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Walden University
2013

Abstract

Confidence Among School Psychologists Board-Certified in School Neuropsychology

by

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Nearly 2.5 million students in the United States are identified as having a specific learning disability (SLD). To best identify and recommend interventions for them, school psychologists should consider integrating the latest neuropsychological tools. The American Board of School Neuropsychology (ABSNP) awards a diplomate credential to psychologists who demonstrate competencies in school neuropsychology. The purpose of this quantitative study was to examine the perceptions of ABSNP diplomates regarding their ability to identify and provide interventions for students with SLDs. Participants in this study included 119 diplomates currently practicing school psychology in the United States. A survey instrument designed for this study was used to collect their perceptions and demographic information. Descriptive statistics, analyses of variance, and chi-square analyses were used to analyze study data. Results indicated that the ABSNP certification had a significant positive effect on diplomate perceptions of confidence in both the assessment and intervention domains. Additionally, 95.8% of diplomates reported being satisfied overall with their ABSNP training. No differences in diplomate perceptions were found by education level. Participants reported that the greatest barriers in delivering school neuropsychological services include time constraints, short state and federal evaluation timelines, budgetary constraints, and limited access to neuropsychological tests. The positive social change implication of this study is to help narrow the achievement gap between non-disabled and disabled students by determining if the ABSNP is improving confidence of school psychologists to better assess and intervene for students with SLDs.

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Dedication

Dedicated to the memory of my mother and loving family

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Chapter 1: Introduction to the Study

Introduction

According to the National Center for Educational Statistics (2012), in the 2009-2010 academic year, 6.5 million or 13% of all students in public schools received special education services due to a disability. Of these 6.5 million students, 38% were categorized as having a specific learning disability (SLD). One of the current goals in the field of school psychology and other education professions is to apply the most appropriate methods to serve the large population of students with SLDs. In order to best identify and provide interventions for those students, school psychologists should consider integrating the latest neuropsychological tools into practice. If school psychologists can increase their ability to identify and provide interventions for students with SLDs, they may help narrow the achievement gap between nondisabled and disabled students.

Due to recent technological breakthroughs in neuroimaging, neuroscience allows psychologists to better understand the specific areas of the brain important in the identification of learning disorders (Fawcett, & Nicolson, 2007; Palmer, Brown, Petersen, & Schlaggar, 2004; Pennington, 2009; Schlaggar et al., 2002; Schlaggar & Church, 2009). These breakthroughs highlight why neuropsychological assessments, and, therefore training, is needed in the field of school psychology: the use of neuropsychological assessments helps keep the process of finding children with SLDs aligned with cognitive neuroscience (Schmitt & Wodrich, 2008). The field of school psychology must align itself with best practice in selecting assessment tools that will be most efficacious in the identification and measurement of brain systems that are not assessed by traditional intelligence tests.

School neuropsychology is the practice of integrating educational and neuropsychological principles with school-aged children for the purpose of assessment and intervention to help promote the most efficacious outcomes for learning and behavior at school and home (Miller, 2004). To help provide school psychologists with the skills needed to integrate neuropsychological tools into practice, the American Board of School Neuropsychology (ABNSP) was formed over a decade ago in anticipation of the growing interest in school neuropsychology (ABSNP, 2012). The purpose of this study was to assess whether ABSNP diplomates reported that this added training and credentialing system adequately prepared them with the knowledge and skills needed to better serve students with SLDs.

Chapter 1 will cover the following areas: background, problem statement, purpose of the study, research questions and hypotheses of the study, theoretical framework, nature of the study, definitions, assumptions, scope and delimitations, limitations, and significance.

Background of the Study

According to Decker (2008) and Feifer (2008), neuropsychological assessments offer school psychologists a broader framework in which to both identify and provide interventions for students with SLDs compared with traditional cognitive assessments alone. Providing neuropsychological assessment training to school psychologists has proven difficult. Although the National Association of School Psychologists (NASP; 2012a) requires school psychology graduate programs to review the biological influences of cognition on learning, no specific neuropsychological courses are required. In addition, Walker, Boling, and Cobb (1999) pointed out that there is often no room in specialist-level school psychology programs for the addition of neuropsychologically oriented assessment or intervention courses.

One of the primary roles of school psychologists is to conduct evaluations for SLDs when students are referred to them for poor academic performance. Although the Response to Intervention (RTI), 3-tiered model of identifying and providing interventions to students at risk for, or with learning weaknesses, is a nationwide mandate, it does not always address the source of students' academic difficulties. Cognitive assessments traditionally administered by school psychologists are not always comprehensive enough to identify all types of learning disabilities or to identify the most effective points of intervention. As a result, school psychologists cannot answer those crucial questions regarding the nature of students' difficulties when these students are not responding to evidenced-based interventions. The integration of neuropsychological assessments into school based-evaluations can provide school psychologists with a more comprehensive picture of how students best process and learn information.

To help bridge the gap between the specialties of clinical neuropsychology and school psychology, the ABSNP provides a credential certifying specific competencies in school neuropsychology. The ABSNP certification can provide a pathway for training school psychologists who choose to use comprehensive neuropsychological assessments in schools in support of the neuroscientific findings linking SLDs to selective regions of the brain. It follows that, if the ABSNP certification is used to deliver this essential training to school psychologists, an independent assessment of the outcomes of certification, from the perspective of stakeholders, is necessary.

Problem Statement

Virtually no research exists that examines the perceptions of school psychologists who have completed the ABSNP certification about their ability to identify and provide interventions

for students with SLDs. Presently, the ABSNP is the only board that offers school psychologists training to obtain competencies in school neuropsychology. If school psychologists are called upon to integrate neuropsychological knowledge and assessments into their practice, then the process by which they can achieve such competencies should be evaluated for its efficacy.

Starting in 2004, the Individuals with Disabilities Act (IDEA) began to change the landscape of SLD identification in special education. In IDEA 2004, important changes were made in the criteria used to identify students with SLDs. School psychologists were no longer required to use a discrepancy analysis guideline between intellectual ability and achievement. In addition, school psychologists, as part of a multidisciplinary team, needed to ensure that students received scientific, research-based instruction prior to SLD identification. In response to these changes, the RTI framework refocused the aim of general education: to provide research-based interventions to at-risk and struggling learners.

With the federal endorsement of RTI, discussion within the educational community centered around whether this method could be used as a standalone process to identify and provide intervention for students with SLDs. Many authors argued strongly against this process as a sole means for SLD identification and intervention (see Flanagan, Ortiz, Alfonso, & Dynda, 2006; Fuchs & Fuchs, 2006; Kavale, Holdnack, & Mosert, 2006; Mastropieri & Scruggs, 2005; Reynolds & Shaywitz, 2009). Instead, researchers have advocated for the use of neuropsychological assessments as part of the problem identification and intervention development phases for addressing learning difficulties within an RTI framework (see Feifer, 2008; Schmitt & Wodrich, 2008; Witsken, Stoeckel, & D'Amato, 2008).

Although Marolt and Thompson (2008) reported positive experiences from a small sample of school psychologists who obtained diplomates in school neuropsychology, further research needs to be conducted. This study was designed to help address the gap in the school psychology training literature by examining the perceptions of confidence of school psychologists who have earned the ABSNP certification. Results from this study are intended to help the educational community understand if the ABSNP certification is perceived by certified, practicing school psychologists as more effectively integrating the latest neuropsychological assessments into their practice.

Purpose of the Study

The purpose of this study was trifold: (a) to collect quantitative data help understand the perceptions of ABSNP diplomates after completing their training in school neuropsychology in their confidence to identify SLDs and provide interventions for students with SLDs; (b) to help researchers in the field of education and psychology determine if ABSNP certification is perceived as a valuable vehicle to help obtain further neuropsychological training. (c) to help provide the ABSNP directors with summative data that may help in future planning of course curriculum and certification requirements. The quantitative data from this study was intended to build on the qualitative reports by school psychologists who obtained diplomates in school neuropsychology (Marolt & Thompson, 2008).

Nature of the Study

This quantitative study used a nonexperimental design. This approach aligns with the problem statement, since the aim of this study was to quantify perceptions of confidence of school psychologists in their ability to identify and develop interventions for students with SLDs

as a result of ABSNP training in school neuropsychology. The survey method was used to quantify their perceptions to numerically represent their perceived confidence as a result of the ABSNP certification.

Research Questions

The following research questions were developed to help understand the relationship between ABSNP diplomates' feelings of confidence in relation to identifying and intervening for students with learning disabilities:

1. Do school psychologists believe they are more confident in identifying reading disabilities after becoming ABSNP diplomates?
2. Do school psychologists believe that they are more confident in identifying writing disabilities after becoming ABSNP diplomates?
3. Do school psychologists believe that they are more confident in identifying math disabilities after becoming ABSNP diplomates?
4. Do school psychologists believe that their diagnostic accuracy for identifying students with reading disabilities has increased after becoming ABSNP diplomates?
5. Do school psychologists believe that their diagnostic accuracy for identifying students with writing disabilities has increased after becoming ABSNP diplomates?
6. Do school psychologists believe that their diagnostic accuracy for identifying students with math disabilities has increased after becoming ABSNP diplomates?
7. Do school psychologists believe that the interventions they recommend for reading disabilities are more specific to the needs of students after becoming ABSNP diplomates?

8. Do school psychologists believe that the interventions they recommend for writing disabilities are more specific to the needs of students after becoming ABSNP diplomates?
9. Do school psychologists believe that the interventions they recommend for math disabilities are more specific to the needs of students after becoming ABSNP diplomates?
10. Do school psychologists believe that they have a broader range of interventions they can recommend to teachers for reading disabilities after becoming ABSNP diplomates?
11. Do school psychologists believe that they have a broader range of interventions they can recommend to teachers for writing disabilities after becoming ABSNP diplomates?
12. Do school psychologists believe that they have a broader range of interventions they can recommend to teachers for math disabilities after becoming ABSNP diplomates?
13. Is there a difference between doctoral, masters and specialist level school psychologists' beliefs about their confidence in identifying and providing interventions for students with SLDs?

Hypotheses

The following null and alternative hypotheses are based on the 13 research questions:

- H_{01} : There is no significant difference in school psychologists' perception of confidence in their ability to identify reading disabilities after becoming ABSNP diplomates.
- H_{a1} : There is a significant difference in school psychologists' perception of confidence in their ability to identify reading disabilities after becoming ABSNP diplomates.

- H_{02} : There is no significant difference in school psychologists' perception of confidence in their ability to identify math disabilities after becoming ABSNP diplomates.
- H_{a2} : There is a significant difference in school psychologists' perception of confidence in their ability to identify math disabilities after becoming ABSNP diplomates.
- H_{03} : There is no significant difference in school psychologists' perception of confidence in their ability to identify writing disabilities after becoming ABSNP diplomates.
- H_{a3} : There is a significant difference in school psychologists' perception of confidence in their ability to identify writing disabilities after becoming ABSNP diplomates.
- H_{04} : There is no significant difference in school psychologists' diagnostic accuracy in reading disabilities after becoming ABSNP diplomates.
- H_{a4} : There is a significant difference in school psychologists' diagnostic accuracy in reading disabilities after becoming ABSNP diplomates.
- H_{05} : There is no significant difference in the amount of interventions that school psychologists recommend for students with writing disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates.
- H_{a5} : There is a significant difference in school psychologists' diagnostic accuracy in writing disabilities after becoming ABSNP diplomates.

- H_{06} : There is no significant difference in the amount of interventions that school psychologists recommend for students with math disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates.
- H_{a6} : There is a significant difference in school psychologists' diagnostic accuracy in math disabilities after becoming ABSNP diplomates.
- H_{07} : There is no significant difference in the amount of interventions that school psychologists recommend for students with reading disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates.
- H_{a7} : There is a significant difference in the amount of interventions that school psychologists recommend for students with reading disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates.
- H_{08} : There is no significant difference in the amount of interventions that school psychologists recommend for students with writing disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates.
- H_{a8} : There is a significant difference in the amount of interventions that school psychologists recommend for students with reading, writing, and math disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates.
- H_{09} : There is no significant difference in the amount of interventions that school psychologists recommend for students with math disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates.

- H_{a9} : There is a significant difference in the amount of interventions that school psychologists recommend for students with math disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates.
- H_{010} : There is no significant difference between the specificity of interventions school psychologists recommend for reading disabilities after becoming ABSNP diplomates.
- H_{a10} : There is a significant difference between the specificity of interventions school psychologists recommend for reading disabilities after becoming ABSNP diplomates.
- H_{011} : There is no significant difference between the specificity of interventions school psychologists recommend for writing disabilities after becoming ABSNP diplomates.
- H_{a11} : There is a significant difference between the specificity of interventions school psychologists recommend for writing disabilities after becoming ABSNP diplomates.
- H_{012} : There is no significant difference between the specificity of interventions school psychologists recommend for math disabilities after becoming ABSNP diplomates.
- H_{a12} : There is a significant difference between the specificity of interventions school psychologists recommend for math disabilities after becoming ABSNP diplomates.
- H_{013} : There is no significant difference in perceptions in identifying and providing interventions for students with SLDs between doctoral and master's/specialist level school psychologists.
- H_{a13} : There is a significant difference in perceptions in identifying and providing interventions for students with SLDs between doctoral, master's and specialist level school psychologists.

Definition of Terms

ABSNP Diplomate: A school psychologist who has successfully passed all of the ABSNP requirements for board certification in school neuropsychology.

ABSNP Certification: Used interchangeably with ABSNP diplomate status.

School Neuropsychology: The ABSNP defines school neuropsychology as the following:

School neuropsychology requires the integration of neuropsychological and educational principles to the assessment and intervention processes with infants, children, and adolescents to facilitate learning and behavior within the school and family systems. School neuropsychologists also play an important role in curriculum development, classroom design, and the integration of differentiated instruction that is based on brain-behavior principles in order to provide an optimal learning environment for every child” (Miller, 2004).

Specific Learning Disability: The educational classification for a learning disability under IDEA. This term also applies to a “learning disability.”

Response to Intervention: A framework using: (a) research-based instruction, (b) student performance and learning rate data, and (c) data driven decision making to enhance student learning (Mellard, 2004).

Assumptions

The following assumptions were made for this study:

1. All respondents of the survey were be able to read, process, and answer the questions with full attention given to the meaning of each item.
2. Participants answered honestly, sharing their true perceptions and experiences.

3. The survey instrument designed for this study accurately reflected the perceptions of competency of the participants.
4. The participants were a representative sample of all those who have completed the ABSNP certification.

Scope and Delimitations

The scope of the study included all current ABSNP diplomates listed in the ABSNP diplomate directory who reside in the United States. The population included respondents whose graduate degree was in school psychology at the master's, specialist, or doctoral level. Respondents were certified as a school psychologist, but some also held state licensure as a general psychologist. The delimitations of this study excluded all international ABSNP diplomates practicing outside of the United States as school psychologists.

Limitations

1. Although the survey method allowed collection of data from a larger sample allowing all eligible diplomates to participate in the study, self-appraisal can be difficult to measure, especially when there are no cross-validating points of reference for the respondents (Kaslow et al., 2009).
2. Daly et al. (2011) warned about the difficulties of measuring task performance in professional psychology (p.880).
3. Several biases could have impacted the respondents' perceptions: (a) geographic location of practice, (b) years in practice, (c) population of students served, (d) degree earned (e.g., master's, specialist, doctorate), (e) access to neuropsychological instruments, and (f) source of funding for ABSNP training and certification which

may affect generalizing the results from this study more difficult because of respondent bias.

4. Because the survey was delivered to participants in the summer, the response rate could have been limited.
5. The response rate for this study may have been reduced because only one reminder e-mail was sent to participants who did not respond the first time .

Significance of the Study

This study had two aims. One was to help school psychologists and educational professionals determine if the ABSNP was perceived as being an effective pathway for meeting the demands of applying the current state of neuropsychological knowledge of SLDs to the practice of school psychology. Because integration of comprehensive neuropsychological assessments within an RTI framework appears to be one that shows promise as a means to serve students with SLDs, this study could help guide school psychologists and school psychology graduate programs in evaluating the ABSNP as a means to train school psychologists to integrate neuropsychological skills into school-based practice. The results may also provide valuable feedback to the ABSNP to help validate the strengths and identify the weaknesses in their certification program.

The other aim was to promote social change by helping school psychologists' increase their capacity to better meet the needs of students. If school psychologists can increase their ability to identify and provide interventions for students with SLDs, they may help narrow the achievement gap between nondisabled and disabled students.

