknesses, classroom performance, through formal criterion based assessments, normative assessments and formative assessments. I believe all are necessary in understanding how a child thinks and learns and are necessary in determining appropriate effective interventions.	9/4/2013 6:03 AM
13	We are using a roughly 10-point difference between IQ and processing scores to indicate significant differences.	8/27/2013 2:52 PM
14	Intra-individual significant differences based on multiple sources of test data, teacher and parent report	8/25/2013 10:50 AM
15	assessments of processing, teacher-completed processing checklist, observation of student	8/22/2013 2:30 PM
16	I utilize cognitive processing and executive functioning measures (W-J III, WISC, BRIEF, KTEA-II, etc.) at the cluster and factor index level to look for patterns of strengths and weaknesses in these areas.	8/22/2013 11:00 AM
17	Classroom performance, results of standardized tests, and individual assessment	8/21/2013 1:54 PM
18	Compare and determine base rates and significance	8/21/2013 11:24 AM
19	cognitive processing relative strengths and weaknesses compared to general IQ, although this is not necessarily effective or appropriate	8/20/2013 4:06 PM

1 / 5

20	Using processing assessment instruments, analyzing work samples, observations and teacher input	8/20/2013 2:31 PM
21	Test results, teacher reports, classroom observations, work sample analysis, review of records	8/20/2013 2:10 PM
22	discrepany model	8/20/2013 1:46 PM
23	Cognitive assessment and academic assessments with teacher documentation	8/20/2013 1:14 PM
24	Based on a students performance on subtests on measures of cognitive ability, observations made during assessment, and information obtained through teacher observations instruments are chosen to assess psychological processes.	8/20/2013 1:02 PM
25	Individual subtest scores from cognitive assessments; processing tests and rating scales such as TAPS,TVPS, CTOPP, BRIEF, RAN/RAS	8/20/2013 12:51 PM
26	For cognitive processing, I use a standardized comprehensive IQ test and glean strengths and weaknesses from the results. For academic achievement, I use a standardized achievement test.	8/20/2013 12:39 PM
27	Classroom data monitoring, cross battery assessment	8/20/2013 12:04 PM
28	formal testing, classwork work samples, etc	8/20/2013 11:47 AM
29	cognitive processing assessments for processing strengths and weaknesses achievement testing and grades to establish academic strengths and weaknesses	8/20/2013 11:46 AM
30	I examine academic achievement and see if processing strengths and weaknesses match the child's classroom performance	8/20/2013 11:34 AM
31	A comparison of processing skills to cognitive ability.	8/20/2013 11:14 AM
32	I use a a combination of Milton Dehn and Dawn Flanagan's processing approaches	8/20/2013 11:03 AM
33	In the area of processing, we typically administer processing measures including things like CTOPP, subtests of WJIII Cog, visual perceptual measures, memory and learning measures. Instead of using strict cut-offs or a cross battery spreadsheet – we look more holistically for a pattern of strengths and weaknesses. Are there areas well below average and areas that are at least average. The pattern of strengths and weaknesses also appears to refer to achievement so we look for a pattern of strengths and weaknesses there as well.	8/20/2013 10:59 AM
34	again, see Steven Feifer's work at school neuropsych press. He covers reading, writing, and math. I follow his method for identification and intervention planning.	8/20/2013 10:49 AM
35	I used classroom assessment data, academic achievement data, cognitive testing, benchmark assessments, and standardized tests like the CRCT to evaluate patterns of strengths and weaknesses.	8/20/2013 10:39 AM
36	Subtest scores from cognitive measure	8/20/2013 10:28 AM
37	Assessment results, progress monitoring data, and classroom performance data provides information regarding strengths and weaknesses for students. We use phonological assessments as well as aimsweb charting to determine strengths and weaknesses.	8/20/2013 10:23 AM
38	cognitive and achievement patterns, response to RTI, state assessments	8/20/2013 10:16 AM
39	I look at discrepancies between and among factor / cluster scores. For the most part, we utilize professional judgment in determining what is a strength and what is a weakness for a particular student.	8/12/2013 3:48 PM
40	processing skills assessment	8/12/2013 1:50 PM
41	15-20 point discrepancies between ability and achievement/processing and/or below age/grade level norms	8/12/2013 1:45 PM
42	I compare psychological processing scores to the individual's cognitive ability and to the norm. If the student's cognitive ability is below the norm, I will consider weaknesses if they are at least .5 sd below the students cognitive ability. In looking at strengths, I consider scores in the average range or higher to be strengths but will categorize them as relative if they are not a normative strength.	8/12/2013 1:18 PM
43	I convert my overall ability score to a z score. Then I convert all of my scores (scales, subscales) to z scores. Then I compare them. Anything that is 1.5 SD different from my ability score, I consider either a strength (if higher) or a weakness (if lower). Then I have a chart where the scores are graphcally represented.	8/9/2013 3:56 PM