Summary and Transition Statement

School psychologists must take charge in helping identify and provide the appropriate educational recommendations for students with SLDs. In doing so, school psychologists need to embrace the latest research in neuroscience and select the appropriate assessment tools that tap into this knowledge. The ABSNP certification is one such way for school psychologists to increase their level of knowledge and proficiency in administering and interpreting neuropsychological assessments.

The background of this study highlighted some of the difficulties in the current SLD framework and the challenges associated with providing more comprehensive training in assessment in school psychology graduate programs. The problem statement identified the need for quantitative descriptive research that examines the perceptions of those who have obtained the ABSNP certification. The main purpose of this study was to measure the perceived confidence of school psychologists who have earned the ABSNP certification to help identify if this training program can help meet the needs of students with SLDs. This study sought to help school psychologists understand if the ABSNP is an effective avenue to serving students with SLDs and thus helping to close the achievement gap between students with and without learning disabilities.

Chapter 2 provides a literature review of the emergence of neuropsychology into the field of school psychology, the benefits of neuropsychology in school psychological practice, the issues surrounding neuropsychological training in school psychology, the differences between clinical neuropsychology and school neuropsychology, an overview of the ABSNP, and current trends in school psychological assessment in SLD identification and intervention.

Chapter 2: Literature Review

Introduction

School psychologists are vital players in helping schools identify students with SLDs. Consequently, the training they receive on how to best identify and provide interventions for students with SLDs needs to be addressed. There is now debate in the field as to what methods constitute the best way to serve students with SLDs. Within the RTI framework, traditional cognitive and neuropsychological assessments are currently being used to identify SLDs. While some argue that either a traditional assessment or the RTI approach should be used, a growing number of researchers believe that a combination of both approaches show the most promise.

Bridging the gap between RTI and assessment is important because research in neuroscience can help inform assessment practices that focus on the neuropsychological underpinnings of SLDs. Limited course work in neuropsychology in school psychology programs leaves school psychologists with a significant gap in the knowledge and training needed to bring this specialized area into practice. In response to this need, the ABSNP was founded as an avenue for school psychologists to acquire this specialized training. However, the confidence school psychologists acquire after becoming ABSNP diplomates must be understood to determine if they are in a better position to meet the needs of students with SLDs.

The databases used to conduct a search of the literature were PsycINFO, PsycARTICLES, and ERIC. The keywords were *school neuropsychology*, *neuropsychology*, *school psychology*, *competency*, *psychology*, *clinical neuropsychology*, *training*, *learning disabilities*, *ABSNP*, *RTI*, *NASP*, *history*, *intelligence*, and *academic achievement*. Several books along with information gathered from the Internet were used as well.

Emergence of Neuropsychology in School Psychology Literature

The topic of neuropsychology began to emerge within the field of school psychology during the early 1980s. Although the application of neuropsychology had already been studied within an educational context (Bogen 1977; Kaufmann, 1979), researchers and professionals in the field of school psychology began to explore how neuropsychology could be used by school psychologists.

This emergence was due partly to several major forces that helped rationalize the integration of neuropsychology into school psychology. One of them was the federal mandate, IDEA (PL 94-142), which required school districts to identify and serve all children with disabilities. With the identification of students with disabilities under PL 94-142 came the funding to provide services. Neuropsychological assessments offered the promise of a clearer diagnostic picture, since the differentiation of more complex learning disorders often requires a more comprehensive clinical approach (Obrzut, 1981).

Hynd and Obrzut (1981) identified two other important factors that helped the neuropsychological approach gain popularity with school psychology professionals. First, they argued that at that time, the 1980s, most psychologists began to recognize the importance of the biological underpinnings of behavior. Clinical assessments in neuropsychology could help provide psychologists with the tools they need to better measure central nervous system functioning. Secondly, a great interest in neuropsychology by faculty and students (Hynd, Quackenbush, & Obrzut, 1980) lead to more use of neuropsychological assessments in schools, thereby reducing the number of outside referrals to medical professionals (Ramage, 1979).

Proposed Roles for School Psychologists in Neuropsychological Assessment

In an early work by Obrzut (1981) the question of how school psychologists could utilize neuropsychology in the educational setting was hypothesized. Obrzut proposed that neuropsychology is a framework school psychologists can use to classify students with brain dysfunction into different neurological categories aiding in interpretation of dysfunction. Additionally, a theoretical foundation in neuropsychology helps provide school psychologists with a better understanding of how the acquisition of learning occurs at a biological level. Obrzut theorized that an understanding of how the brain processes information at different levels can help school psychologists better identify where specific problems occur in the learning process. Additionally, Obrzut argued that neuropsychological assessments are able to assess a wide range of lower and higher order functions across the entire cortex of the brain.

Hynd and Obrzut (1981) also developed conceptual and practical applications for those school psychologists with training in neuropsychology. Conceptually, they proposed that neuropsychology training would allow school psychologists to better integrate the disciplines of behavior and education. In addition, school psychologists could work collaboratively with other professionals such as psychologists and education professionals for the purpose of devising interventions that better meet the needs of students. From a practical standpoint, school psychologists who are properly trained in and providing neuropsychological services could better tease out the cognitive profiles of students, utilize screening measures to identify students with neurological dysfunction, and consult with other psychologists to improve their ability in the differential diagnosis of learning disorders. Hynd and Obrzut (1981) also proposed that the roles of school psychologists who are trained at the sixth year and doctoral levels differ. Those

psychologists who hold specialist degrees will administer neuropsychological assessments, whereas the doctoral level psychologists will specialize in interpretation of results and provide recommendations.

Gaddes (1983) examined the up and coming field of neuropsychology within the context of special education. Although Gaddes pointed out there was criticism with the application of neuropsychology in the field of special education, he argued that neuropsychological training enhanced the services that could be provided in schools. Psychologists with neuropsychological training would be able to better understand the learning styles with all students including those with neurological impairments, interpret and utilize current research in neuropsychology geared especially toward children, and consider a combination of the psychosocial and neuropsychological variables in understanding behavior. Gaddes advocated using a multi-faceted approach, which included neuropsychology, to properly diagnose and provide educational recommendations for all children with learning problems.

Benefits of Integrating Neuropsychology and School Psychology

With the recognition that neuropsychology could help play an important role in the field of school psychology, literature began to emerge that examined the new possible roles that school psychologists could fill with additional training in neuropsychology. In relation to the school environment, knowledge of neuropsychological theory and practices can provide school psychologists with invaluable skills to better serve students. Crespi and Cooke (2003) proposed that school psychologists who acquire additional skills in neuropsychology can better serve their schools by integrating neuropsychological principles into special education programming, enhancing consultation with parents and teachers, and by being better consumers of

neuropsychological research for educational programming. Pelletier, Hiemenz, and Shapiro (2004) also believe that a foundation of neuropsychological theory and skills are beneficial for school psychologists. The integration of these skills by school psychologists can also provide more comprehensive evaluations in light of recent changes in the Federal law, IDEA, which has changed the procedures for identifying students with SLDs (Pelletier et al., 2004).

Neuropsychological training gives school psychologists a larger assessment “toolbox” from which to draw upon when a SLD is suspected. Given the push toward more comprehensive assessments in the evaluation process as governed by IDEA, Cleary and Scott (2011) argue that neurological assessments are no longer a “luxury,” but, rather a necessity in the evaluation process. Additionally, having a theoretical framework from which to draw upon for the integration of multiple sources of assessment data and appreciating the complex nature of making inferences regarding brain functioning can also supplement assessment practices (Crespi & Cooke, 2003). In this way, school psychologists can help reduce an overreliance on single measures to make judgments regarding brain dysfunction (Crespi & Cooke, 2003).

School psychologists who undergo additional neuropsychological training may also be able to form a partnership between outside neuropsychologists and the school community, increasing the likelihood for positive student outcomes. School psychologists may be more willing to make outside referrals to neuropsychologists when needed based on their understanding of neuropsychological principles. This better understanding of neuropsychology can aid school psychologists in the interpretation of findings from neuropsychological evaluations and can help them integrate recommendations in the school environment (Crespi & Cooke, 2003; Pelletier, Hiemenz, & Shapiro, 2004). This partnership can offset some of

problems inherent of neuropsychological evaluation reports that make them difficult for school-based professionals to utilize (Ernst, Pelletier, & Simpson, 2008). Ernst and colleagues (2008) also advocates for school psychologists to serve as liaisons between the school and evaluator, to work as a team by collaboratively collecting assessment data as part of the outside evaluation. School psychologists can act as liaisons by helping provide evaluators with valuable information regarding district interpretation of IDEA criteria as well as pointing out which information will be most helpful in documenting the evidence necessary for a student to qualify for services. When school psychologists collaborate with outside evaluators in collecting assessment data, this collaboration may add to the validity and utility of the evaluation by providing a more comprehensive view of student functioning (Ernst et al., 2008).

Neuropsychology Training in School Psychology Programs

Presently, there are limited studies that have examined neuropsychology training in school psychology programs. A study conducted by D'Amato (1992) indicated that nearly half of non-accredited and close to two thirds of APA accredited programs offered coursework in neuropsychology. Later, Walker and colleagues (1999) surveyed 86 school psychology programs for the purpose of identifying training practices in neuropsychology and in brain injury. They found that out that only 23% of these programs required a general course in neuropsychology. Programs that did require neuropsychology courses were only general in nature and faculty with specialized training in neuropsychology was limited. Additionally, no further neuropsychological training was part of the future curriculum planning of a large majority of programs that did not offer neuropsychology coursework. Walker and colleagues (1999) attributed the reluctance of

adding neuropsychological coursework to the coursework demands and time constraints of non-doctoral school psychology programs.

NASP Curriculum Training Standards for Graduate Programs

If neuropsychology training is to be part of the graduate curriculum in school psychology, then an accrediting body, such as NASP, has the power and influence to help set the standards for what students learn. In an effort to provide guidance for graduate education in school psychology, NASP designed the *Standards for Graduate Preparation of School Psychologists* in 2010. These guidelines were designed to help shape program curriculum so students will enter the field of school psychology with the competencies needed to help them meet the challenges practicing as a school psychologist. Although there are no specific requirements for neuropsychological coursework within these standards, the language used within the domains of Data-Based Decision Making and Accountability (2.1) and Interventions and Instructional Support to Develop Academic Skills (2.3) may leave some room for neuropsychological courses to become a component of graduate level curriculum.

As part of the data-based decision making process, school psychologists must acquire the skills necessary to not only properly assess student strengths and weaknesses, but also to develop the appropriate programs and services for them. NASP also requires that school psychologists have knowledge of the biological influences academic skills, learning, cognition, and development. One could argue that with the accumulation of neuropsychological research linking the brain to the learning and intervention process, school psychologists are not in a position to properly identify a student's range of abilities without neuropsychological assessments.

Clinical and School Neuropsychology

Training Requirements in Clinical Neuropsychology

To better understand the alignment of school neuropsychology with its predecessor, clinical neuropsychology, an examination of the training requirements in this field is helpful. In the field of clinical neuropsychology, the training standards were originally set forth by the Houston Conference in 1997 (Hannay et al., 1998). The Houston Conference set out to provide a comprehensive model for the specialized field of clinical neuropsychology. The deliberations of this conference outlined a number of issues facing the specialty of neuropsychology, such as the definition of a clinical neuropsychologist to the training and supervision required to demonstrate competency in the field. Entrance into the specialty of clinical neuropsychology requires a doctoral degree in psychology from an accredited institution, an approved internship by the American Psychological Association or California Psychological Association (CPA), and a full-time postdoctoral residency program for a period of 2 years. Part of the residency requirement requires that residency programs have a board-certified clinical neuropsychologist with on-site supervision and interactions with other residents in medical professions. The clinical psychology resident must pass a formal evaluation upon completing the residency and be eligible for state licensure or certification for private practice in psychology.

Clinical neuropsychologists may choose to obtain certification through the American Board of Professional Psychology (ABPP) in clinical neuropsychology. The American Board of Clinical Neuropsychology (ABCN) is affiliated with the ABPP and the purpose of the ABNC is to ensure competency in neuropsychological assessment. Board certification by the ABCN is the ABPP's attempt to align certification in clinical neuropsychology with the medical model

(ABPP, 2012). To obtain ABCN certification, applicants must undergo credential review and a background check, a written examination to assess knowledge, submission of a practice sample, and an oral examination. Candidates must also meet the criteria for set forth by the Houston Conference for a clinical neuropsychologist prior to obtaining the ABCN credential (see Hannay et al., 1998, for an in-depth review of the Houston Conference).

Training Requirements in School Neuropsychology

The ABSNP was founded in 1999 based upon a growing interest in school neuropsychology and a need for a certification that demonstrated proficiency for practitioners in the field of school neuropsychology (ABSNP, 2012). School neuropsychology helps school psychologists integrate principles of neuropsychology into their assessment and intervention practices (Miller, 2004). In addition, school neuropsychology plays an important role in curriculum development, classroom design, and differentiating instruction (Miller, 2004).

Although the specialization of clinical neuropsychology has been a doctoral only specialty, the ABSNP credentials psychologists with doctoral and specialist level degrees. The ABSNP provides different educational pathways to demonstrate competency in school neuropsychology:

1. Psychologists who possess a doctoral degree in school or clinical psychology with a specialization in school or pediatric neuropsychology with supervised experience working with children in the field.
2. Psychologists with a doctoral degree in school or clinical psychology with no specialization in school or pediatric neuropsychology with completion of post-graduate certification program in school neuropsychology

3. The completion of a specialist program in school psychology with the completion of a post-graduate certification program in school neuropsychology. Once a candidate has completed a post-graduate certification program in school neuropsychology, the ABSNP requires all candidates to pass a written exam, complete an oral exam of their case study, and provide documentation of professional training and skills (ABSNP, 2012).

While there have been an array of roles and functions proposed for school psychologists with training in neuropsychology (Cleary & Scott, 2011; Crespi & Cooke, 2003; Pelletier et al., 2004), the ABSNP has outlined their own as well. According to the ABSNP (2012), the role and function of school neuropsychologists are as follows:

1. Using skills in assessment and interpretation for children with neurological complications.
2. Helping interpret outside evaluations from other providers.
3. Using the latest research in brain development for educational purposes.
4. Providing educational interventions that are rooted in neuropsychological research.
5. Assisting children with Traumatic Brain Injuries (TBI) and other medical conditions by acting as a liaison between outside medical providers and the school.
6. Working with those professionals in curriculum development to ensure that instruction is in line with current neuropsychological research.
7. Providing training for educators and parents on neuropsychological correlates that influence childhood disorders.
8. Using evidence-based research to ensure that neuropsychological based interventions are valid (Miller, 2007).

Clinical Neuropsychology versus School Neuropsychology

After the formation of the ABSNP in 1999, authors in the field of psychology began to compare the training requirements, competencies, and the role and function of this new specialty of “school neuropsychology” with the more established field of clinical neuropsychology. In one of these first works, Crespi and Cooke (2003) acknowledged that a need for those with neuropsychological training existed in educational settings but questioned whether or not school psychologists need the same type of training that neuropsychologists receive who work in clinical settings. At a minimum, Crespi and Cooke argued that all school psychologists should possess entry level knowledge of neuropsychological principles and methods given the abundance of evidence in the literature regarding neuropsychological research. However, the authors raised concerns regarding the high level of standards already found in board certification in neuropsychology with non-doctoral level credentialing by a board such as the ABSNP. Crespi and Cooke cautioned that “with a potpourri of half-day workshops, consumers – including public schools – are increasingly receiving offers by contractual providers with widely disparate training. Certainly, left unattended, the risks for inaccurate diagnoses and interventions seem large” (p. 100). However, even with these words of caution, the authors acknowledged that a board such as the ABSNP could provide school psychologists with foundational neuropsychological skills to apply in practice that could lead to further specialty training.

In response to Crespi and Cooke’s (2003) work, Pelletier et al., (2004) strongly argued against the subspecialty of school neuropsychology. The authors opposed the title of “school neuropsychology” in part because they “object to the promulgation of such a title that seems to attempt to describe two areas of specialty at once, without necessarily providing appropriate

training in either specialty” (p. 21). These authors also raised concerns that training programs, such as the ABSNP, do not meet the widely accepted APA standards set forth by the Houston Conference in neuropsychology. Although the authors agree with Crespi and Cooke’s (2003) assertion that supplemental training in neuropsychology for school psychologists may be beneficial, the title of “neuropsychologist” should only be used by those who receive formal graduate training in neuropsychology and complete post-doctoral fellowships in neuropsychology (Pelletier et al., 2004). Pelletier et al., (2004) argues that using the title of a “neuropsychologist” confuses the public and does not properly protect the public. These authors also point out a potential conflict of interest for the individuals who founded the ABSNP because they created a training program that prepares students to sit for the ABSNP board examination which charges tuition in which they stand to profit from.