44	Cross battery assessment (XBA), which is similiar to CHC theory, is used in the county where I work. In addition, neuropsych theory is also applied (see the works of DeHaene - sp? - on the cognitive processes required in basic reading and basic math skills.	8/9/2013 1:56 PM
45	Formal processing tests, particularly the NEPSY.	8/8/2013 11:36 PM
46	Utilization of assessments that identify processing deficits such as the WRAML and/or CTOPP in conjunction with all other form data as well as informal teacher observations and data.	8/8/2013 4:10 PM
47	I assess academic strengths and weaknesses based on their correlation to cognitive ability.	8/8/2013 3:38 PM
48	Cross-Battery Assessment (Flanagan), which is based on CHC theory in addition to other recent research findings (i.e., McGrew).	8/8/2013 2:07 PM
49	Looking at the magnitude of the difference and how rare it is among the population.	8/7/2013 12:23 PM
50	Formal assessment in a number of different processing areas and teacher/parent feedback about a child's learning style.	8/7/2013 12:13 PM
51	I look to see if the area is a standard deviation below 100 and make sure it is related to the area of academic weakness	8/7/2013 10:39 AM
52	Standardized testing	8/7/2013 9:50 AM
53	Cross battery assessment model, levels of significance, SEM	8/6/2013 4:11 PM
54	Achievement sub-test scores as compared to cognitive sub-test results.	8/6/2013 4:09 PM
55	review the achievement and cognitive subtests as well as classroom performance	8/6/2013 4:09 PM
56	memory, processing, achievement, rating scales, attention	8/6/2013 4:00 PM
57	XBA Cross Battery Assessment	8/6/2013 3:34 PM
58	I compare academic testing results with results from specific cognitive tests to look for patterns which are significant and fit with the theoretical underpinnings of the cognitive tests.	8/6/2013 3:28 PM
59	I use the statistical differences provided by the assessments I use. These differences (strengths and weaknesses) are then compared to the specific academic areas being assessed and which are believed to be a deficit/strength in the classroom.	8/6/2013 2:46 PM
60	Discrepancy tables	8/6/2013 2:39 PM
61	I look at the child's performance relative to his/her IQ as well as relative to the Average student his age.	8/6/2013 2:05 PM
62	primarily stat. sign. differences within index scores on iq measures	8/6/2013 1:24 PM
63	I use various resourses to determined patterns of strenths and weaknesses such as observations, interveiws, review of records and grade and classwork, assessments and so forth.	8/6/2013 12:41 PM
64	Looking at data from computer-based programs over a period of time - tracking a student's progress (or lack thereof) in reading or math. I still have not seen good interventions for writing.	8/6/2013 10:42 AM
65	Using normative scores.	8/6/2013 10:34 AM
66	Formal testing	8/6/2013 10:02 AM
67	Multi-modal assessment consisting of cognitive processing test results, academic achievement test results, test behaviors and work patterns, analyzing work samples and teachers' running records and experience	8/6/2013 9:33 AM
68	IQ testing	8/6/2013 9:32 AM
69	Subtest analysis from various achievement batteries; teacher and parent rating scales; consultation with classroom staff	8/6/2013 9:09 AM
70	Use of assessment instruments in processing areas	8/6/2013 8:17 AM
71	Patterns observed within academic achievement results Patterns observed within information processing assessment results Performance patterns (work products)	8/6/2013 8:05 AM
72	Multiple assessment measures; cross battery	8/5/2013 11:41 PM

73	Statistical differences or discrepancies in scores across processing areas using each manual/cognitive assessment and professional judgement.	8/5/2013 9:52 PM
74	Variety of processing instruments and teacher in put	8/5/2013 9:16 PM
75	Comparison of factor index scores; comparison of individual subtest scores	8/5/2013 9:13 PM
76	Specific processing tests (CTOPP, TAPS-3, etc.), differences between domains of IQ tests	8/5/2013 8:53 PM
77	Standardized norm referenced achievement testing, e.g wjiii achievement	8/5/2013 5:45 PM
78	Direct individual assessment using standardized processing assessments; teacher checklists; teacher rating scales designed to assess strengths and weaknesses; portfolio assessment (grades, work samples, etc.)	8/5/2013 5:17 PM
79	Multiple assessments of a variety of cognitive processes, which indicate strengths and weaknesses.	8/5/2013 4:57 PM
80	I typically look for scores that are significantly different from most of the students other scores (more than 1 SD) and are below 80.	8/5/2013 4:12 PM
81	I look for the generally predictable patterns of strengths and weaknesses in processing skills and academic skills (processing strengths should line up with academic strengths; processing weaknesses should line up with academic weaknesses) for each type of learning disability – reading, math, writing, etc.	8/5/2013 4:04 PM
82	Comparison to the 'general population', i.e., scores that are one standard deviation away from the mean; also within certain instruments, scores that are statistically significant and rarely occurring according to the test manual (only appiles to certain instruments, such as DAS-2)	8/5/2013 4:02 PM
83	results from IQ and processing assessments. Significant at .05 or relative to the intellectual functioning.	8/5/2013 4:01 PM
84	I rely on cluster or subtest scores from cognitive & achievement batteries.	8/5/2013 3:50 PM
85	When a child who is academically struggling is referred for an evaluation, I typically will look at the child's academic performance using the KTEA or te WJ-III ACH and the teacher's RTI data (DIBELS, easyCBM). Then, I will look at processing areas such as executive functioning, phonological processing, visual/spatial skills, reasoning, working memory, processing speed, short term and long term memory, etc. using various standardized measures such as the DAS-2, WISC-IV, CTOPP, BRIEF, DTVP, etc. If there is an auditory processing concern, I will requeest an SLP to do a standardized measure in that area. Eligibility is then determined based on GA DOE rules.	8/5/2013 3:47 PM
86	Processing assessments initially and then research based interventions that address slengths and weaknesses	8/5/2013 3:32 PM
87	Cognitive processing assessments which use statistical analysis of test scores.	8/5/2013 3:28 PM
88	I analyze traditional psychometric data, like IQ/cognitive processing tests and achievement data from standardized measures and locally normed CBMs.	8/5/2013 3:19 PM
89	subtest analysis	8/5/2013 3:18 PM
90	Individual interpretation/analysis of intraindividual performance on assessment of cognition and processing to determine personal strength/weakness as well as relative to a norm group; intraindividual comparisons of achievement performance; rate of improvement of progress monitoring data in reponse to supplemental interventions; review of progress toward grade level standards	8/5/2013 3:07 PM
91	standardized assessment measures	8/5/2013 2:51 PM
92	index scores on standardized cognitive/processing tests	8/5/2013 2:47 PM
93	I give a battery of tests that look at strengths and weaknesses in the areas of processing speed, memory, attention, organization, visual processing, auditory processing	8/5/2013 2:44 PM
94	Cognitive processing strengths and weaknesses of at least 10-/+ points of IQ that cooresponds with academic performance and RTI data.	8/5/2013 2:33 PM
95	cognitive processing assessments in the areas of visual perception & coordination, auditory processing, memory, processing speed, styles of learning	8/5/2013 2:32 PM
96	Assessment of cognitive abilities, processing strengths and weaknesses, formal and informal achievement measures	8/5/2013 2:21 PM