In a follow-up article to Pelletier et al., (2004), Lange (2005) argued against the position that school neuropsychology is not a credible specialty. Lange instead calls on psychologists in the field to make decisions on the validity of any specialty that is based on empirical research. Lange points out that it is common place that many doctoral and non-doctoral certification programs lie outside of both the APA and NASP and are no more unethical than the ABSNP. Board certifications such as the ABPP and ABCN are also corporate entities also fall outside of the APA much like the ABSNP and NASP (Lange, 2005). However, NASP now recognizes “school neuropsychologist” as one of five alternative careers that school psychologists can pursue (NASP, 2011).

In one paper authored by Marolt and Thompson (2008), school psychologists were part of a cohort of other school psychologists who enrolled in a post-certificate school neuropsychology

training program in Columbus, Ohio. This training consisted of 144 contact hours over 8 weekends, 500 practicum hours, three school neuropsychological evaluations, and a final exam to demonstrate competencies. Marolt and Thompson emphasized that the instructor focused on the importance of using a neuropsychological approach to help understand why students struggle and that using this approach can help provide direction in academic intervention planning. Nine of the school psychologists in this cohort were quoted directly on their experiences during this training program, which were overwhelmingly positive (Marolt & Thompson, 2008, p. 4-5). For instance, one such participant in the Marolt and Thompson study believed that their confidence in assessing and intervening for students stated that:

The class has really helped me understand the underlying neural basis for many of the disabilities we see in the school setting. I now have a better understanding of what to look for when assessing students and what each assessment is really measuring. I therefore, feel more confident when providing recommendations to teachers for use in the classroom setting. (p. 6)

Current Methods and Trends In Evaluating Students with SLDs

With the adoption of the reauthorized IDEA in 2004, important revisions were made in how students could be identified with SLDs. After this reauthorization, evaluators could no longer require a severe discrepancy between cognitive ability and achievement and were required to take into account a child's response to scientific research-based instruction as one of the criteria in identifying SLDs. These changes helped bring the RTI model into the mainstream as a new way to identify students with SLDs.

The Use of Neuropsychology Assessments and RTI in SLD evaluations

Reauthorization of IDEA in 2004 also helped pave the way for more comprehensive assessments for evaluators due to the phasing out of the antiquated cognitive-achievement discrepancy analysis that had come into general practice when making determinations about eligibility for learning disability services. In light of IDEA 2004's requirement to no longer require the use of the discrepancy model due to a lack of support regarding the efficacy of such an approach (Fiorello et al., 2007; Meyer, 2000), neuropsychological assessments have been found to provide evaluators with a more comprehensive view of a child's cognitive strengths and weaknesses.

RTI as a Method for SLD Identification and Intervention

With the inclusion of a RTI based criterion regarding special education eligibility, came with it some proponents who argued that RTI could serve as a standalone measure in identifying students with SLDs. Authors such as Gresham, Restori, and Cook (2008) and Gresham and colleagues (2005) proposed that traditional SLD evaluation components, such as full battery cognitive and achievement assessments, are no longer required in an RTI framework. However, there is strong criticism that the RTI framework has not yet been empirically validated on a large scale (Reynolds & Shaywitz, 2009) and that educational professionals in the field are too quick to adopt the RTI approach in the face of many unanswered questions (Fuchs & Deshler, 2007; Reynolds & Shaywitz, 2009). This "anti-testing" sentiment among RTI purists has resulted in strong opposition from those who believe that cognitive and neuropsychological assessments need to be a part of identifying SLDs.

Gresham and colleagues (2005) argued that measures of cognitive functioning have little use in SLD identification in light of recent evidence that discredits traditional discrepancy analysis. Similarly, Gresham et al., (2008) indicated that RTI in an eligibility context allows school psychologists to focus more on intervention rather than on a cognitive-achievement approach focusing on eligibility. Gresham et al., (2008) stated that “the authors of this paper have been unable to locate an empirically-based rationale for the inclusion of measures of intelligence or psychological processing within a properly conducted RTI approach” (p. 7).

Others are not as optimistic with utilizing RTI as a standalone for identification and intervention of SLD. In an article examining that questions the empirical support for RTI and readiness of educational professionals to implement RTI in the schools, Reynolds and Shaywitz (2009) point out that RTI is not suitable for identification or intervening with students with SLDs because: (a) gifted or students with high cognitive ability may not be identified with reading problems; (b) cognitive strengths and weaknesses cannot be identified to pinpoint what specific processes in reading are negatively affected; (c) the timeline and intensity of the intervention in RTI is not currently understood; and (d) there is no consensus in what response to an intervention looks like.

Kavale and colleagues (2006) also question the vagueness in what “response” to intervention means and make several key arguments against RTI as a tool for SLD identification. In the RTI model, student responsiveness to intervention may be left up to teachers leaving them to decide what constitutes a failure of responsiveness (Kavale and colleagues, 2006). Kavale and colleagues argue that with a lack of established criteria to define what response means, teacher perceptions of what constitutes an SLD may influence special education eligibility thus making

standardized instruments a better alternative to determine the presence of a SLD. If teachers do rely on an array of assessment measures in an RTI framework, this will likely lead to a similarly unreliable way to identify students with SLDs as found in a discrepancy analysis (Fuchs & Fuchs, 2006). This inconsistency or what defines a “response” to intervention is further complicated when state and federal standards are taken into account (Mastropieri & Scruggs, 2005). Even if students do fail to respond to an intervention, the intervention in question may not have been suitable for that student and does not necessarily indicate the presence of a SLD (Kavale et al., 2006). It would stand to reason that if a student had been exposed to an evidence-based intervention and did not respond, then it would be difficult to explain how special education could design an appropriate program without additional information (Flanagan et al., 2006). Therefore, without comprehensive evaluations SLDs cannot be properly diagnosed and an appropriate intervention cannot be developed that takes into account the heterogeneity of each student’s needs (Kavale et al., 2006; Flanagan et al., 2006).

Neuropsychological Assessments as Part of a Comprehensive Evaluation

Neuropsychological assessments can provide evaluators with a more comprehensive view of student strengths and weaknesses compared with traditional cognitive assessments (Decker, 2008; Feifer, 2008; Fiorello et al., 2006; Hale et al., 2010; Schmitt & Wodrich, 2008; Semrud-Clikeman, 2005; Witsken, Stoeckel, & D’Amato, 2008). In addition to the basic cognitive functions, neuropsychological assessments further assess language, learning and memory, attention, executive functions, visual-spatial processing, and sensory-motor functions (D’Amato et al., 2005). These domains can help evaluators better answer the “why” behind student learning differences by focusing on processing deficits needed for a particular academic skill;

phonological processing, rapid naming, etc. (Witsken et al., 2008,) or even other problems such as attention (Semrud-Clikeman, 2005) or an emotional problem (Hale et al., 2004) over the course of an evaluation. By focusing on processing deficits or specific functional deficits instead of skill deficits in an RTI model, interventions can instead be structured to meet the unique needs of each individual student (Decker, 2008; Semrud–Clikeman, 2005).

Using neuropsychological assessments in school-based practice carries with it several other advantages as well. Schmitt and Wodrich (2008) contend that when neuropsychological assessments are used as part of a comprehensive evaluation , they enable school psychologists to: (a) access current literature that educates them on learning syndromes; (b) connect them with the historical discipline of psychology in “understanding, predicting, and controlling human behavior” (p. 827); and (c) “increase the likelihood that the field of SLD converges with the growing field of neuroscience, which now offers compelling information about the neurological substrates associated with various school learning problems” (p. 827).

A Dual Model of Neuropsychological Assessment and RTI

While the RTI model has been criticized as a sole method to identify and develop interventions for students with possible SLDs, there are advantages to adopting a framework which includes both neuropsychological assessment and RTI as a means to help students get the support they need. In fact, many proponents of using neuropsychological assessments as part of a comprehensive evaluation also advocate for the inclusion of RTI as part of the process of identifying SLDs (Decker, 2005; Feifer, 2008; Hale et al., 2004; Hale et al., 2006; Hale et al., 2010; Mastropieri & Scruggs, 2005; Schmitt & Wodrich, 2008; Semrud-Clikeman, 2005; Witsken et al., 2008). This dual model is best conceptualized by where RTI serves as a model of

prevention that aids in the identification of students with academic difficulties and helps evaluators collect additional data prior to a comprehensive evaluation that will ultimately help diagnose and provide individualized recommendations for intervention. In this way, evaluators can assess both skill deficits via the RTI approach and process deficits through the use of neuropsychological assessments (Witsken et al., 2008). By utilizing two different methods to determine whether or not a child has a SLD, school psychologists can minimize errors in the diagnostic process (Feifer, 2008).

In an effort by the Learning Disabilities Association of America (LDA) to bring additional guidance into the realm of specific learning disability identification and intervention in relation to RTI and comprehensive evaluation, the LDA created The Learning Disabilities Association of America's White Paper on Evaluation, Identification, and Eligibility Criteria for Students with Specific Learning Disabilities (Hale et al., 2010). The paper's primary objective was to help create recommendations that may guide future policy, legal, and training decisions toward children with SLDs. A panel of 58 experts in the field was gathered that had extensive experience publishing works in SLDs, neuropsychological and cognitive assessments, and SLD interventions. Because of the goal of the White Paper to influence public policy on the subject of SLDs, the authors choose to include experts who advocate for a balanced approach of using comprehensive assessments and response to intervention rather than those who advocated primarily for the traditional ability-achievement discrepancy analysis or for a response to intervention method of identifying SLDs (Hale et al., 2010). These experts were surveyed and the following panel position was developed:

1. Maintain the SLD definition and strengthen statutory requirements in SLD identification procedures.
2. Neither ability-achievement discrepancy analyses nor failure to respond-to-intervention alone is sufficient for SLD identification.
3. To meet SLD statutory and regulatory requirements, a “third method” approach that identifies a pattern of psychological processing strengths and weaknesses, and achievement deficits consistent with this pattern of processing weaknesses, makes the most empirical and clinical sense.
4. An empirically-validated RTI model could be used to prevent learning problems in children, but comprehensive evaluations should occur for SLD identification purposes, and children with DLS need individualized intervention based on specific learning needs, not merely more intense intervention designed for children in general education.
5. Assessment of cognitive and neuropsychological processes should be used not only for identification, but for intervention purposes as well, and these assessment-intervention relationships need further empirical investigation.

Overall, the panel recommended that both RTI and comprehensive psychological and academic assessments need to work in conjunction to better all students. The conclusion by the authors is not surprising given the large body of literature that supports the integration of both these models.

Summary

Training in neuropsychology may help school psychologists become better advocates, more effective diagnosticians, and increasingly skilled interventionists for students with SLDs. While there remains some academic debate regarding how to best train school psychologists in neuropsychology, it is plausible that additional training opportunities outside of school psychology graduate programs may help fulfill this type of training in the field. If the field of school psychology wants to align itself with the burgeoning evidence regarding brain functioning and SLDs, it must take the necessary steps to prepare school psychologists to capitalize on this knowledge.

Providing diagnostic information from a comprehensive evaluation including neuropsychological assessments *and* through an RTI framework for teachers, parents, and children with SLDs shows promise. Having an RTI framework to identify and program for students with suspected or legitimate SLDs is not enough. As Decker (2008) so eloquently states, “diagnosis empowers parents. Explaining to parents that their child has a reading problem because he or she only reads 25 words per minute does little to help the parents understand the problem” (p. 807). Diagnosis can also empower those adults who the student works within the school setting along with the child themselves. Neuropsychological assessments can provide useful information on the nature of the learning disability and help everyone involved in the child’s life become better advocates through shared knowledge in designing interventions (Decker, 2008).

Many school psychology graduate programs offer a limited amount of neuropsychological assessment training and experiences for students. If school psychologists are

to respond to this demand of providing neuropsychological assessments in schools, then the ABSNP certification can provide a pathway for meeting this demand.

Virtually no research exists that examines the perceived confidence of school psychologists who have completed the ABSNP certification in helping identify and program for students with SLDs. This study is being proposed to help address the gap in the literature by examining the perception of competency of school psychologists who have earned the ABSNP certification. Given the promise of having those with neuropsychological training to help students with SLDs, it may be beneficial to have a better understanding as to whether the ABSNP is adequately equipping school psychologists with these neuropsychological skills.

Chapter 3 will review the research design and approach to the study. The sample size, sampling method, participants, and survey instrument will be presented and reviewed. The procedures, statistical methods, data collection steps, and analyses will be reviewed. Methods for participant protection and the presentation of results will be proposed.

Chapter 3: Research Method

Introduction

The purpose of this study was trifold. First, the purpose of this study was to help understand the relationship between the ABSNP certification and school psychologists' perceived professional confidence in identifying and intervening for students with SLDs. Survey data from ABSNP diplomates was collected. Secondly, data from this study was intended to help researchers in the field of education and psychology determine if ABSNP certification is perceived as a valuable vehicle to help obtain further neuropsychological training. Additionally, this study may also provide valuable information to stakeholders within the ABSNP and school psychologists interested in obtaining the ABSNP certification.

The following chapter will provide an overview of the research design, setting and sample, participants, sampling method, instrumentation and materials, data collection and analysis, presentation of results, and how participants were protected in this study.

Research Design

This study was descriptive in nature, using the survey method to retrospectively examine school psychologists' perceptions regarding their neuropsychological assessment and intervention skills after receiving ABSNP certification. A survey was used because it allows data to be collected from a larger sample and affords easy access via the Internet. According to Kaslow et al. (2009), self-assessment measures, such as surveys, are a tool researchers can use to evaluate perceived competence of others. In fact, the survey method has been used previously to measure perceived competency for school psychologists (Arbolino, Lewandowski, & Eckert, 2008; Machek & Nelson, 2010; Nelson & Machek, 2007).

Methodology

Participants

The population of focus for this study was certified/licensed school psychologists in the United States who were also ABSNP diplomates. According to the ABSNP, at the time of this study the total United States and international population of school psychologists with ABSNP certification in the, was 491. Among them, 481 school psychologists in the United States met the study's initial criteria. The target population for this study was individuals who are ABSNP diplomates who are certified and/or licensed school psychologists, have completed a post-certification training in school psychology, practice school psychology in the United States, and hold master's, specialist level, or doctoral degrees in school psychology. To control for differences in perceived confidence based on differing educational coursework and practicum/internship/post-doctoral experiences, school psychologists who obtained other degrees (e.g., clinical psychology, counseling psychology, etc.) as a path to becoming school psychologists were excluded.

Sampling Method

The sample of participants was drawn from the *ABSNP Roster of Current Diplomates* (ABSNP, 2012). The list of ABSNP diplomates is organized according to the states where they reside. Diplomates who meet the licensure/certification and educational criteria were sought as candidates for this study. No special sampling technique was used because this sample closely represented the ABSNP diplomate population. Diplomates whose educational and professional information were incomplete or missing on the ABSNP site were still invited to participate. However, participants were subsequently disqualified if they indicated on the survey that they

did not meet the criteria. A random sample of 12 ABSNP diplomates were selected and invited prior to conducting the study to review the survey instrument for validity and reliability.

Procedures

The participants for this study were recruited from a registry on the ABSNP website that lists all the e-mail addresses of the current diplomates in school neuropsychology. A link to the survey along with the informed consent notice was sent to each potential participant via e-mail. Participant e-mails were collected and entered into Survey Monkey. The purpose of the study was included within the informed consent document (Appendix E) in the survey e-mail to each participant.

Demographic information required on the survey that was collected included:

1. Verification that participants received their graduate training in a school psychology program.
2. Gender.
3. Years of practice in school psychology.
4. The grade(s) of students served.
5. The highest level of education completed.
6. Current state(s) of practice.
7. Whether or not certification or licensure is currently held in school psychology in one or more states.
8. Number of years of ABSNP diplomate status.

To control for any errors common in descriptive research, several precautionary measures were taken. To reduce frame error, the most recent list of ABSNP diplomates was collected the

day before the participants were invited to participate in the study to ensure that new diplomates are included and former diplomates are excluded from the study. Measurement error was controlled by assessing the validity and reliability of the survey instrument by reviewing the research literature, conducting a field test, and recruiting a panel of ABSNP diplomates to review and rate the survey instrument. To help control for non-response error, the researcher encouraged non-responders of both the panel and survey instrument to participate by sending out one additional reminder notice e-mail.