97	Not using any particular method.	8/5/2013 2:19 PM
98	In order to identify a pattern of strengths and weaknesses, there must be a statistical difference between cognitive abilities or processing skills, and a corresponding academic weakness, i.e., weakness in rapid naming skills and a corresponding weakness in reading fluency.	8/5/2013 2:11 PM
99	testing- CTOPP, WRAML2, IQ	8/5/2013 2:08 PM
100	Comprehensive cognitive assessments Comprehensive processing assessments Clinical observations Teacher Report Parent Report	8/5/2013 2:01 PM
101	Indexes on cognitive assessments, formal achievement testing, and processing tests	8/5/2013 2:00 PM
102	I use various assessments, including WJIII Cognitive, CTOPP, and CMS in addition to the cognitive measure, as well as conducting index and subtest analyses of the cognitive measure used.	8/5/2013 1:59 PM
103	Standard scores from achievement measures, compared to personal average	8/5/2013 1:47 PM
104	Standardized Tests such as WJ-III Cog to look at processing and academic tests to see if those processing deficits impact learning. I also look at academic work samples, teacher information, and screeners such as GRASP	8/5/2013 1:45 PM
105	IQ Achievement Classroom based work samples Classroom observations Research based intervention programs	8/5/2013 1:44 PM
106	Comparison of standard scores, consulting tables for significance.	8/5/2013 1:43 PM

APPENDIX F

ORDINAL LOGISTIC REGRESSION SUMMARY TABLE

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q17	RTI	1.116	1	0.291	RTI no vs yes	1.261	0.820	1.940
Q17	KR	4.963	1	0.026	Ext Knowl vs Not Ext Knowl	0.613	0.398	0.943
Q17	Pop	0.304	1	0.581	Elem. vs Non-Elem.	0.722	0.228	2.293
Q17	PO	7.932	3	0.047	Both vs National	1.835	0.776	4.343
					Both vs None	1.366	0.744	2.506
					Both vs State	0.684	0.417	1.124
					National vs None	0.744	0.294	1.885
					National vs State	0.373	0.157	0.888
					None vs State	0.501	0.271	0.926
Q17	YSD	4.575	1	0.032		0.974	0.951	0.998
Q18	RTI	0.036	1	0.849	RTI no vs yes	1.045	0.663	1.647
Q18	KR	2.661	1	0.103	Ext Knowl vs Not Ext Knowl	0.684	0.434	1.079
Q18	Pop	0.020	1	0.886	Elem. vs Non-Elem.	0.914	0.265	3.145
Q18	PO	4.335	3	0.227	Both vs National	1.508	0.616	3.687
					Both vs None	1.485	0.788	2.796
					Both vs State	0.808	0.476	1.370
					National vs None	0.985	0.376	2.578
					National vs State	0.536	0.218	1.318
					None vs State	0.544	0.286	1.033
Q18	YSD	0.489	1	0.484		0.991	0.966	1.016
Q19	RTI	5.857	1	0.016	RTI no vs yes	0.588	0.382	0.904
Q19	KR	0.017	1	0.896	Ext Knowl vs Not Ext Knowl	0.972	0.638	1.482
Q19	Pop	0.095	1	0.758	Elem. vs Non-Elem.	0.835	0.265	2.632

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q19	PO	0.664	3	0.882	Both vs National	0.951	0.406	2.224
					Both vs None	0.901	0.496	1.639
					Both vs State	1.137	0.699	1.850
					National vs None	0.948	0.378	2.379
					National vs State	1.196	0.510	2.804
					None vs State	1.262	0.692	2.302
Q19	YSD	2.325	1	0.127		1.019	0.995	1.043
Q20	RTI	0.015	1	0.904	RTI no vs yes	0.974	0.633	1.499
Q20	KR	0.446	1	0.504	Ext Knowl vs Not Ext Knowl	1.157	0.754	1.776
Q20	Pop	0.201	1	0.654	Elem. vs Non-Elem.	0.768	0.241	2.442
Q20	PO	0.856	3	0.836	Both vs National	1.462	0.614	3.482
					Both vs None	1.180	0.643	2.167
					Both vs State	1.102	0.672	1.807
					National vs None	0.807	0.316	2.062
					National vs State	0.754	0.316	1.798
					None vs State	0.934	0.507	1.719
Q20	YSD	0.791	1	0.374		0.989	0.966	1.013
Q21	RTI	0.156	1	0.693	RTI no vs yes	1.090	0.710	1.673
Q21	KR	4.491	1	0.034	Ext Knowl vs Not Ext Knowl	0.629	0.410	0.966
Q21	Pop	1.246	1	0.264	Elem. vs Non-Elem.	1.924	0.610	6.073
Q21	PO	5.738	3	0.125	Both vs National	1.823	0.774	4.295
					Both vs None	1.728	0.941	3.175
					Both vs State	0.934	0.572	1.527
					National vs None	0.948	0.376	2.393
					National vs State	0.513	0.217	1.211
					None vs State	0.541	0.293	0.997
Q21	YSD	0.122	1	0.727		1.004	0.980	1.029
Q24	RTI	0.210	1	0.647	RTI no vs yes	1.112	0.706	1.753