Instrumentation and Materials

The survey instrument for this study was designed specifically to help understand the perceptions of confidence of ABSNP diplomates in identifying SLDs and utilizing interventions for students with SLDs. The survey instrument used for this study was developed from several different resources. Because no single survey instrument was currently found assessing school psychologists' competency in neuropsychology, a survey was developed to answer the research questions generated for this study. Accessing the research literature of professional competence in neuropsychology and in the NASP Standards for Training and Credentialing of School Psychologists, both contributed to the design of the survey for this study (NASP, 2010a; NASP, 2010b; Rey-Casserly, Roper, & Bauer, 2012). Because this survey was developed from the literature as opposed to a standardized instrument, no data on the psychometric properties of this instrument are available. Previous studies (Fish & Margolis, 1988; Nelson & Machek, 2007; Robinson-Zanartu, 2011) also point out that they have no psychometric data for the same reason.

Instrument Validity and Reliability

To help establish content validity, a panel of current ABSNP diplomates was selected. This panel was selected to help ensure that the domains and questions on the survey are appropriately selected. Panel members were asked to rate the clarity of each question. Each diplomate on the panel received an e-mail which explained the purpose of both the study and the panel. An offer to participate in the panel, a link to the survey, and an attachment of the content validation form with directions was provided. The content validation form asked Panel members to use a 4-point Likert-type scale to rate questions for both clarity and suitability. Items will range from *Very Unsuitable* (1) to *Very Suitable* (4) and *Very Unclear* (1) to *Very Clear* (4). All items that received a clarity or suitability rating of a 3 or better by 80% of the panel, were used for the survey. Feedback from the panel was intended to help inform survey development. Panel members were subsequently excluded from participating in the study.

To help address internal consistency, the reliability of this survey was obtained by an analysis of internal consistency by examining participant responses. Typically, a pilot study would be used to help determine the reliability of a survey. However, a pilot study was not chosen for this study due to the relatively small population of ABSNP diplomates. In addition, a pilot study may also reduce the response rate. Cronbach's alpha was used because the proposed survey instrument utilizes multiple response categories. Cronbach's alpha coefficients for each Likert-type question from the survey are as follows: (a) for confidence in identifying reading (.75), writing (.78), and math (.77) disabilities as a result of training, (b) for diagnostic accuracy in identifying reading (.77), writing (.82) and math (.80), (c) for the ability to recommend specific intervention/strategies for reading (.75), writing (.76) and math (.75), (d) regarding

whether the training provided diplomates with a broader range of reading (.74), writing (.76) and math (.74) interventions to recommend to teachers and parents. According to Field (2009), this instrument demonstrated an adequate level of reliability for a survey instrument.

To help maximize face validity and minimize survey design errors, a field test was conducted. The survey instrument was examined by the dissertation chair and methods committee member, as well as four school psychologists to assess overall suitability, clarity, and appropriateness of each question on the survey. Each individual participating in the field test was asked to complete the survey and provide feedback. Feedback was considered by the researcher and changes were made to the survey instrument.

Data Collection and Analysis

Survey data was collected via a survey instrument delivered through Survey Monkey. Completed survey data was exported from Survey Monkey to the Statistical Package for the Social Sciences (SPSS) format for further statistical analysis. Access to current ABSNP diplomate contact information is available on the ABSNP website. Before collecting data for this study, a field study and diplomate panel was used to help with survey development. For the diplomate panel, the content and validation form (Appendix B) was delivered to panel members via e-mail with instructions to complete then return the content validation form via e-mail to the researcher. Completed surveys from the field study would be used for further analysis of survey design.

Statistical Methods and Data Analyses

The survey data that was used to answer the proposed research questions were analyzed using statistical methods available through SPSS. A descriptive research design was used to

examine the perceptions of ABSNP diplomates in regard to their confidence in their ability to diagnose SLDs and provide interventions for students with SLDs after receiving their training in neuropsychology. The research questions developed for this study will be reviewed below. The statistical analysis that will be applied to each question will also be reviewed.

Research Question 1. *Do school psychologists believe they are more confident in identifying reading disabilities after becoming ABSNP diplomates?*

To answer RQ1, descriptive statistics (standard deviations, means, percentages, frequencies) and a chi-square analysis were used.

Research Question 2. *Do school psychologists believe they are more confident in identifying writing disabilities after becoming ABSNP diplomates?*

To answer RQ2, descriptive statistics (standard deviations, means, percentages, frequencies) and a chi-square analysis will be used.

Research Question 3. *Do school psychologists believe they are more confident in identifying math disabilities after becoming ABSNP diplomates?*

To answer RQ 3, descriptive statistics (standard deviations, means, percentages, frequencies) and a chi-square analysis were used.

Research Question 4. *Do school psychologists believe that their diagnostic accuracy for identifying students with reading disabilities has increased after becoming ABSNP diplomates?*

To answer RQ 4, descriptive statistics (standard deviations, means, percentages, frequencies) and a chi-square analysis were used.

Research Question 5. *Do school psychologists believe that their diagnostic accuracy for identifying students with writing disabilities has increased after becoming ABSNP diplomates?*

To answer RQ 5, descriptive statistics (standard deviations, means, percentages, frequencies) and a chi-square analysis were used.

Research Question 6. *Do school psychologists believe that their diagnostic accuracy for identifying students with math disabilities has increased after becoming ABSNP diplomates?*

To answer RQ 6, descriptive statistics (standard deviations, means, percentages, frequencies) and a chi-square analysis were used.

Research Question 7. *Do school psychologists believe that the interventions they recommend for reading disabilities are more specific to the needs of students after becoming ABSNP diplomates?*

To answer RQ 7, descriptive statistics (standard deviations, means, percentages, frequencies) and a chi-square analysis were used.

Research Question 8. *Do school psychologists believe that the interventions they recommend for writing disabilities are more specific to the needs of students after becoming ABSNP diplomates?*

To answer RQ 8, descriptive statistics (standard deviations, means, percentages, frequencies) and a chi-square analysis were used.

Research Question 9. *Do school psychologists believe that the interventions they recommend for math disabilities are more specific to the needs of students after becoming ABSNP diplomates?*

To answer RQ 9, descriptive statistics (standard deviations, means, percentages, frequencies) and a chi-square analysis were used.

Research Question 10. *Do school psychologists believe that they have a broader range of interventions they can recommend to teachers for reading disabilities after becoming ABSNP diplomates?*

To answer RQ 10, descriptive statistics (standard deviations, means, percentages, frequencies) and a chi-square analysis were used.

Research Question 11. *Do school psychologists believe that they have a broader range of interventions they can recommend to teachers for writing disabilities after becoming ABSNP diplomates?*

To answer RQ 11, descriptive statistics (standard deviations, means, percentages, frequencies) and a chi-square analysis were used.

Research Question 12. *Do school psychologists believe that they have a broader range of interventions they can recommend to teachers for math disabilities after becoming ABSNP diplomates?*

To answer RQ 12, descriptive statistics (standard deviations, means, percentages, frequencies) and a chi-square analysis were used.

Research Question 13. *Is there a difference between doctoral, master's and specialist level school psychologists' beliefs about their confidence in identifying and providing interventions for students with SLDs?*

To answer RQ 13, an ANOVA was used to compare the mean differences in perceptions of ABSNP diplomates in both the identification of SLDs and use of interventions for students with SLDs by education level.

Dependent Variable

The dependent variables of this study are in the form of perceived confidence by ABSNP diplomates within the areas of assessment and intervention of students with SLDs. Participants were asked to assess their skills in each area after they have obtained their ABSNP certification. Survey questions with a Likert scale were used to assess perceived confidence in each area. The survey area of assessment included questions that target the participants' perceptions of confidence in SLD identification, current use of neuropsychological assessments in SLD evaluations, and diagnostic accuracy of neuropsychological assessments. The survey area that focuses on intervention included questions that target participants' perceptions of providing a broader range of interventions, the ability to recommend interventions that are more specific, and recommending specific interventions that meet the needs of an individual student.

Presentation of Results

Data collected in this study are presented and analyzed in Chapter 4. Participants' attitudes toward diagnosis and intervention are displayed using tables. Tables include descriptive statistics such as standard deviations, percentages, frequencies and means. Demographic information is presented in other tables. Chi-square analyses were used to test the hypotheses of each research question. A statistical analysis using an ANOVA will be displayed in tables examining any relationships (significant or non-significant) that exist between ABSNP diplomate perceptions and education level. Participants that are not eligible for this study will not be included in the final analysis. All data were stored on a secure, password-protected survey website.

Protection of Participants

All prospective participants had the opportunity to decline taking part in the study with no adverse consequences. The purpose of the study and informed consent were included in the survey e-mail to each participant. All participant survey data was protected on Survey Monkey which is password protected and features enhanced SSL security. All completed surveys collected through Survey Monkey did not contain any identifying information such as the names or the e-mail of each participant. All data was kept on a portable password-protected USB drive stored in a locked cabinet in the researcher's home. The data will be destroyed after five years.

Summary

Chapter 3 provided an overview of the design and methodology of the current study. This study utilizes a descriptive research design which aims to capture the perceptions of ABSNP diplomates in relation to their perceived confidence in identifying and providing interventions for students with SLDs. A survey instrument was designed by the researcher to collect participant perceptions' and demographic data. A diplomate panel and field study was conducted to refine the research instrument's suitability and clarity to better address the research questions. Data obtained from the survey were analyzed using statistical procedures to answer the research questions.

Chapter 4: Results

Introduction

The purpose of this study was to help understand the relationship between the ABSNP certification and school psychologists' perceived professional confidence in identifying and intervening with SLDs after receiving their certification. This chapter will review the results from this study. The first section discusses the results from the diplomate panel and the impact of the panel's results on the survey instrument. The remainder of this chapter will review the findings of the demographic and research questions posed in Chapter 1.

Diplomate Panel

To help establish content validity, a panel of 12 randomly selected ABSNP diplomates were selected and contacted via e-mail prior to collecting survey data. They were sent an e-mail with an offer to participate in the panel, a link to the survey, and a copy of the content validation form. The data collection period for the diplomate panel spanned 3 weeks. None of the 12 content validation forms were returned over this period of time. Therefore, the survey was disseminated to the participants unaltered from the original format.

Data Collection

Time Frame and Return Rate

Survey data were collected over a 3-week period. All 481 ABSNP diplomates living in the U.S and listed in the ABSNP directory were deemed candidates. Out of those 481 diplomates, 12 were excluded due to the pilot study and 16 were excluded due to the lack of e-mail addresses in the directory. Therefore, the sample prior to the dissemination of the survey consisted of 453 diplomates. After the dissemination of the survey, it was found that eight diplomates had previously opted out of any future surveys on Survey Monkey and three

diplomates opted out during the current study. An additional 11 e-mail addresses were non-deliverable. Twelve diplomates were disqualified because (a) they were not currently certified and/or licensed school psychologists; (b) they did not graduate from a graduate program in school psychology; or (c) they did not attend a post-graduate training program as a means to becoming ABSNP diplomates. One survey was excluded as incomplete. This reduced the sample to 418 diplomates. Of those 418, 117 surveys were returned completed resulting in a response rate of 27.99%.

Participant Demographics

Participant demographic data were obtained from the online survey. Regarding gender, nearly three quarters of the respondents were female. Forty six (39.3%) of the respondents were between the ages of 41 and 55. The northeast and western regions had the highest representation of diplomates. Demographic information is provided in Table 1.

Table 1

Participants' Gender/Age/Region Distribution

Demographic		Frequency (%) ^{ab}
Gender	Male	26 (22.4)
	Female	92 (78.0)
Age	25 and under	0 (0)
	26-40	29 (24.8)
	41-55	46 (39.3)
	56 and over	42 (35.9)
Region	Northeast	41 (32.5)
	South	30 (23.8)
	Midwest	17 (13.5)
	West	38 (30.2)

^a Due to missing data, the frequencies do not total 119.

^b The following percentages represent the total number of responses provided.

Level of education among participants' non-doctoral level diplomates represented the majority of respondents. Table 2 represents the level of education that participants hold.

Table 2

Participants' Level of Education

Years	Frequency (%) ^{ab}
Master's	35(29.7)
Specialist/6 th year	31 (26.3)
Doctorate	52 (44.1)

^a Due to missing data the frequencies do not total 119.

^b The following percentages represent the total number of responses provided.

The majority of respondent's have practiced in the field of school psychology between 6-15 years. Table 3 represents the number of years in practice as a school psychologist.

Table 3

Participants' Years in Practice as a School Psychologist

Years	Frequency (%)
5 and under	14 (11.8)
6-15	45 (37.8)
16-25	35 (29.4)
26 and over	25 (21.0)

The frequencies and percents for respondents' grade and populations served are provided in Table 4. Participants' source of funding for both the school neuropsychology training and ABSNP certification can be found in Table 5 and Table 6 respectively.

Table 4

Participants' Grades/Populations Served

Level	Frequency (%) ^{ab}
Birth-to-three	11 (9.4)
Pre-K	62 (53.0)
First	52 (44.4)
Second	53 (45.3)
Third	53 (45.3)
Fourth	52 (44.4)
Fifth	51 (43.6)
Sixth	34 (29.1)
Seventh	25 (21.4)
Eighth	25 (21.4)
Ninth	23 (19.7)
Tenth	23 (19.7)
Eleventh	23 (19.7)
Twelfth	23 (19.7)
K-12	67 (57.3)

^a Due to missing data the frequencies do not total 119.

^b The following percentages represent the total number of responses provided.

Table 5

Participants' Source of Funding for School Neuropsychology Training

Funding	Frequency (%) ^{ab}
Self-Payment	93 (80.2)
School District	30 (25.9)
Educational Agency	5 (4.3)
Not Applicable	1 (0.9)

^a Due to multiple forms of payment the frequencies total more than 119.

^b The following percentages represent multiple responses.

Table 6

Participants' Source of Funding for School Neuropsychology Board Certification

Funding	Frequency (%) ^{ab}
Self-Payment	113 (95.8)
School District	5 (4.2)
Educational Agency	0 (0)

^a Due to missing data the frequencies do not total 119.

^b The following percentages represent the total number of responses provided.

According to the survey data, the majority of respondents have held diplomate status between 4-6 years. Table 7 represents the number of years participants have held ABSNP diplomate status. The majority of respondents reported that they were satisfied regarding their post-secondary training in school neuropsychology. Table 8 represents respondent overall level of satisfaction with their post-secondary training in school neuropsychology.

Table 7

Participants' Years as a ABSNP Diplomate

Years	Frequency (%)
3 and under	40 (33.6)
4-6	56 (47.1)
7-9	17 (14.3)
10 and over	6 (5.0)

Table 8

Participants' Satisfaction with Post-Graduate School Neuropsychology Training

Statement	VD <i>n (%)</i>	D <i>n (%)</i>	NDS <i>n (%)</i>	S <i>n (%)</i>	VS <i>n (%)</i>	M	SD
<i>Overall, how satisfied are you with the post-graduate school neuropsychology training you received?</i>	1 (0.8)	1 (0.8)	3 (2.5)	40 (33.6)	74 (62.2)	4.55	.67

Note: For satisfaction regarding post-graduate school neuropsychology training, Very Dissatisfied (VD); Dissatisfied (D); Neither Dissatisfied nor Satisfied (NDS); Satisfied (S); Very Satisfied (VS).

Data Analysis

To examine the perceptions of ABSNP diplomates, 13 research questions were developed. The research questions and hypotheses are discussed in terms of perceived confidence in both the assessment and intervention of SLDs. The data collected for this study was analyzed using descriptive statistics (means, standard deviations, frequencies and percentages) and an ANOVA.

Research Question 1

Do school psychologists feel more confident in their ability to identify reading disabilities after becoming ABSNP diplomates?

With regard to whether or not school psychologists feel more confident in their ability to identify reading disabilities after becoming ABSNP diplomates, the data is provided in Table 4.9. Out of 119 respondents, the majority ($M = 4.52$, $SD = .82$) of school psychologists feel more confident identifying reading disabilities as a result of their diplomate status. Although the

majority of respondents (93.3%, $n = 111$) agreed with the statement, (3.3%, $n = 4$) disagreed.

Additionally, four respondents (3.4%), neither agreed nor disagreed with the statement.

The null hypothesis states there is no significant difference in school psychologists' perception of confidence in their ability to identify reading disabilities after becoming ABSNP diplomates. The alternative hypothesis states there is a significant difference in school psychologists' perception of confidence in their ability to identify reading disabilities after becoming ABSNP diplomates. The results of the chi-square analysis was statistically significant at the alpha level of .05, $X^2(4, N = 119) = 179.782 p < .000$. The alternate hypothesis was supported based on the results of the chi-square analysis and frequency distribution found in

Table 9.