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q24	Pop	0.471	1	0.493	Elem. vs Non-Elem.	1.575	0.431	5.760
Q24	PO	7.450	3	0.059	Both vs National	3.111	1.235	7.836
					Both vs None	1.261	0.661	2.407
					Both vs State	0.892	0.530	1.502
					National vs None	0.405	0.150	1.095
					National vs State	0.287	0.114	0.724
					None vs State	0.707	0.370	1.351
Q24	YSD	0.452	1	0.501		1.009	0.983	1.035
Q25	RTI	0.301	1	0.583	RTI no vs yes	1.146	0.705	1.861
Q25	Pop	2.518	1	0.113	Elem. vs Non-Elem.	0.375	0.112	1.259
Q25	PO	0.242	3	0.970	Both vs National	1.121	0.424	2.962
					Both vs None	1.146	0.578	2.270
					Both vs State	0.986	0.567	1.714
					National vs None	1.022	0.357	2.927
					National vs State	0.879	0.332	2.327
					None vs State	0.860	0.434	1.707
Q25	YSD	2.094	1	0.148		0.980	0.954	1.007
Q26	RTI	2.733	1	0.098	RTI no vs yes	0.670	0.416	1.077
Q26	Pop	0.451	1	0.502	Elem. vs Non-Elem.	0.653	0.188	2.263
Q26	PO	8.733	3	0.033	Both vs National	2.539	0.991	6.504
					Both vs None	1.646	0.839	3.232
					Both vs State	0.772	0.449	1.330
					National vs None	0.648	0.236	1.780
					National vs State	0.304	0.118	0.784
					None vs State	0.469	0.238	0.926
Q26	YSD	2.107	1	0.147		0.981	0.955	1.007
Q27	RTI	0.152	1	0.697	RTI no vs yes	1.106	0.667	1.835
Q27	Pop	0.093	1	0.760	Elem. vs Non-Elem.	1.242	0.308	5.007

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q27	PO	1.020	3	0.796	Both vs National	1.139	0.412	3.146
					Both vs None	0.918	0.457	1.846
					Both vs State	1.269	0.708	2.274
					National vs None	0.806	0.270	2.405
					National vs State	1.114	0.400	3.097
					None vs State	1.382	0.679	2.812
Q27	YSD	0.000	1	1.000		1.000	0.972	1.028
Q28	RTI	0.128	1	0.720	RTI no vs yes	0.917	0.569	1.477
Q28	Pop	0.166	1	0.684	Elem. vs Non-Elem.	1.308	0.359	4.768
Q28	PO	0.948	3	0.814	Both vs National	1.243	0.475	3.253
					Both vs None	0.777	0.398	1.516
					Both vs State	0.963	0.556	1.667
					National vs None	0.625	0.221	1.764
					National vs State	0.775	0.296	2.031
					None vs State	1.240	0.634	2.423
Q28	YSD	2.649	1	0.104		1.022	0.995	1.050
Q29	RTI	2.278	1	0.131	RTI no vs yes	1.392	0.906	2.137
Q29	Pop	1.000	1	0.317	Elem. vs Non-Elem.	0.560	0.180	1.745
Q29	PO	9.176	3	0.027	Both vs National	1.412	0.593	3.362
					Both vs None	1.217	0.661	2.241
					Both vs State	0.571	0.349	0.935
					National vs None	0.862	0.337	2.206
					National vs State	0.405	0.169	0.968
					None vs State	0.469	0.254	0.869
Q29	YSD	3.920	1	0.048		0.976	0.953	1.000
Q30	RTI	0.220	1	0.639	RTI no vs yes	1.115	0.707	1.759
Q30	Pop	0.193	1	0.660	Elem. vs Non-Elem.	0.765	0.231	2.529

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q30	PO	5.576	3	0.134	Both vs National	2.459	0.926	6.526
					Both vs None	1.595	0.825	3.080
					Both vs State	0.947	0.566	1.585
					National vs None	0.649	0.226	1.862
					National vs State	0.385	0.145	1.026
					None vs State	0.594	0.306	1.152
Q30	YSD	10.120	1	0.001		0.960	0.935	0.984
Q32a	RTI	23.602	1	0.000	RTI no vs yes	3.029	1.937	4.737
Q32a	Pop	0.209	1	0.648	Elem. vs Non-Elem.	0.767	0.247	2.389
Q32a	PO	5.806	3	0.121	Both vs National	0.846	0.364	1.968
					Both vs None	1.659	0.910	3.026
					Both vs State	1.615	0.989	2.637
					National vs None	1.962	0.783	4.914
					National vs State	1.909	0.816	4.466
					None vs State	0.973	0.532	1.780
Q32a	YSD	0.019	1	0.890		1.002	0.978	1.026
Q32b	RTI	25.086	1	0.000	RTI no vs yes	3.464	2.130	5.632
Q32b	Pop	0.358	1	0.549	Elem. vs Non-Elem.	0.699	0.217	2.255
Q32b	PO	2.648	3	0.449	Both vs National	0.580	0.243	1.386
					Both vs None	0.727	0.391	1.353
					Both vs State	1.025	0.614	1.711
					National vs None	1.253	0.491	3.201
					National vs State	1.766	0.738	4.228
					None vs State	1.409	0.755	2.630
Q32b	YSD	0.004	1	0.950		0.999	0.975	1.024
Q32c	RTI	50.775	1	0.000	RTI no vs yes	5.607	3.490	9.009
Q32c	Pop	0.597	1	0.440	Elem. vs Non-Elem.	0.636	0.202	2.004