Table 9

Participants' Perceived Level of Confidence in Identifying Reading Disabilities as a Result of Training

Statement	SD <i>n (%)</i>	D <i>n (%)</i>	NAD <i>n (%)</i>	A <i>n (%)</i>	SA <i>n (%)</i>	M	SD
<i>My confidence in my ability to identify reading disabilities has improved as a result of the training</i>	3 (2.5)	1 (0.8)	4 (3.4)	34 (28.6)	77 (64.7)	4.52	.82

Note: For the Perceived Level of Confidence in Identifying Reading Disabilities as a Result of Training, Strongly Disagree (SD); Disagree (D); Neither Agree nor Disagree (NAD); Strongly Agree (SA).

Research Question 2

Do school psychologists feel more confident in their ability to identify writing disabilities after becoming ABSNP diplomates?

With regard to whether or not school psychologists feel more confident in their ability to identify writing disabilities after becoming ABSNP diplomates, the data is provided in Table 10. Out of 119 respondents, the majority ($M = 4.37, SD = .86$) of school psychologists feel more confident identifying writing disabilities as a result of their diplomate status. Although the majority of respondents (88.23%, $n = 105$) agreed with the statement, (4.2%, $n = 5$) disagreed. Nine (7.6%) of respondents neither agreed or disagreed with the statement.

The null hypothesis states there is no significant difference in school psychologists' perception of confidence in their ability to identify math disabilities after becoming ABSNP diplomates. The alternative hypothesis states there is a significant difference in school psychologists' perception of confidence in their ability to identify math disabilities after becoming ABSNP diplomates. The results of the chi-square analysis was statistically significant at the alpha level of .05, $X^2(4, N = 119) = 131.882, p < .000$. The alternate hypothesis was supported based on the results of the chi-square analysis and frequency distribution found in Table 10.

Table 10

Participants' Perceived Level of Confidence in Identifying Writing Disabilities as a Result of Training

Statement	SD <i>n (%)</i>	D <i>n (%)</i>	NAD <i>n (%)</i>	A <i>n (%)</i>	SA <i>n (%)</i>	M	SD
<i>My confidence in my ability to identify writing disabilities has improved as a result of the training</i>	3 (2.5)	2 (1.7)	9 (7.6)	39 (32.8)	66 (55.5)	4.37	.86

Note: For the Perceived Level of Confidence in Identifying Writing Disabilities as a Result of Training, Strongly Disagree (SD); Disagree (D); Neither Agree nor Disagree (NAD); Strongly Agree (SA).

Research Question 3

Do school psychologists feel more confident in their ability to identify math disabilities after becoming ABSNP diplomates?

With regard to whether or not school psychologists feel more confident in their ability to identify math disabilities after becoming ABSNP diplomates, the data is provided in Table 11. Out of 119 respondents, the majority ($M = 4.39$, $SD = .88$), of school psychologists feel more confident identifying math disabilities as a result of their diplomate status. Although the majority of respondents (89.07%, $n = 106$) agreed with the statement, (4.2%, $n = 5$) disagreed. Eight (6.7%) respondents neither agreed nor disagreed with the statement.

The null hypothesis states there is no significant difference in school psychologists' perception of confidence in their ability to identify writing disabilities after becoming ABSNP diplomates. The alternative hypothesis states there is a significant difference in school psychologists' perception of confidence in their ability to identify writing disabilities after

becoming ABSNP diplomates. The results of the chi-square analysis was statistically significant at the alpha level of .05, $\chi^2(4, N = 119) = 139.193 p < .000$. The alternate hypothesis was supported based on the results of the chi-square analysis and frequency distribution found in Table 11.

Table 11

Participants' Perceived Level of Confidence in Identifying Math Disabilities as a Result of Training

Statement	SD <i>n (%)</i>	D <i>n (%)</i>	NAD <i>n (%)</i>	A <i>n (%)</i>	SA <i>n (%)</i>	M	SD
<i>My confidence in my ability to identify math disabilities has improved as a result of the training</i>	3 (2.5)	2 (1.7)	8 (6.7)	38 (31.9)	68 (57.1)	4.39	.88

Note: For the Perceived Level of Confidence in Identifying math Disabilities as a Result of Training, Strongly Disagree (SD); Disagree (D); Neither Agree nor Disagree (NAD); Strongly Agree (SA).

Research Question 4

Do school psychologists believe that their diagnostic accuracy for identifying students with reading disabilities has increased after becoming ABSNP diplomates?

With regard to whether or not school psychologists believe that their diagnostic accuracy for identifying reading disabilities has increased after becoming ABSNP diplomates, the data is provided in Table 12. Out of 119 respondents, the majority ($M = 4.39$, $SD = .86$) of school psychologists believe that their diagnostic accuracy has increased in identifying reading disabilities as a result of their diplomate status. Although the majority of respondents (89.91%, n

= 107) agreed with the statement, (5%, $n = 6$) disagreed. Six (5%) of the respondents neither agreed nor disagreed with the statement.

The null hypothesis states there is no significant difference in school psychologists' diagnostic accuracy in reading disabilities after becoming ABSNP diplomates. The alternative hypothesis states there is a significant difference in school psychologists' diagnostic accuracy in reading disabilities after becoming ABSNP diplomates. The results of the chi-square analysis was statistically significant at the alpha level of .05, $\chi^2(4, N = 119) = 139.193 p < .000$. The alternate hypothesis was supported based on the results of the chi-square analysis and frequency distribution found in Table 12.

Table 12

Participants' Perceived Level of Improvement in Diagnostic Accuracy in Identifying Reading Disabilities as a Result of Training

Statement	SD <i>n (%)</i>	D <i>n (%)</i>	NAD <i>n (%)</i>	A <i>n (%)</i>	SA <i>n (%)</i>	M	SD
<i>My diagnostic accuracy in identifying reading disabilities has improved as a result of my training</i>	2 (1.7)	4 (3.4)	6 (5)	40 (33.6)	67 (56.3)	4.39	.86

Note: For perceived level of improvement in diagnostic accuracy in identifying reading disabilities as a result of training, Strongly Disagree (SD); Disagree (D); Neither Agree nor Disagree (NAD); Strongly Agree (SA).

Research Question 5

Do school psychologists believe that their diagnostic accuracy for identifying students with writing disabilities has increased after becoming ABSNP diplomates?

With regard to whether or not school psychologists believe that their diagnostic accuracy for identifying writing disabilities has increased after becoming ABSNP diplomates, the data is provided in Table 13. Out of 119 respondents, the majority ($M = 4.25$, $SD = .91$) of school psychologists believe that their diagnostic accuracy has increased in identifying writing disabilities as a result of their diplomate status. Although the majority of respondents (83.19%, $n = 99$) agreed with the statement, (5%, $n = 6$) disagreed. Fourteen respondents (11.7%) neither agreed nor disagreed with the statement.

The null hypothesis states there is no significant difference in the amount of interventions that school psychologists recommend for students with writing disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates. The alternative hypothesis states there is a significant difference in school psychologists' diagnostic accuracy in writing disabilities after becoming ABSNP diplomates. The results of the chi-square analysis was statistically significant at the alpha level of .05, $\chi^2(4, N = 119) = 102.050$ $p < .000$. The alternate hypothesis was supported based on the results of the chi-square analysis and frequency distribution found in Table 13.

Table 13

Participants' Perceived Level of Improvement in Diagnostic Accuracy in Identifying Writing Disabilities as a Result of Training

Statement	SD <i>n (%)</i>	D <i>n (%)</i>	NAD <i>n (%)</i>	A <i>n (%)</i>	SA <i>n (%)</i>	M	SD
<i>My diagnostic accuracy in identifying writing disabilities has improved as a result of my training</i>	2 (1.7)	4 (3.4)	14 (11.8)	41 (34.5)	58 (48.7)	4.25	.91

Note: For perceived level of improvement in diagnostic accuracy in identifying writing disabilities as a result of training, Strongly Disagree (SD); Disagree (D); Neither Agree nor Disagree (NAD); Strongly Agree (SA).

Research Question 6

Do school psychologists believe that their diagnostic accuracy for identifying students with math disabilities has increased after becoming ABSNP diplomates?

With regard to whether or not school psychologists believe that their diagnostic accuracy for identifying math disabilities has increased after becoming ABSNP diplomates, the data is provided in Table 14. Out of 119 respondents, the majority ($M = 4.24$, $SD = .92$) of school psychologists believe that their diagnostic accuracy has increased in identifying math disabilities as a result of their diplomate status. Although the majority of respondents (82.35%, $n = 98$) agreed with the statement, (5%, $n = 6$) disagreed. Fifteen (12.6%) of the respondents neither agreed nor disagreed with the statement.

The null hypothesis states there is no significant difference in the amount of interventions that school psychologists recommend for students with math disabilities to teachers,

paraprofessionals, and parents after becoming ABSNP diplomates. The alternative hypothesis states there is a significant difference in school psychologists' diagnostic accuracy in math disabilities after becoming ABSNP diplomates. The results of the chi-square analysis was statistically significant at the alpha level of .05, $\chi^2(4, N = 119) = 99.866 p < .000$. The alternate hypothesis was supported based on the results of the chi-square analysis and frequency distribution found in Table 14.

Table 14

Participants' Perceived Level of Improvement in Diagnostic Accuracy in Identifying Math Disabilities as a Result of Training

Statement	SD n (%)	D n (%)	NAD n (%)	A n (%)	SA n (%)	M	SD
<i>My diagnostic accuracy in identifying math disabilities has improved as a result of my training</i>	2 (1.7)	4 (3.4)	15 (12.6)	40 (33.6)	58 (48.7)	4.24	.92

Note: For perceived level of improvement in diagnostic accuracy in identifying math disabilities as a result of training, Strongly Disagree (SD); Disagree (D); Neither Agree nor Disagree (NAD); Strongly Agree (SA).

Research Question 7

Do school psychologists believe that the interventions they recommend for reading disabilities are more specific to the needs of students after becoming ABSNP diplomates?

With regard to whether or not school psychologists believe that the interventions they recommend for reading disabilities are more specific to the needs of students after becoming ABSNP diplomates, the data is provided in table 15. Out of 119 respondents, the majority ($M =$

4.34, $SD = .75$) of school psychologists believe that the interventions they recommend for reading disabilities are more specific after becoming ABSNP diplomates. Although the majority of respondents (90%, $n = 108$) agreed with the statement, (2.5%, $n = 3$). Eight respondents (6.7%) neither agreed nor disagreed with that statement.

The null hypothesis states there is no significant difference in the amount of interventions that school psychologists recommend for students with reading disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates. The alternative hypothesis states there is a significant difference in the amount of interventions that school psychologists recommend for students with reading disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates. The results of the chi-square analysis was statistically significant at the alpha level of .05, $X^2(4, N = 119) = 129.277 p < .000$. The alternate hypothesis was supported based on the results of the chi-square analysis and frequency distribution found in Table 15.

Table 15
Participants' Perceived Improved Ability to Recommend Specific Interventions/Strategies for Reading Disabilities

Statement	SD <i>n (%)</i>	D <i>n (%)</i>	NAD <i>n (%)</i>	A <i>n (%)</i>	SA <i>n (%)</i>	M	SD
<i>My ability to recommend specific interventions/strategies for reading disabilities has improved after my training</i>	1 (0.8)	2 (1.7)	8 (6.7)	52 (43.7)	56 (47.1)	4.34	.75

Note: For perceived improved ability to recommend specific interventions/strategies for reading disabilities, Strongly Disagree (SD); Disagree (D); Neither Agree nor Disagree (NAD); Strongly Agree (SA).

Research Question 8

Do school psychologists believe that the interventions they recommend for writing disabilities are more specific to the needs of students after becoming ABSNP diplomates?

With regard to whether or not school psychologists believe that the interventions they recommend for writing disabilities are more specific to the needs of students after becoming ABSNP diplomates, the data is provided in Table 16. Out of 119 respondents, the majority ($M = 4.16$, $SD = .86$) of school psychologists believe that the interventions they recommend for writing disabilities are more specific after becoming ABSNP diplomates. Although the majority of respondents (80.67%, $n = 96$) agreed with the statement, (4.2%, $n = 5$) disagreed. Eighteen (15.12%) of the respondents neither agreed nor disagreed with the statement.

The null hypothesis states there is no significant difference in the amount of interventions that school psychologists recommend for students with writing disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates. The alternative hypothesis states there is a significant difference in the amount of interventions that school psychologists recommend for students with reading, writing, and math disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates. The results of the chi-square analysis was statistically significant at the alpha level of .05, $\chi^2(4, N = 119) = 88.941$ $p < .000$. The alternate hypothesis was supported based on the results of the chi-square analysis and frequency distribution found in Table 16.

Table 16
Participants' Perceived Improved Ability to Recommend Specific Interventions/Strategies for Writing Disabilities

Statement	SD <i>n (%)</i>	D <i>n (%)</i>	NAD <i>n (%)</i>	A <i>n (%)</i>	SA <i>n (%)</i>	M	SD
<i>My ability to recommend specific interventions/strategies for writing disabilities has improved after my training</i>	1 (0.8)	4 (3.4)	18 (15.1)	48 (40.3)	48 (40.3)	4.16	.86

Note: For perceived improved ability to recommend specific interventions/strategies for writing disabilities, Strongly Disagree (SD); Disagree (D); Neither Agree nor Disagree (NAD); Strongly Agree (SA).

Research Question 9

Do school psychologists believe that the interventions they recommend for math disabilities are more specific to the needs of students after becoming ABSNP diplomates?

With regard to whether or not school psychologists believe that the interventions they recommend for math disabilities are more specific to the needs of students after becoming ABSNP diplomates, the data is provided in Table 17. Out of 119 respondents, the majority ($M = 4.12$, $SD = .86$) of school psychologists believe that the interventions they recommend for math disabilities are more specific after becoming ABSNP diplomates. Although the majority of respondents (78.99%, $n = 94$) agreed with the statement, (4.2%, $n = 5$) disagreed. Twenty (16.8%) of the respondents neither agreed nor disagreed with the statement.

The null hypothesis states there is no significant difference in the amount of interventions that school psychologists recommend for students with math disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates. The alternative hypothesis

states there is a significant difference in the amount of interventions that school psychologists recommend for students with math disabilities to teachers, paraprofessionals, and parents after becoming ABSNP diplomates. The results of the chi-square analysis was statistically significant at the alpha level of .05, $X^2(4, N = 119) = 84.487 p < .000$. The alternate hypothesis was supported based on the results of the chi-square analysis and frequency distribution found in Table 17.

Table 17
Participants' Perceived Improved Ability to Recommend Specific Interventions/Strategies for Math Disabilities

Statement	SD <i>n (%)</i>	D <i>n (%)</i>	NAD <i>n (%)</i>	A <i>n (%)</i>	SA <i>n (%)</i>	M	SD
<i>My ability to recommend specific interventions/strategies for math disabilities has improved after my training</i>	1 (0.8)	4 (3.4)	20 (16.8)	49 (41.2)	45 (37.8)	4.12	.86

Note: For perceived improved ability to recommend specific interventions/strategies for math disabilities, Strongly Disagree (SD); Disagree (D); Neither Agree nor Disagree (NAD); Strongly Agree (SA).

Research Question 10

Do school psychologists believe that they have a broader range of interventions they can recommend to teachers for reading disabilities after becoming ABSNP diplomates?

With regard to whether or not school psychologists believe that they have a broader range of interventions they can recommend to teachers for reading disabilities after becoming ABSNP diplomates, the data is provided in Table 18. Out of 119 respondents, the majority ($M = 4.22$, $SD = .82$) of school psychologists believe that they have a broader range of interventions they can

recommend for reading disabilities after becoming ABSNP diplomates. Although the majority of respondents (85.71%, $n = 102$) agreed with the statement, (4.2%, $n = 5$) disagreed. Twelve (10.1%) of the respondents neither agreed nor disagreed with the statement.

The null hypothesis states there is no significant difference between the specificity of interventions school psychologists recommend for reading disabilities after becoming ABSNP diplomates. The alternative hypothesis states there is a significant difference between the specificity of interventions school psychologists recommend for reading disabilities after becoming ABSNP diplomates. The results of the chi-square analysis was statistically significant at the alpha level of .05, $X^2(4, N = 119) = 106.672 p < .000$. The alternate hypothesis was supported based on the results of the chi-square analysis and frequency distribution found in Table 18.

Table 18
Perceived Ability to Provide a Broader Range of Interventions to Teachers and Parents for Reading Disabilities

Statement	SD <i>n (%)</i>	D <i>n (%)</i>	NAD <i>n (%)</i>	A <i>n (%)</i>	SA <i>n (%)</i>	M	SD
<i>The training provided me with a broader range of reading interventions to recommend to teachers and parents</i>	1 (0.8)	4 (3.4)	12 (10.1)	53 (44.5)	49 (41.2)	4.22	.82

Note: For Perceived ability to provide a broader range of interventions to teachers and parents for reading disabilities, Strongly Disagree (SD); Disagree (D); Neither Agree nor Disagree (NAD); Strongly Agree (SA).

Research Question 11

Do school psychologists believe that they have a broader range of interventions they can recommend to teachers for writing disabilities after becoming ABSNP diplomates?

With regard to whether or not school psychologists believe that they have a broader range of interventions they can recommend to teachers for writing disabilities after becoming ABSNP diplomates, the data is provided in Table 19. Out of 119 respondents, the majority ($M = 4.04$ ($SD = .89$)) of school psychologists believe that they have a broader range of interventions they can recommend for writing disabilities after becoming ABSNP diplomates. Although the majority of respondents (75.63%, $n = 90$) agreed with the statement, (5%, $n = 6$) disagreed. Twenty three (19.32%) of respondents neither agreed nor disagreed with the statement.

The null hypothesis states there is no significant difference between the specificity of interventions school psychologists recommend for writing disabilities after becoming ABSNP diplomates. The alternative hypothesis states there is a significant difference between the specificity of interventions school psychologists recommend for writing disabilities after becoming ABSNP diplomates. The results of the chi-square analysis was statistically significant at the alpha level of .05, $\chi^2(4, N = 119) = 75.244 p < .000$. The alternate hypothesis was supported based on the results of the chi-square analysis and frequency distribution found in Table 19.

Table 19

Perceived Ability to Provide a Broader Range of Interventions to Teachers and Parents for Writing Disabilities

Statement	SD <i>n (%)</i>	D <i>n (%)</i>	NAD <i>n (%)</i>	A <i>n (%)</i>	SA <i>n (%)</i>	M	SD
<i>The training provided me with a broader range of writing interventions to recommend to teachers and parents</i>	1 (0.8)	5 (4.2)	23 (19.32)	48 (40.3)	42 (35.3)	4.05	.89

Note: For Perceived ability to provide a broader range of interventions to teachers and parents for writing disabilities, Strongly Disagree (SD); Disagree (D); Neither Agree nor Disagree (NAD); Strongly Agree (SA).

Research Question 12

Do school psychologists have a broader range of interventions they can recommend to teachers for math disabilities after becoming ABSNP diplomates?

With regard to whether or not school psychologists believe that they have a broader range of interventions they can recommend to teachers for math disabilities after becoming ABSNP diplomates, the data is provided in Table 20. Out of 118 respondents, the majority ($M = 4.01$, $SD = .88$) of school psychologists believe that they have a broader range of interventions they can recommend for math disabilities after becoming ABSNP diplomates. Although the majority of respondents (76.27%, $n = 90$) agreed with the statement, (5.9%, $n = 7$) disagreed. Twenty one (17.8%) of the respondents neither agreed nor disagreed with the statement.

The null hypothesis states there is no significant difference between the specificity of interventions school psychologists recommend for math disabilities after becoming ABSNP diplomates. The alternative hypothesis states there is a significant difference between the

specificity of interventions school psychologists recommend for math disabilities after becoming ABSNP diplomates. The results of the chi-square analysis was statistically significant at the alpha level of .05, $X^2(4, N = 118) = 79.288 p < .000$. The alternate hypothesis was supported based on the results of the chi-square analysis and frequency distribution found in Table 20.

Table 20

Perceived Ability to Provide a Broader Range of Interventions to Teachers and Parents for Math Disabilities

Statement	SD n (%)	D n (%)	NAD n (%)	A n (%)	SA n (%)	M	SD
<i>The training provided me with a broader range of math interventions to recommend to teachers and parents</i>	1 (0.8)	6 (5.1)	21 (17.8)	53 (90)	37 (31.4)	4.01	.88

Note: For Perceived ability to provide a broader range of interventions to teachers and parents for math disabilities, Strongly Disagree (SD); Disagree (D); Neither Agree nor Disagree (NAD); Strongly Agree (SA).

Research Question 13

Is there a difference between doctoral, master's and specialist level school psychologists' beliefs about their confidence in identifying and providing interventions for students with SLDs?

The null hypothesis states there is no significant difference in perceptions in identifying and providing interventions for students with SLDs between doctoral, master's and specialist level school psychologists. The alternative hypothesis states there is a significant difference in perceptions in identifying and providing interventions for students with SLDs between doctoral, master's and specialist level school psychologists.

A one-way analysis of variance (ANOVA) was used to examine the differences between the dependent variable for diplomate perceptions in the assessment and intervention of SLDs versus diplomate education level. A Levene's test was used to assess the equality of variances between educational groups and was found to be non-significant across all of the research questions.

The results of the ANOVA analysis for diplomate confidence in identifying SLDs were not statistically significant for reading, $f(3, 115) = 1.345, p = .264$; writing, $f(3, 115) = 1.237, p = .294$; and math $f(3, 115) = 1.832, p = .165$, indicating that confidence in identifying SLDs is not significantly related to diplomate education level. Table 21 illustrates the results of the ANOVA.

Table 21

ANOVA for Participant's Confidence in Identifying SLDs by Level of Education

Statement	Model	Sum of squares	df	Mean square	f	Sig.
My confidence in my ability to identify READING DISABILITIES has improved as a result of the training	Between groups	1.817	2	.908	1.345	.264
	Within groups	77.649	115	.675		
	Total	79.466	117			
My confidence in my ability to identify WRITING DISABILITIES has improved as a result of the training	Between groups	1.966	2	.983	1.237	.294
	Within groups	91.364	115	.794		
	Total	93.331	117			
My confidence in my ability to identify MATH DISABILITIES has improved as a result of the training	Between groups	2.843	2	1.422	1.832	.165
	Within groups	89.225	115	.776		
	Total	92.068	117			

The results of the ANOVA analysis for diagnostic accuracy in identifying SLDs were again not statistically significant for reading, $f(3, 115) = 1.424, p = .245$; writing, $f(3, 115) = 1.336, p = .267$; and math $f(3, 115) = 1.932, p = .102$, indicating that diagnostic accuracy in identifying SLDs is not significantly related to diplomate education level. Table 22 illustrates the results of the ANOVA.

Table 22

ANOVA for Participant's Diagnostic Accuracy in Identifying SLDs by Level of Education

Statement	Model	Sum of squares	df	Mean square	f	Sig.
My diagnostic accuracy in identifying READING DISABILITIES has improved as a result of my training	Between groups	2.128	2	1.064	1.424	.245
	Within groups	85.940	115	.747		
	Total	88.068	117			
My diagnostic accuracy in identifying WRITING DISABILITIES has improved as a result of my training	Between groups	2.222	2	1.111	1.336	.267
	Within groups	95.651	115	.832		
	Total	97.873	117			
My diagnostic accuracy in identifying MATH DISABILITIES has improved as a result of my training	Between groups	3.864	2	1.932	2.327	.102
	Within groups	95.492	115	.830		
	Total	99.356	117			

The results of the ANOVA analysis regarding the ability of diplomates' to recommend specific interventions/strategies for students with SLDs by education level were again not statistically significant for reading, $f(3, 115) = 1.560, p = .215$; writing, $f(3, 115) = 2.121, p = .125$; and math $f(3, 115) = 2.947, p = .056$, indicating that diplomates' ability to recommend specific interventions/strategies for students with SLDs is not significantly related to diplomate

education level. Although the ANOVA for math did not yield significance ($p = .056$) the significance level was close to the set $p = .05$ level. Because the ANOVA in math was close to the $p = .05$ significance level, a LSD post hoc test was conducted. Significant differences were found in writing ($p = .043$) and math ($p = .017$) between groups of Master's and Doctoral level diplomates. Table 23 illustrates the results of the ANOVA.

Table 23

ANOVA for Participant's Ability in Recommending Specific Interventions/Strategies for SLDs by Level of Education

Statement	Model	Sum of squares	df	Mean square	f	Sig.
My ability to recommend specific interventions/strategies for READING disabilities has improved after my training	Between groups	1.763	2	.881	1.560	.215
	Within groups	64.991	115	.565		
	Total	66.754	117			
My ability to recommend specific interventions/strategies for WRITING disabilities has improved after my training	Between groups	3.129	2	1.564	2.121	.125
	Within groups	84.812	115	.737		
	Total	87.941	117			
My ability to recommend specific interventions/strategies for MATH disabilities has improved after my training	Between groups	4.247	2	2.123	2.947	.056
	Within groups	82.847	115	.720		
	Total	87.093	117			

The results of the ANOVA analysis regarding the range of interventions that the training provided to diplomates for students with SLDs by education level were not statistically significant for reading, $f(3, 115) = .456, p = .635$; writing, $f(3, 115) = .757, p = .471$; and math $f(3, 114) = 1.514, p = .224$, indicating that the range of interventions that diplomates recommend

for students with SLDs is not significantly related to diplomate education level. Table 24 illustrates the results of the ANOVA.

Table 24

ANOVA for Participant's Range of Intervention for Students with SLDs and Level of Education

Statement	Model	Sum of squares	^a df	Mean square	f	Sig.
The training provided me with a broader range of READING interventions to recommend to teachers and parents	Between groups	.621	2	.310	.456	.635
	Within groups	78.201	115	.680		
	Total	78.822	117			
The training provided me with a broader range of WRITING interventions to recommend to teachers and parents	Between groups	1.203	2	.602	.757	.471
	Within groups	91.381	115	.795		
	Total	92.585	117			
The training provided me with a broader range of MATH interventions to recommend to teachers and parents	Between groups	2.327	2	1.164	1.514	.224
	Within groups	87.638	114	.769		
	Total	89.966	116			

^a Due to one missing response the within groups for math do not total 115.

Summary

In this chapter data, collection procedures, participant demographics, and data analysis of the research questions were reviewed. Hypothesis testing revealed significant differences for the first 12 research questions relating to assessment and intervention thus supporting the alternative hypotheses. No significance differences were found for research question 13 using analysis of variance between diplomate education level and the assessment and intervention domains. In Chapter 5, study findings, limitations, future research, recommendations, and implications are discussed.

Chapter 5: Discussion, Conclusions, and Recommendations

Discussion

This quantitative study was conducted to help understand the relationship between the ABSNP certification and school psychologists' perceived professional confidence in identifying and intervening for students with SLDs. This study found significant gains in diplomate confidence across both the assessment and intervention domains. However, no significant difference was found across education levels. The intention of this study was to help determine if the ABSNP is perceived as an effective preparation tool for meeting the demands of applying the current state of neuropsychological knowledge of SLDs to the practice of school psychology. The data from this study is intended to help guide school psychologists and developers of school psychology graduate programs in the evaluation of the ABSNP as a means of increasing confidence in school psychologists in identifying and providing interventions for students with SLDs using neuropsychological tools. Additionally, results are also intended to provide feedback to the ABSNP to help validate strengths and identify weaknesses of their certification program.

Through survey methodology, descriptive research data was collected from ABSNP diplomates to obtain demographic data and study these perceptions. The participants in this study were drawn from a population of ABSNP diplomates who live and practice school psychology in the United States. The survey developed for data collection was partly influenced by the research literature on professional competence in neuropsychology and by the NASP Standards for Training and Credentialing of School Psychologists (NASP, 2010a; NASP, 2010b; Reycasserly, Roper, & Bauer, 2012).

The total data collection period occurred over a three week period. The population of potential participants for this study was 481. Out of 481 diplomates, 12 were excluded due to the pilot study and 16 did not have listed e-mail addresses in the diplomate directory. A total of eleven diplomates opted-out of Survey Monkey. An additional 11 e-mail addresses were “bounced back” as undeliverable addresses. Twelve diplomates were disqualified because they did not meet the following research criteria: (a) not certified and/or licensed school psychologists; (b) did not graduate from a graduate program in school psychology; or (c) did not attend a post-graduate training program as a means to becoming ABSNP diplomates. One survey was excluded from data analysis because it was due incomplete. Thus, the total potential sample was reduced to 418 diplomates. A total of 117 completed surveys were returned resulting in a response rate of 27.99%.

Demographic data were also obtained from the survey. The gender of respondents was primarily female (78.0%). The majority of the respondents (39.3%) were between the ages of 41 and 55. Respondents’ practice in school psychology fell primarily in the Northeast (32.53%) and West (30.15%), with 23.8% of respondents being from the South and 13.49% from the Midwest. More than half of respondents hold specialist/sixth year (26.3%) and master’s (29.7%) degrees, and doctorates (44.1%) . Nearly half of the respondents reported that they serve elementary aged students and less than a third serve secondary students in Grades 6 through 12. However, 57.3% of diplomates serve students through Grades K-12. The majority of diplomates have held their ABSNP certification for 4–6 years (47.1%) and (33.6%) of diplomates have held this status just 3 years and under.

Along with demographic information, diplomates were asked questions regarding funding for ABSNP certification; they were also asked to rate their overall level of satisfaction about their training. The majority reported that funding for their school neuropsychology training (80.2%) and board certification (95.8%) was an out-of-pocket expense. Three diplomates reported that funding for the ABSNP training was obtained through a university and two respondents reported receiving funding from a grant. Respondents' overwhelmingly reported being satisfied with their post-secondary training in school neuropsychology with (33.6%) being satisfied and (62.2%) reported feeling very satisfied.

Diplomates were also asked to report if they have experienced any barriers with implementing neuropsychological assessments in practice. Out of the 100 diplomates who answered this question, 34% reported no barriers. However, the majority of diplomates cited the most common barriers as follows: time constraints, high caseloads, federal and state evaluation timelines, budgetary constraints, neuropsychological assessment availability, and a lack of administration support in utilizing neuropsychological assessments. One diplomate commented that:

At times the assessment instrument (neuropsychological) I want to use has already been checked out in my district and if the deadline is approaching, I may not be able to use all of the assessment instruments desired.

Another diplomate commented:

“Yes. I am able to have a full complementary battery of assessment tools to use. However, a bigger barrier is just the number of assessments I and my colleagues are doing each school year preclude being able to do more involved evaluations.”

Not all diplomates reported having barriers. One diplomate commented:

“I am able to purchase any neuropsych test I deem necessary. I have the full support of my administrators to conduct comprehensive assessments. My neuropsych training program gave me the knowledge to conduct a neuropsych assessment accurately. I have the time, skills, and tools to conduct neuropsych assessments. I like it too!”

Unfortunately, the majority of diplomates experience barriers in delivering neuropsychological services to students. This is a concern because these assessments can provide school psychologists with a wider breadth of student functioning compared with traditional cognitive assessments (Decker, 2008; Feifer, 2008; Fiorello et al., 2006; Hale et al., 2010; Schmitt & Wodrich, 2008; Semrud-Clikeman, 2005; Witsken, Stoeckel, & D’Amato, 2008).

Interpretation of the Findings

Research Question 1

Do school psychologists believe they are more confident in identifying reading disabilities after becoming ABSNP diplomates? Overall, the data reflects that the respondents believe they are more confident in identifying reading disabilities as a result of becoming ABSNP diplomates. A large majority either strongly agreed (64.7%) or agreed (28.6%) with this statement. For those who did not agree, 3.4% neither agreed nor disagreed and 3.3% disagreed with the statement. This question obtained the highest overall $M = 4.52$ from a Likert-type scale from one to five compared with identifying both writing and math disabilities. Results from the chi-square analysis support the alternate hypothesis that there is a significant difference in school psychologists’ perception of confidence in their ability to identify reading disabilities after becoming ABSNP diplomates.

Research Question 2

Do school psychologists believe that they are more confident in identifying writing disabilities after becoming ABSNP diplomates? A majority of the respondents strongly agreed (55.5%) or agreed (32.8%) that they are more confident in identifying writing disabilities after becoming ABSNP diplomates. For those respondents who did not agree, a higher percentage compared with the first research question, neither agreed or disagreed (7.6%) and 4.2% disagreed. The $M = 4.37$ was lower compared with reading ($M = 4.52$). Results from the chi-square analysis support the alternate hypothesis that there is a significant difference in school psychologists' perception of confidence in their ability to identify writing disabilities after becoming ABSNP diplomates.