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q32c	PO	3.355	3	0.340	Both vs National	0.785	0.338	1.826
					Both vs None	0.692	0.381	1.256
					Both vs State	1.178	0.726	1.909
					National vs None	0.881	0.354	2.197
					National vs State	1.499	0.644	3.491
					None vs State	1.701	0.935	3.095
Q32c	YSD	1.701	1	0.192		0.984	0.962	1.008
Q32d	RTI	57.090	1	0.000	RTI no vs yes	6.101	3.817	9.753
Q32d	Pop	0.009	1	0.925	Elem. vs Non-Elem.	1.056	0.342	3.259
Q32d	PO	3.521	3	0.318	Both vs National	1.525	0.663	3.504
					Both vs None	0.778	0.427	1.417
					Both vs State	1.268	0.783	2.053
					National vs None	0.510	0.206	1.263
					National vs State	0.832	0.362	1.911
					None vs State	1.630	0.894	2.973
Q32d	YSD	2.428	1	0.119		0.981	0.959	1.005
Q32e	RTI	41.194	1	0.000	RTI no vs yes	4.449	2.820	7.019
Q32e	Pop	1.127	1	0.288	Elem. vs Non-Elem.	0.523	0.158	1.731
Q32e	PO	1.538	3	0.673	Both vs National	1.503	0.651	3.472
					Both vs None	0.853	0.469	1.550
					Both vs State	1.049	0.646	1.705
					National vs None	0.567	0.229	1.407
					National vs State	0.698	0.302	1.613
					None vs State	1.230	0.676	2.239
Q32e	YSD	3.404	1	0.065		0.978	0.955	1.001
Q33a	RTI	0.315	1	0.575	RTI yes/no	1.126	0.743	1.707
Q33a	Pop	0.002	1	0.962	Elem. vs Non-Elem.	1.027	0.335	3.147

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q33a	PO	0.258	3	0.968	Both vs National	0.855	0.373	1.960
					Both vs None	1.014	0.565	1.820
					Both vs State	1.057	0.656	1.702
					National vs None	1.187	0.483	2.914
					National vs State	1.237	0.538	2.842
					None vs State	1.042	0.579	1.874
Q33a	YSD	7.930	1	0.005		0.967	0.945	0.990
Q33b	RTI	0.330	1	0.566	RTI no vs yes	0.881	0.572	1.357
Q33b	Pop	0.292	1	0.589	Elem. vs Non-Elem.	1.380	0.429	4.441
Q33b	PO	1.392	3	0.707	Both vs National	0.708	0.298	1.679
					Both vs None	0.915	0.497	1.683
					Both vs State	0.768	0.469	1.260
					National vs None	1.292	0.507	3.296
					National vs State	1.086	0.457	2.579
					None vs State	0.840	0.455	1.550
Q33b	YSD	6.406	1	0.011		0.969	0.946	0.993
Q33c	RTI	0.253	1	0.615	RTI no vs yes	1.112	0.736	1.679
Q33c	Pop	0.059	1	0.807	Elem. vs Non-Elem.	1.155	0.362	3.692
Q33c	PO	1.194	3	0.754	Both vs National	0.908	0.399	2.068
					Both vs None	0.765	0.426	1.374
					Both vs State	0.800	0.499	1.284
					National vs None	0.843	0.345	2.061
					National vs State	0.882	0.386	2.011
					None vs State	1.046	0.581	1.882
Q33c	YSD	0.691	1	0.406		0.990	0.968	1.013
Q33d	RTI	5.419	1	0.020	RTI no vs yes	1.629	1.080	2.457
Q33d	Pop	0.110	1	0.740	Elem. vs Non-Elem.	0.830	0.276	2.495

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q33d	PO	8.646	3	0.034	Both vs National	0.731	0.323	1.651
					Both vs None	0.416	0.231	0.748
					Both vs State	0.711	0.445	1.137
					National vs None	0.569	0.234	1.384
					National vs State	0.974	0.430	2.204
					None vs State	1.711	0.951	3.079
Q33d	YSD	0.168	1	0.682		0.995	0.973	1.018
Q33e	RTI	8.865	1	0.003	RTI no vs yes	1.888	1.242	2.868
Q33e	Pop	0.342	1	0.559	Elem. vs Non-Elem.	0.716	0.234	2.193
Q33e	PO	8.050	3	0.045	Both vs National	0.590	0.254	1.370
					Both vs None	0.443	0.245	0.802
					Both vs State	0.651	0.405	1.046
					National vs None	0.752	0.301	1.877
					National vs State	1.104	0.474	2.569
					None vs State	1.468	0.811	2.657
Q33e	YSD	0.062	1	0.804		0.997	0.974	1.020
Q33f	RTI	5.651	1	0.017	RTI no vs yes	1.660	1.093	2.520
Q33f	Pop	0.930	1	0.335	Elem. vs Non-Elem.	0.573	0.185	1.776
Q33f	PO	10.707	3	0.013	Both vs National	0.554	0.242	1.269
					Both vs None	0.387	0.213	0.702
					Both vs State	0.613	0.380	0.990
					National vs None	0.698	0.283	1.721
					National vs State	1.108	0.482	2.545
					None vs State	1.586	0.872	2.884
Q33f	YSD	0.874	1	0.350		0.989	0.966	1.012
Q33g	RTI	0.277	1	0.598	RTI no vs yes	1.120	0.734	1.708
Q33g	Pop	0.100	1	0.752	Elem. vs Non-Elem.	0.834	0.271	2.567

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q33g	PO	1.335	3	0.721	Both vs National	0.861	0.371	1.996
					Both vs None	0.765	0.422	1.387
					Both vs State	0.773	0.476	1.255
					National vs None	0.889	0.358	2.207
					National vs State	0.898	0.387	2.083
					None vs State	1.010	0.557	1.832
Q33g	YSD	0.860	1	0.354		1.011	0.988	1.035
Q33h	RTI	1.339	1	0.247	RTI no vs yes	1.293	0.837	1.999
Q33h	Pop	0.408	1	0.523	Elem. vs Non-Elem.	0.682	0.210	2.209
Q33h	PO	2.578	3	0.461	Both vs National	0.956	0.402	2.271
					Both vs None	0.877	0.473	1.625
					Both vs State	0.672	0.408	1.108
					National vs None	0.918	0.358	2.355
					National vs State	0.703	0.295	1.679
					None vs State	0.766	0.411	1.427
Q33h	YSD	2.038	1	0.153		0.982	0.959	1.007
Q33i	RTI	3.146	1	0.076	RTI no vs yes	1.488	0.959	2.308
Q33i	Pop	0.369	1	0.544	Elem. vs Non-Elem.	0.695	0.215	2.249
Q33i	PO	4.136	3	0.247	Both vs National	0.863	0.357	2.086
					Both vs None	0.692	0.374	1.281
					Both vs State	0.603	0.365	0.997
					National vs None	0.802	0.309	2.083
					National vs State	0.699	0.288	1.694
					None vs State	0.872	0.469	1.618
Q33i	YSD	2.319	1	0.128		0.981	0.958	1.005
Q34a	RTI	0.991	1	0.319	RTI no vs yes	0.815	0.545	1.219
Q34a	Pop	0.000	1	1.000	Elem. vs Non-Elem.	1.000	0.339	2.949

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q34a	PO	3.292	3	0.349	Both vs National	0.870	0.390	1.942
					Both vs None	0.828	0.469	1.461
					Both vs State	0.654	0.412	1.037
					National vs None	0.951	0.398	2.271
					National vs State	0.751	0.336	1.679
					None vs State	0.789	0.446	1.397
Q34a	YSD	5.348	1	0.021		0.974	0.952	0.996
Q34b	RTI	0.094	1	0.759	RTI no vs yes	0.936	0.615	1.425
Q34b	Pop	0.643	1	0.423	Elem. vs Non-Elem.	1.592	0.511	4.959
Q34b	PO	5.184	3	0.159	Both vs National	0.736	0.318	1.703
					Both vs None	1.038	0.572	1.881
					Both vs State	0.606	0.373	0.985
					National vs None	1.410	0.568	3.503
					National vs State	0.824	0.356	1.909
					None vs State	0.584	0.321	1.064
Q34b	YSD	1.815	1	0.178		0.984	0.961	1.007
Q34c	RTI	0.006	1	0.940	RTI no vs yes	0.984	0.655	1.479
Q34c	Pop	0.853	1	0.356	Elem. vs Non-Elem.	1.675	0.560	5.008
Q34c	PO	5.201	3	0.158	Both vs National	0.924	0.410	2.083
					Both vs None	0.709	0.398	1.262
					Both vs State	0.589	0.368	0.943
					National vs None	0.767	0.317	1.856
					National vs State	0.638	0.282	1.444
					None vs State	0.831	0.465	1.485
Q34c	YSD	0.621	1	0.431		1.009	0.987	1.032
Q34d	RTI	7.724	1	0.005	RTI no vs yes	1.845	1.198	2.841
Q34d	Pop	0.022	1	0.882	Elem. vs Non-Elem.	1.091	0.347	3.426

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q34d	PO	3.713	3	0.294	Both vs National	0.425	0.166	1.090
					Both vs None	0.754	0.409	1.387
					Both vs State	0.766	0.470	1.250
					National vs None	1.773	0.642	4.891
					National vs State	1.802	0.699	4.646
					None vs State	1.016	0.547	1.888
Q34d	YSD	0.001	1	0.975		1.000	0.976	1.024
Q34e	RTI	0.064	1	0.801	RTI no vs yes	1.053	0.703	1.579
Q34e	Pop	0.332	1	0.564	Elem. vs Non-Elem.	0.726	0.245	2.154
Q34e	PO	1.477	3	0.688	Both vs National	0.891	0.397	2.000
					Both vs None	1.225	0.690	2.174
					Both vs State	0.865	0.544	1.375
					National vs None	1.374	0.571	3.307
					National vs State	0.971	0.432	2.182
					None vs State	0.706	0.397	1.257
Q34e	YSD	0.624	1	0.430		0.991	0.969	1.013
Q34f	RTI	2.509	1	0.113	RTI no vs yes	1.412	0.921	2.164
Q34f	Pop	0.911	1	0.340	Elem. vs Non-Elem.	0.575	0.185	1.789
Q34f	PO	2.620	3	0.454	Both vs National	0.695	0.298	1.623
					Both vs None	0.718	0.394	1.309
					Both vs State	0.690	0.423	1.125
					National vs None	1.032	0.412	2.584
					National vs State	0.993	0.425	2.319
					None vs State	0.962	0.527	1.755
Q34f	YSD	0.489	1	0.484		0.992	0.969	1.015
Q34g	RTI	2.280	1	0.131	RTI no vs yes	1.387	0.907	2.122
Q34g	Pop	0.901	1	0.342	Elem. vs Non-Elem.	0.578	0.186	1.794