Research Question 3

Do school psychologists believe that they are more confident in identifying math disabilities after becoming ABSNP diplomates? Similarly, a majority of the respondents strongly agreed (57.1%) or agreed (31.9%) that they are more confident in identifying math disabilities after becoming ABSNP diplomates. In similar fashion to question number two, for those respondents who did not agree, a higher percentage neither agreed or disagreed (6.7%) and 4.2% disagreed compared with the first question. The $M = 4.39$ for this question similar to writing disabilities ($M = 4.37$) disabilities and a $M = 4.52$ for reading disabilities. Results from the chi-square analysis again support the alternate hypothesis that there is a significant difference in school psychologists' perception of confidence in their ability to identify math disabilities after becoming ABSNP diplomates.

Research Question 4

Do school psychologists believe that their diagnostic accuracy for identifying students with reading disabilities has increased after becoming ABSNP diplomates? Consistent with the first research question, the majority of diplomates also believe that their assessment abilities regarding diagnostic accuracy for reading disabilities has improved as well. A majority of the respondents strongly agreed (56.3%) or agreed (33.6%) that their diagnostic accuracy has increased for identifying students with reading disabilities after becoming ABSNP diplomates. For those who did not agree, 5% neither agreed nor disagreed and 5.1% disagreed with the statement. Again, the $M = 4.39$ for reading disabilities was higher compared with writing ($M = 4.25$) and math ($M = 4.24$) disabilities as was reported for research questions one through three. Results from the chi-square analysis support the alternate hypothesis that there is a significant difference in school psychologists' perception that their diagnostic accuracy has increased for reading disabilities after becoming ABSNP diplomates.

Research Question 5

Do school psychologists believe that their diagnostic accuracy for identifying students with writing disabilities has increased after becoming ABSNP diplomates? For writing disabilities, a majority of the respondents strongly agreed (48.7%) or agreed (34.5%) that their diagnostic accuracy has increased after becoming ABSNP diplomates. For those who did not agree, 11.8% neither agreed nor disagreed and 5% disagreed with the statement. Interestingly, those who neither agreed or disagreed with this statement is approximately double compared with diplomate confidence in identifying writing disabilities (7.6%). Results from the chi-square analysis support the alternate hypothesis that there is a significant difference in school

psychologists' perception that their diagnostic accuracy has increased for writing disabilities after becoming ABSNP diplomates.

Research Question 6

Do school psychologists believe that their diagnostic accuracy for identifying students with math disabilities has increased after becoming ABSNP diplomates? For math disabilities, a majority of the respondents again strongly agreed (48.7%) or agreed (33.6%) that their diagnostic accuracy has increased after becoming ABSNP diplomates. For those who did not agree, 12.6% neither agreed nor disagreed and 5% disagreed with the statement. Similarly, compared with question five, the percentage who neither agreed or disagreed with this statement (12.6%) was more than double compared with diplomate confidence in identifying reading disabilities (5%). Results from the chi-square analysis support the alternate hypothesis that there is a significant difference in school psychologists' perception that their diagnostic accuracy has increased for math disabilities after becoming ABSNP diplomates.

Research Question 7

Do school psychologists believe that the interventions they recommend for reading disabilities are more specific to the needs of students after becoming ABSNP diplomates? Similar to the majority of the assessments related research questions, diplomates overwhelmingly agreed, strongly agreed (47.1%) or agreed (43.7%) that they believe that the interventions they recommend for reading disabilities are more specific to the needs of students after the ABSNP certification although not as strongly as was reported for the assessment related research questions. For those who did not agree, 6.7% neither agreed nor disagreed and 2.5% disagreed with the statement. The $M = 4.34$ for reading disabilities was higher compared with writing ($M =$

4.16) and math ($M = 4.12$) disabilities as was also the case for both sets of assessment research questions for identification and diagnostic accuracy. Results from the chi-square analysis support the alternate hypothesis that there is a significant improvement in respondents' ability to recommend specific intervention/strategies for reading disabilities after their ABSNP training.

Research Question 8

Do school psychologists believe that the interventions they recommend for writing disabilities are more specific to the needs of students after becoming ABSNP diplomates? For writing disabilities, the respondents again overwhelmingly agreed, with an equal number reporting that they strongly agreed (40.3%) or agreed (40.3%) that they believe that the interventions they recommend for writing disabilities are more specific to the needs of students after the ABSNP certification. For those who did not agree, 15.1% neither agreed nor disagreed and 4.2% disagreed with the statement. Interestingly, those who neither agreed or disagreed with this statement was more than double than the reading question (6.7%). The $M = 4.16$ for writing disabilities was lower compared to reading ($M = 4.34$). Results from the chi-square analysis support the alternate hypothesis that there is a significant improvement in respondents' ability to recommend specific intervention/strategies for writing disabilities after their ABSNP training.

Research Question 9

Do school psychologists believe that the interventions they recommend for math disabilities are more specific to the needs of students after becoming ABSNP diplomates? Finally, for math disabilities respondents also overwhelmingly agreed, with 37.8% strongly agreeing and 41.2% agreeing that the interventions they recommend for math disabilities are more specific to the needs of students after the ABSNP certification. For those who did not

agree, 16.8% neither agreed nor disagreed and 4.2% disagreed with the statement. Similarly, those who neither agreed nor disagreed with this statement was more than double the number of respondents than the reading question (6.7%). The $M = 4.12$ for math disabilities was lower compared to reading ($M = 4.34$). Results from the chi-square analysis support the alternate hypothesis that there is a significant improvement in respondents' ability to recommend specific intervention/strategies for math disabilities after their ABSNP training.

Research Question 10

Do school psychologists believe that they have a broader range of interventions they can recommend to teachers for reading disabilities after becoming ABSNP diplomates? The majority of diplomates reported believing that they have a broader range of interventions they can recommend to teachers for reading disabilities after becoming ABSNP diplomates. However, the majority only agreed (44.5%) with the statement rather than strongly agreed (41.2%). For those who did not agree, 10.1% neither agreed nor disagreed and 4.2% disagreed with the statement. The $M = 4.22$ for reading disabilities was higher compared with writing ($M = 4.05$) and math ($M = 4.01$) disabilities is consistent with the results of the previous three sets of research questions in assessment and intervention. Results from the chi-square analysis support the alternate hypothesis that there is a significant difference between the specificity of interventions diplomates can recommend to teachers for reading disabilities after becoming ABSNP diplomates.

Research Question 11

Do school psychologists believe that they have a broader range of interventions they can recommend to teachers for writing disabilities after becoming ABSNP diplomates? The majority

of diplomates also believe that they have a broader range of interventions they can recommend to teachers for writing disabilities after becoming ABSNP diplomates. Again, the majority agreed (40.3%) with the statement rather than strongly agreed (35.3%). For those who did not agree, 19.3% neither agreed nor disagreed and 5% disagreed with the statement. The $M = 4.05$ for writing disabilities was lower compared with reading ($M = 4.22$) and higher compared with math ($M = 4.01$). Results from the chi-square analysis support the alternate hypothesis that there is a significant difference between the specificity of interventions diplomates can recommend to teachers for writing disabilities after becoming ABSNP diplomates.

Research Question 12

Do school psychologists believe that they have a broader range of interventions they can recommend to teachers for math disabilities after becoming ABSNP diplomates? The majority of diplomates also believe that they have a broader range of interventions they can recommend to teachers for math disabilities after becoming ABSNP diplomates. Again, the majority agreed (44.9%) with the statement rather than strongly agreed (31.4%). For those who did not agree, 17.8% neither agreed nor disagreed and 6% disagreed with the statement. The $M = 4.01$ for math disabilities is lower compared with both reading ($M = 4.22$) and writing ($M = 4.05$). Results from the chi-square analysis support the alternate hypothesis that there is a significant difference between the specificity of interventions diplomates can recommend to teachers for math disabilities after becoming ABSNP diplomates.

Research Question 13

Is there a difference between doctoral and masters/specialist level school psychologists' beliefs about their confidence in identifying and providing interventions for students with SLDs?

The results of the data analysis examining the relationship between diplomate education level and the responses of all 12 research questions examining the identification of SLDs and providing interventions for SLDs was not statistically significant. The alternate hypothesis stating that there is a significant difference between doctoral and masters/specialist level school psychologists' beliefs about their confidence in identifying and providing interventions for students with SLDs is not supported. Thus, it appears that prior educational experience does not appear to be a factor in boosting confidence within these assessment and intervention domains. However, caution should be taken in interpreting these results because these questions measured post-training perceptions of ability and confidence in assessment and intervention rather than objective levels of competencies by each educational group. Conversely, it is interesting to note that each group by educational level rated a similar level of gains suggesting that both doctoral and non-doctoral school psychologists may have similar exposure to neuropsychological coursework and training despite the differing demands of each program. This finding is surprising given that doctoral school psychology programs generally offer students with more access to faculty members with expertise in neuropsychology (Walker and colleagues, 1999), which may increase the likelihood that students would gain more knowledge and experience in neuropsychology.

Limitations of the Study

Although there were measures taken to help ensure the quality of this study, there were several limitations that arose. However, it is worth noting that an important strength of this study was that the entire ABSNP diplomate population was accessible via the directory which provided a large potential respondent pool. One limitation of this study is the research design. Even

though the survey method allowed data to be taken from a large sample of diplomates, there are inherent problems in self-appraisal and competencies in professional psychology (Daly et al., 2011; Kaslow et al., 2009). Although the reliability and validity of the survey instrument developed for this study was taken into account, none of the responses were returned from the pilot study so additional caution should be used when drawing conclusions from this study.

A second limitation of this study is one of generalizability. Although there was no significant difference found between the perceptions of diplomates from doctoral and non-doctoral programs in regard to assessment and intervention of SLDs, there are a number of different demographic factors (e.g., grade level, region, etc.) that may have impacted diplomate perceptions of confidence in identifying and recommending interventions for students with SLDs. Another limitation of this study was that the survey data was collected over the summer. There were diplomates who listed their work e-mail address and since most school psychologists are off during the summer months, this data collection window may have reduced overall response rates. Finally, only one reminder e-mail was sent to the respondents who did respond the first time which may have reduced the response rate for this study.

Implications for Social Change

The intended beneficiaries of this study are those 1.7 million estimated students (National Center for Educational Statistics, 2012) who are suspected of or are living with SLDs and require specific educational programming to best meet their learning needs. The initial results of this descriptive study may help school psychologists see the value of the ABSNP as being an effective route to increasing professional confidence needed to apply neuropsychological knowledge to the practice of school psychology. If school psychologists are better able to

identify and program for students with SLDs, the possibility of narrowing the achievement gap between non-disabled and disabled students becomes even more obtainable.

The results of this study can also be beneficial for both the ABSNP and school psychology graduate programs. The study data may be analyzed by the ABSNP to assess diplomate perceptions which may be used to help inform program development and help validate the current curriculum. Additionally, this study may provide school psychology graduate program faculty with some preliminary data on the perceptions of confidence of diplomates when assessing and recommending interventions for students with SLDs as a guide for students who wish to pursue additional training and competencies in the field of school neuropsychology.

Implications for Future Research

While this study contributes to the literature by examining the perceptions of ABSNP diplomates in identifying and intervening for students with SLDs, future research is necessary in several areas. First, future studies should seek to examine diplomate perceptions in confidence in serving students with other high incidence disabilities (e.g., attention deficit hyperactivity disorder, autism, etc.). In addition, the functional competencies of ABSNP diplomates in providing school neuropsychological services to students with SLDs and other high incidence disabilities should be examined as well. Although there is no current model for assessing competency standards in school neuropsychology, there are guidelines in describing what professional competencies are required in both school psychology and clinical neuropsychology (Daly et al., 2012; Rey-Casserly et al., 2012). These conceptual frameworks may help provide the ground work for developing future professional foundational and functional competency standards in school neuropsychology. And finally, future research should explore the perceptions

of teachers and administrators of ABSNP diplomates within their evaluative and consultative roles.

Conclusions and Implications for the Field of School Psychology

To provide students with SLDs with the highest level of service, school psychologists need to utilize tools and methodologies that offer the most promise. While the field of clinical neuropsychology has been around for decades, neuropsychology assessment has recently gained in popularity in the schools to help evaluate and program for students with disabilities (Decker, 2008). Given the time constraints of school psychology programs in offering comprehensive neuropsychological coursework and experiences, the ABSNP has become an alternative for those school psychologists who wish to pursue additional competencies in neuropsychology. With the lack of adequate preparation of neuropsychology in traditional programs and the burgeoning evidence of the importance of integrating neuropsychology as part of a comprehensive assessment, the importance of studying the effectiveness of the ABSNP training for school psychologists is crucial (Decker, 2008; Feifer, 2008; Fiorello et al., 2006; Hale et al., 2010; Schmitt & Wodrich, 2008; Semrud-Clikeman, 2005; Witsken, Stoeckel, & D'Amato, 2008).

Overall, the data from this study indicate that the additional neuropsychological training that the diplomates have received has had a positive effect on perceptions on the assessment and intervention domains in working with students with SLDs. In fact, over 95% of diplomates report being satisfied with their training. This finding is consistent with an earlier study by Marolt and Thompson (2008) that examined the experiences of a ABSNP cohort. Generally speaking, diplomates are more confident in identifying and providing interventions for students with reading disabilities versus writing and math disabilities. It is not known whether previous

training and experiences had influenced these perceptions or if the lack of confidence in both writing and math disabilities is reflective of the training that the diplomates received while earning their ABSNP certification. Additionally, there were no significant differences found between doctoral and non-doctoral level school psychologists' perceptions indicating that both groups benefited equally. Although this exploratory study is by no means exhaustive, these results are encouraging and indicative that diplomates value the training they have received and perceive their new skills as useful in working with students with SLDs.

Another significant finding of this study was the reported barriers to implementing neuropsychological services. Approximately two thirds of respondents cited time constraints, budgetary shortfalls, federal and state timelines, and a lack of availability of testing materials as the most common barriers. With a lack of an adequate number of school psychologists in different areas and continuing budgetary constraints, these barriers may continue to be problematic. Clearly, school psychologists who receive training in neuropsychology need to consider these barriers and find creative ways to still deliver these services while maintaining their other responsibilities. If the ABSNP improves professional confidence in assessing and providing recommendations for students with SLDs, then perhaps this confidence will translate into better educational outcomes for our students, schools and our society as a whole.

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Appendix A: Diplomate Panel Notice

June 9, 2013

Dear Diplomates,

My name is Joseph Ambrose and I am a doctoral candidate in the School of Psychology at Walden University.

I am conducting a study to examine the perceptions of ABSNP diplomates regarding whether completion of this certification program enhances their ability to identify and provide interventions for students with SLDs.

I am excited to conduct this study as well as hopeful that the findings will make a meaningful contribution to the fields of school psychology and education. In order to establish content validity of the survey instrument I am proposing, I will need to have a panel of diplomates analyze this questionnaire for clarity and quality. Your knowledge and input in this area would be very much appreciated. I am requesting your expertise in developing content validity of the "A Questionnaire for ABSNP diplomates." If you do agree to serve as a panel member, just complete the validation form by Month/Date/2013. You will find the survey and content validation form with directions attached to this e-mail.

If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 612-312-1210. Walden University's approval number for this study is 06-06-13-0260153 and it expires on June 4th, 2014.

If you have any questions or concerns regarding this research study please feel free to contact me at (860) 904-3679 or at Joseph.Ambrose@Waldenu.edu. Additionally, you can reach my dissertation chair Dr. Krista Cournoyer at Krista.Cournoyer@Waldenu.edu. Once again, thank you for your time and consideration.

Sincerely,

Joseph M. Ambrose, M.A.
Doctoral Candidate

Krista Cournoyer, Ph.D.
Faculty, Walden University

Appendix B: Content and Validation Form

ABSNP Diplomate Panel Survey**SURVEY ITEM CONTENT AND VALIDATION FORM**

Directions: On the following pages are listed the items intended to analyze the perceptions of ABSNP diplomates regarding whether completion of this certification program enhances their ability to identify and provide interventions for students with SLDs. Please rate each item on the following criteria: the clarity of the meaning of each item, and (2) the suitability of the item in relation to the questionnaire content. Place an “X” in the designated box for both categories (left and right columns).