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q34g	PO	1.416	3	0.702	Both vs National	0.724	0.306	1.710
					Both vs None	0.984	0.542	1.789
					Both vs State	0.782	0.482	1.269
					National vs None	1.360	0.537	3.446
					National vs State	1.080	0.457	2.554
					None vs State	0.794	0.436	1.447
Q34g	YSD	1.996	1	0.158		0.983	0.960	1.007
Q35	RTI	5.610	1	0.018	RTI no vs yes	1.662	1.092	2.530
Q35	Pop	0.004	1	0.952	Elem. vs Non-Elem.	1.035	0.338	3.172
Q35	PO	5.023	3	0.170	Both vs National	2.475	1.076	5.691
					Both vs None	1.333	0.740	2.403
					Both vs State	1.080	0.669	1.744
					National vs None	0.539	0.219	1.324
					National vs State	0.436	0.190	1.005
					None vs State	0.810	0.448	1.464
Q35	YSD	5.222	1	0.022		0.973	0.950	0.996
Q36	RTI	0.013	1	0.908	RTI no vs yes	1.025	0.676	1.555
Q36	Pop	0.097	1	0.756	Elem. vs Non-Elem.	1.194	0.391	3.648
Q36	PO	4.429	3	0.219	Both vs National	0.721	0.313	1.663
					Both vs None	1.451	0.804	2.617
					Both vs State	0.799	0.496	1.290
					National vs None	2.011	0.811	4.989
					National vs State	1.108	0.480	2.561
					None vs State	0.551	0.304	1.000
Q36	YSD	4.418	1	0.036		0.975	0.953	0.998
Q37a	RTI	13.226	1	0.000	RTI no vs yes	0.465	0.308	0.702
Q37a	Pop	1.435	1	0.231	Elem. vs Non-Elem.	0.514	0.173	1.527

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q37a	PO	4.515	3	0.211	Both vs National	0.854	0.376	1.940
					Both vs None	0.694	0.392	1.228
					Both vs State	1.276	0.802	2.030
					National vs None	0.812	0.335	1.973
					National vs State	1.494	0.655	3.406
					None vs State	1.839	1.033	3.274
Q37a	YSD	1.736	1	0.188		1.015	0.993	1.039
Q37b	RTI	25.766	1	0.000	RTI no vs yes	0.329	0.214	0.505
Q37b	Pop	0.597	1	0.440	Elem. vs Non-Elem.	1.546	0.512	4.671
Q37b	PO	1.754	3	0.625	Both vs National	1.050	0.458	2.406
					Both vs None	0.795	0.445	1.418
					Both vs State	1.176	0.735	1.882
					National vs None	0.757	0.308	1.858
					National vs State	1.120	0.487	2.574
					None vs State	1.480	0.825	2.655
Q37b	YSD	0.148	1	0.701		1.004	0.982	1.028
Q37c	RTI	35.730	1	0.000	RTI no vs yes	0.268	0.174	0.412
Q37c	Pop	1.822	1	0.177	Elem. vs Non-Elem.	2.205	0.699	6.954
Q37c	PO	3.415	3	0.332	Both vs National	1.922	0.816	4.529
					Both vs None	0.829	0.467	1.473
					Both vs State	0.918	0.576	1.465
					National vs None	0.431	0.171	1.085
					National vs State	0.478	0.202	1.128
					None vs State	1.108	0.622	1.974
Q37c	YSD	11.513	1	0.001		1.041	1.017	1.066
Q37d	RTI	35.442	1	0.000	RTI no vs yes	0.259	0.166	0.404
Q37d	Pop	0.103	1	0.748	Elem. vs Non-Elem.	1.198	0.397	3.614

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q37d	PO	4.733	3	0.192	Both vs National	0.781	0.337	1.808
					Both vs None	0.577	0.321	1.039
					Both vs State	1.071	0.668	1.717
					National vs None	0.739	0.298	1.836
					National vs State	1.372	0.591	3.183
					None vs State	1.856	1.028	3.351
Q37d	YSD	3.246	1	0.072		1.021	0.998	1.045
Q37e	RTI	6.555	1	0.010	RTI no vs yes	0.582	0.384	0.881
Q37e	Pop	0.018	1	0.893	Elem. vs Non-Elem.	1.079	0.359	3.241
Q37e	PO	5.152	3	0.161	Both vs National	1.245	0.541	2.863
					Both vs None	0.672	0.377	1.197
					Both vs State	1.301	0.812	2.086
					National vs None	0.540	0.219	1.330
					National vs State	1.045	0.453	2.413
					None vs State	1.937	1.078	3.480
Q37e	YSD	0.118	1	0.731		1.004	0.981	1.027
Q37f	RTI	26.317	1	0.000	RTI no vs yes	0.333	0.218	0.506
Q37f	Pop	0.574	1	0.449	Elem. vs Non-Elem.	1.522	0.514	4.507
Q37f	PO	1.829	3	0.609	Both vs National	1.116	0.485	2.569
					Both vs None	0.912	0.515	1.613
					Both vs State	1.291	0.813	2.049
					National vs None	0.817	0.332	2.011
					National vs State	1.156	0.501	2.667
					None vs State	1.415	0.796	2.517
Q37f	YSD	0.366	1	0.545		1.007	0.985	1.030
Q37g	RTI	20.218	1	0.000	RTI no vs yes	0.374	0.244	0.574
Q37g	Pop	0.824	1	0.364	Elem. vs Non-Elem.	1.683	0.547	5.177

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q37g	PO	1.788	3	0.618	Both vs National	1.397	0.601	3.246
					Both vs None	0.995	0.556	1.782
					Both vs State	1.308	0.813	2.104
					National vs None	0.713	0.287	1.770
					National vs State	0.936	0.402	2.178
					None vs State	1.314	0.732	2.360
Q37g	YSD	0.228	1	0.633		1.006	0.983	1.029
Q37h	RTI	32.315	1	0.000	RTI no vs yes	0.281	0.182	0.436
Q37h	Pop	1.078	1	0.299	Elem. vs Non-Elem.	1.810	0.590	5.548
Q37h	PO	2.676	3	0.444	Both vs National	0.995	0.431	2.298
					Both vs None	0.714	0.399	1.280
					Both vs State	1.166	0.727	1.870
					National vs None	0.718	0.290	1.778
					National vs State	1.172	0.506	2.715
					None vs State	1.633	0.907	2.938
Q37h	YSD	1.792	1	0.181		1.016	0.993	1.039
Q38	RTI	0.700	1	0.403	RTI no vs yes	1.215	0.770	1.917
Q38	Pop	0.039	1	0.843	Elem. vs Non-Elem.	0.886	0.266	2.947
Q38	PO	4.043	3	0.257	Both vs National	2.418	0.920	6.355
					Both vs None	1.381	0.722	2.639
					Both vs State	1.013	0.606	1.696
					National vs None	0.571	0.202	1.616
					National vs State	0.419	0.159	1.104
					None vs State	0.734	0.383	1.408
Q38	YSD	0.022	1	0.883		0.998	0.973	1.023
Q39	RTI	1.089	1	0.297	RTI no vs yes	0.792	0.510	1.228
Q39	Pop	2.511	1	0.113	Elem. vs Non-Elem.	2.681	0.792	9.078

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q39	PO	6.216	3	0.102	Both vs National	2.792	1.121	6.955
					Both vs None	0.831	0.448	1.542
					Both vs State	0.963	0.583	1.591
					National vs None	0.298	0.111	0.797
					National vs State	0.345	0.138	0.861
					None vs State	1.159	0.624	2.153
Q39	YSD	0.775	1	0.379		1.011	0.987	1.036
Q40	RTI	0.793	1	0.373	RTI no vs yes	1.226	0.783	1.919
Q40	Pop	0.001	1	0.977	Elem. vs Non-Elem.	1.019	0.293	3.544
Q40	PO	9.019	3	0.029	Both vs National	2.325	0.983	5.500
					Both vs None	0.766	0.406	1.447
					Both vs State	0.650	0.386	1.094
					National vs None	0.330	0.128	0.848
					National vs State	0.280	0.117	0.670
					None vs State	0.848	0.446	1.613
Q40	YSD	4.455	1	0.035		0.973	0.949	0.998
Q41	RTI	1.582	1	0.208	RTI no vs yes	0.750	0.479	1.174
Q41	Pop	0.081	1	0.776	Elem. vs Non-Elem.	1.191	0.358	3.963
Q41	PO	3.001	3	0.391	Both vs National	0.556	0.226	1.364
					Both vs None	0.894	0.474	1.686
					Both vs State	0.687	0.410	1.149
					National vs None	1.608	0.609	4.246
					National vs State	1.236	0.505	3.023
					None vs State	0.768	0.407	1.450
Q41	YSD	4.520	1	0.033		1.028	1.002	1.054
Q42	RTI	0.144	1	0.704	RTI no vs yes	1.087	0.707	1.669
Q42	Pop	0.671	1	0.413	Elem. vs Non-Elem.	0.622	0.200	1.935

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q42	PO	0.572	3	0.903	Both vs National	0.948	0.402	2.234
					Both vs None	0.796	0.435	1.457
					Both vs State	0.961	0.588	1.573
					National vs None	0.840	0.332	2.123
					National vs State	1.014	0.430	2.394
					None vs State	1.208	0.659	2.215
Q42	YSD	0.526	1	0.468		0.991	0.968	1.015
Q43	RTI	3.957	1	0.047	RTI no vs yes	1.574	1.007	2.460
Q43	Pop	0.367	1	0.545	Elem. vs Non-Elem.	1.442	0.441	4.712
Q43	PO	2.493	3	0.476	Both vs National	1.436	0.594	3.472
					Both vs None	0.957	0.517	1.771
					Both vs State	1.400	0.841	2.330
					National vs None	0.666	0.257	1.728
					National vs State	0.975	0.402	2.363
					None vs State	1.463	0.784	2.730
Q43	YSD	1.503	1	0.220		1.016	0.991	1.041
Q44	RTI	0.411	1	0.521	RTI no vs yes	0.867	0.561	1.340
Q44	Pop	0.001	1	0.977	Elem. vs Non-Elem.	0.983	0.308	3.137
Q44	PO	4.636	3	0.200	Both vs National	1.292	0.544	3.070
					Both vs None	1.445	0.785	2.659
					Both vs State	1.728	1.043	2.862
					National vs None	1.118	0.440	2.843
					National vs State	1.338	0.562	3.183
					None vs State	1.196	0.649	2.203
Q44	YSD	0.388	1	0.534		1.008	0.984	1.032
Q45	RTI	0.976	1	0.323	RTI no vs yes	0.799	0.511	1.248
Q45	Pop	0.231	1	0.631	Elem. vs Non-Elem.	0.747	0.228	2.451

Question	Pred. V.	Wald Chi-Square	DF	P-value	Comparisons	Odds Ratio	Low Limit	Up Limit
Q45	PO	0.797	3	0.850	Both vs National	1.090	0.453	2.626
					Both vs None	0.819	0.439	1.527
					Both vs State	0.842	0.504	1.406
					National vs None	0.751	0.290	1.942
					National vs State	0.772	0.320	1.865
					None vs State	1.029	0.550	1.923
Q45	YSD	0.249	1	0.618		0.994	0.969	1.019
Q46	RTI	1.112	1	0.292	RTI no vs yes	0.777	0.486	1.242
Q46	Pop	1.543	1	0.214	Elem. vs Non-Elem.	0.374	0.079	1.764
Q46	PO	6.439	3	0.092	Both vs National	2.993	1.192	7.514
					Both vs None	0.866	0.441	1.701
					Both vs State	1.108	0.646	1.898
					National vs None	0.289	0.106	0.791
					National vs State	0.370	0.148	0.928
					None vs State	1.279	0.652	2.507
Q46	YSD	0.006	1	0.939		1.001	0.975	1.027

Note. YSD = years since completion of most recent degree; PO = Professional organization affiliation; KR = Self knowledge rating; Pop = Population served; RTI = Level of RTI implementation