Very Unclear	Somewhat Unclear	Clear	Very Clear	SURVEY QUESTIONS	Very Unsuitable	Somewhat Unsuitable	Suitable	Very Suitable
				Item 1. As part of a comprehensive evaluation, I am able to use standardized assessments in my school district.				
				Item 2. I do not intend to implement neuropsychological assessments for learning disability evaluations now or in the future.				
				Item 3. I have access to neuropsychological assessments in my assigned school(s) and/or district.				
				Item 4. I currently use neuropsychological assessments as part of a comprehensive evaluation for learning disabilities				
				Item 5. Use of Neuropsychological Assessment				

				in Practice				
				Item 6. Are there any barriers keeping you from implementing neuropsychological assessments in practice?				
				Item 7. Assessment of Learning Disabilities				
				Item 8. Intervention				
Very Unclear	Somewhat Unclear	Clear	Very Clear	DEMOGRAPHIC QUESTIONS	Very Unsuitable	Somewhat Unsuitable	Suitable	Very Suitable
				Item 9. Do you hold certification or licensure for school psychology in one or more states?				
				Item 10. How many years have you practiced as a school psychologist?				
				Item 11. What is the highest level of education you have completed?				
				Item 12. In what state(s) do you currently practice as a school psychologist in? Please check all that apply.				
				Item 13. Which grades/populations(s) do you currently as a school psychologist? Please check all that apply.				
				Item 14. Do you currently hold or have you held state psychology				

				licensure in the past?				
				Item 15. How many years have you held diplomate status from the ABSNP?				
				Item 16. My funding for the school neuropsychology post-graduate TRAINING program was obtained from which of the following				
				Item 17. My funding for the ABSNP BOARD CERTIFICATION was obtained from which of the following				
				Item 18. Overall, how satisfied are you with the post-graduate school neuropsychology training you received?				

Appendix C: First Contact- E-mail Invitation for Study

July 7, 2013

Subject: Please Participate in my School Neuropsychology Research

Hello,

My name is Joseph Ambrose and I am a doctoral candidate in psychology at Walden University. I am completing my dissertation research in the field of school neuropsychology by examining the perceptions of ABSNP diplomates regarding their ability to identify Specific Learning Disabilities (SLDs) and provide interventions for students with SLDs. I would invite you to participate in my online survey. The survey should take less than 15 minutes. You will find the Informed Consent Form on the first two pages of the survey where there is additional information regarding the current study. Please access the survey by following this link: <https://www.surveymonkey.com/s/ABSNPsurvey>

Thank you so much for your time!

All the Best,

Joseph Ambrose, MA
Doctoral candidate
Walden University

Appendix D: Final Contact- E-mail

July 15, 2013

Subject: School Neuropsychology Research Survey

Hello Diplomates,

If you have not already completed the survey examining the perceptions of ABSNP diplomates regarding their ability to identify Specific Learning Disabilities (SLDs) and provide interventions for students with SLDs, this is a friendly reminder for you to participate in my research study.

Here is a link to the survey:

<https://www.surveymonkey.com/s/ABSNPsurvey>

The survey will take less than 15 minutes. You will find the Informed Consent Form on the first two pages of the survey where there is additional information regarding the current study.

Sincerely,

Joseph Ambrose, MA
Doctoral candidate
Walden University

Appendix E: Participant Informed Consent Notice

You are invited to take part in a research study in understanding the perceptions of American Board of School Neuropsychology (ABSNP) diplomates regarding diagnosing and recommending interventions for students with Specific Learning Disabilities (SLDs) after becoming diplomates. The researcher is inviting all current ABSNP diplomates who are certified/licensed school psychologists, have completed a graduate program in school psychology, have completed a post-certification program in school neuropsychology and are living in the United States. All diplomate e-mail addresses were obtained from the diplomate directory on the ABSNP website.

This form is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part.

The Researcher:

My name is Joseph Ambrose and I am a doctoral candidate in the School of Psychology at Walden University.

Purpose of the Study:

The purpose of this study is to help understand the perceived professional confidence of diplomates in their ability to identify SLDs and provide interventions for students with SLDs. Your perceptions as a diplomate will be measured through a survey instrument. In addition, demographic information will be collected and analyzed for this study.

I hope that the results from this study will assist help school psychologists and other educational stakeholders in determining if the ABSNP is preparing school psychologists to respond to the increasing demands of working with students with SLDs.

Procedures:

If you agree to be in this study, you will be asked to complete all of the survey questions. This should take approximately 10 minutes. All participants are urged to respond to each survey by July 22, 2013.

Voluntary and Confidential Nature of the Study:

This study is voluntary. Your decision to take part in this study will not have any effect, positive or negative, with the ABSNP.

To fully understand the perceptions of confidence of ABSNP diplomates in relation to diagnosis and intervention for SLDs, it is necessary that each survey question be completed. Completion of this survey is voluntary and by completing this survey you are agreeing to participate in this study. All responses will be kept confidential.

To maintain confidentiality, all completed surveys will not require any identifiable information

such as your name, place of employment, or an e-mail address.

I will not use your personal information for any purposes beyond those described here. Also, I assure you that your name or any other identifying variables will be kept confidential. I will be the only person who will have access to the data, which will be kept on a secure electronic storage device in a locked cabinet. Data will be kept for a period of at least 5 years and destroyed as required by Walden University policy.

Due to the voluntary nature of this study, if you begin to complete the survey you can choose to stop participation at any time by closing out your browser window with the survey. However, after the survey is completed all surveys are anonymous and, therefore, cannot be identified to have your responses withdrawn from the study.

Risks of Being in the Study:

The only potential risk may be feelings of anxiety related to taking surveys. Remember, you can stop taking the survey at any time or choose not to take part in the survey at all.

Potential Benefits:

Results may also provide valuable feedback to the ABSNP to help validate strengths and identify weaknesses of the ABSNP board certification. Another potential benefit for participating in this study is to help inform other school psychologists whether pursuing ABSNP board certification is a worthwhile pursuit for helping to better serve students with SLDs.

Payment:

There is no type of compensation of any kind for participation in this study.

Contacts and Questions:

Please feel free to email me with any questions you have now, during, or after the study, should you decide to take part. You can contact me via e-mail at Joseph.Ambrose@waldenu.edu. If you want to talk privately about your rights as a participant, you can call the Walden University Institutional Review Board representative Dr. Leilani Endicott who can discuss this with you. Her phone number is 1(612) 312-1210. Walden University's approval number for this study is 06-06-13-0260153 and it expires on June 5, 2014.

Please print or electronically save this consent form for your records.

Appendix F: Survey Instrument

You are invited to take part in a research study in understanding the perceptions of American Board of School Neuropsychology (ABSNP) diplomates regarding diagnosing and recommending interventions for students with Specific Learning Disabilities (SLDs) after becoming diplomates. The researcher is inviting all current ABSNP diplomates who are certified/licensed school psychologists, have completed a graduate program in school psychology, have completed a post certification program in school neuropsychology and are living in the United States. All diplomate e-mail addresses were obtained from the diplomate directory on the ABSNP website. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

The Researcher:

My name is Joseph Ambrose and I am a doctoral candidate in the School of Psychology at Walden University.

Purpose of the Study:

The purpose of this study is to help understand the perceived professional confidence of diplomates in their ability to identify SLDs and provide interventions for students with SLDs. Your perceptions as a diplomate will be measured through a survey instrument. In addition, demographic information will be collected and analyzed for this study. I hope that the results from this study will assist help school psychologists and other educational stakeholders in determining if the ABSNP is preparing school psychologists to respond to the increasing demands of working with students with SLDs.

Procedures:

If you agree to be in this study, you will be asked to complete all of the survey questions. This should take approximately 10 minutes. All participants are urged to respond to each survey by July 22, 2013.

Voluntary and Confidential Nature of the Study:

This study is voluntary. Your decision to take part in this study will not have any effect, positive or negative, with the ABSNP.

To fully understand the perceptions of confidence of ABSNP diplomates in relation to diagnosis and intervention for SLDs, it is necessary that each survey question be completed. Completion of this survey is voluntary and by completing this survey you are agreeing to participate in this study. All responses will be kept confidential.

To maintain confidentiality, all completed surveys will not require any identifiable information such as your name, place of employment, or an e-mail address.

I will not use your personal information for any purposes beyond those described here. Also, I assure you that your name or any other identifying variables will be kept confidential. I will be the only person who will have access to the data, which will be kept on a secure electronic storage device in a locked cabinet. Data will be kept for a period of at least 5 years and destroyed as required by Walden University policy.

Due to the voluntary nature of this study, if you begin to complete the survey you can choose to stop participation at any time by closing out your browser window with the survey. However, after the survey is completed all surveys are anonymous and, therefore, cannot be identified to have your responses withdrawn from the study.

Risks of Being in the Study:

The only potential risk may be feelings of anxiety related to taking surveys. Remember, you can stop taking the survey at any time or choose not to take part in the survey at all.

Potential Benefits:

Results may also provide valuable feedback to the ABSNP to help validate strengths and identify weaknesses of the ABSNP board certification. Another potential benefit for participating in this study is to help inform other school psychologists whether pursuing ABSNP

board certification is a worthwhile pursuit for helping to better serve students with SLDs.

Payment:

There is no type of compensation of any kind for participation in this study.

Contacts and Questions:

Please feel free to email me with any questions you have now, during, or after the study, should you decide to take part. You can contact me via e-mail at Joseph.Ambrose@waldenu.edu. If you want to talk privately about your rights as a participant, you can call the Walden University Institutional Review Board representative Dr. Leilani Endicott who can discuss this with you. Her phone number is (612) 312-1210. Walden University's approval number for this study is 06-06-13-0260153 and it expires on June 5, 2014.

Please print or electronically save this consent form for your records.

Standardized Assessments in School

1. I earned a graduate degree/advanced certificate in school psychology.

True

False

2. I am currently certified/licensed as a school psychologist.

True

False

3. I attended a training program in school neuropsychology (e.g., KIDS INC.) as a pathway to obtaining my ABSNP diplomate.

Yes

No

4. As part of a comprehensive evaluation, I am able to use standardized assessments in my school district.

True

False

Access to Neuropsychological Assessments

5. I have access to neuropsychological assessments in my assigned school(s) and/or district.

True

False

Use of Neuropsychological Assessments in Practice

6. I currently use neuropsychological assessments as part of a comprehensive evaluation for learning disabilities.

True

False

Decision to Not Implement Assessments

7. I do not intend to implement neuropsychological assessments for learning disability evaluations now or in the future.

True

False

If "True" please specify reason

Use of Neuropsychological Assessments for Specific Learning Disabilities

8. Use of Neuropsychological Assessment in Practice

	True	False
I currently use neuropsychological assessments when evaluating students for READING DISABILITIES	<input type="checkbox"/>	<input type="checkbox"/>
I currently use neuropsychological assessments when evaluating students for WRITING DISABILITIES	<input type="checkbox"/>	<input type="checkbox"/>
I currently use neuropsychological assessments when evaluating students for MATH DISABILITIES	<input type="checkbox"/>	<input type="checkbox"/>

Barriers to Implementation

9. Are there any barriers keeping you from implementing neuropsychological assessments in practice?

Diagnostic Accuracy

All questions should be thought of as AFTER the ABSNP training/certification.

10. Assessment of Learning Disabilities

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree
My confidence in my ability to identify READING DISABILITIES has improved as a result of the training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My confidence in my ability to identify WRITING DISABILITIES has improved as a result of the training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My confidence in my ability to identify MATH DISABILITIES has improved as a result of the training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My diagnostic accuracy in identifying READING DISABILITIES has improved as a result of my training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My diagnostic accuracy in identifying WRITING DISABILITIES has improved as a result of my training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My diagnostic accuracy in identifying MATH DISABILITIES has improved as a result of my training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Intervention

All questions should be thought of as AFTER the ABSNP training/certification.

11. Intervention

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
My ability to recommend specific interventions/strategies for READING disabilities has improved after my training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My ability to recommend specific interventions/strategies for WRITING disabilities has improved after my training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My ability to recommend specific interventions/strategies for MATH disabilities has improved after my training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The training provided me with a broader range of READING interventions to recommend to teachers and parents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The training provided me with a broader range of WRITING interventions to recommend to teachers and parents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The training provided me with a broader range of MATH interventions to recommend to teachers and parents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="text"/>				

12. What is your gender? Male Female**13. What is your age?** 25 and under 26-40 41-55 56 and over**14. How many years have you practiced as a school psychologist?**

15. What is the highest level of education you have completed? Master's Doctorate Specialist/6th Year

16. In what state(s) do you currently practice as a school psychologist in? Please check all that apply.

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia (DC)
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri
- Montana

Nebraska

- Nevada
- New Hampshire
- New Jersey
- New Mexico
- New York
- North Dakota
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Texas
- Utah
- Vermont
- Virginia
- Washington
- West Virginia
- Wisconsin
- Wyoming

17. Which grades/populations(s) do you currently serve as a school psychologist?

Please check all that apply.

Birth-to-three

Pre-school

First Grade

Second Grade

Third Grade

Fourth Grade

Fifth Grade

Sixth Grade

Seventh Grade

Eighth Grade

Ninth Grade

Tenth Grade

Eleventh Grade

Twelfth Grade

K-12

18. How many years have you held diplomate status from the ABSNP?

19. My funding for the school neuropsychology post -graduate TRAINING program was obtained from which of the following (please check all that apply):

Self-Payment

School District

Educational Agency

Not Applicable

Other (please specify)

20. My funding for the ABSNP BOARD CERTIFICATION was obtained from which of the following (please check all that apply):

- Self-Payment
- School District
- Educational Agency

Other (please specify)

**21. Overall,
how
satisfied
are you
with the
post
-graduate
school
neuropsychology
training
you
received?**

Very dissatisfied Dissatisfied Neither dissatisfied or satisfied Satisfied Very satisfied

Curriculum Vitae

JOSEPH M. AMBROSE

PROFESSIONAL EXPERIENCE:**Watertown High School** Watertown, CT August 2012 – Present*School Psychologist*

- Provide comprehensive mental health and transition services for nearly one thousand students from 9th through 12th grade.
- Everyday duties included: conducting evaluations, neuropsychological assessments, providing individual and group counseling, transition planning, crisis intervention support, teacher and parent consultation, developing functional behavior analyses and behavior intervention plan, and linking students and families with outside community services.

Granby Memorial High School Granby, CT October 2009 – June 2012*School Psychologist*

- Provided comprehensive mental health and transition services for nearly eight hundred students from 9th through 12th grade.
- Member of building wide teams for Response to Intervention (RTI), Special Services Team (SST), and Student Assistance Team (SAT) to provide students and teachers with multi-tiered academic and behavioral interventions.
- Team leader for the pupil personnel Professional Learning Community (PLC).
- Member of district wide “Leadership Academy” for future school leaders.
- Member of Granby Public Schools special education interview committee for all new hires in the district.
- Everyday duties included: conducting evaluations, neuropsychological assessments, providing individual and group counseling, transition planning, crisis intervention support, teacher and parent consultation, developing functional behavior analyses and behavior intervention plan, and linking students and families with outside community services.

Avon Neuropsychology & Behavioral Medicine Avon, CT September 2009 – June 2010*Externship Student*

- Conducted comprehensive neuropsychological evaluations for child, adolescent, and adult patients.
- Obtained clinical supervision and feedback in administering and interpreting neuropsychological assessments and case conceptualization.
- Conducted intake interviews with patients and families.
- Assisted with patient neurofeedback treatments.

Harwinton Consolidated Elementary Harwinton, CT August 2008 – October 2009
School Psychologist

- Supervised daily operations of the Student Support Center (SSC) and SSC coordinator.
- Lead weekly SSC team meetings organized to address student behavioral issues.
- Coordinated community based resources to provide bully prevention groups and self-esteem development.
- Collected and analyzed data for building-wide positive behavioral support program.
- Provided comprehensive psychological services for an elementary school and special needs pre-school program.
- Member of district committee that identifies and provides enrichment for gifted students.
- Everyday duties included: conducting formal evaluations, providing individual and group counseling, attending planning and placement teams, writing student behavior plans, crisis intervention support, teacher and parent consultation, and linking students and families with outside community services.

Southwestern City Schools Grove City, OH August 2007 – June 2008
Intern School Psychologist

- Developed a university and school district partnership to develop and implement a RTI model.
- Administered bench-marking assessments for data collection in RTI process for elementary school students.
- Assembled a comprehensive district-wide resource library of academic and behavioral interventions for pre-referral teams and teachers.
- Co-presented an in-service on new assessment methods for specific learning disabilities and culturally diverse students.
- Everyday duties included: conducting formal evaluations, providing individual and group counseling, attending planning and placement teams, crisis intervention support, teacher and parent consultation, and attending weekly meetings.

Columbus City Schools Columbus, OH September 2006 - June 2007
Practicum School Psychologist

- Conducted psychological evaluations, behavioral and academic interventions, individual counseling, and attended weekly intervention team meetings.
- Participated in district-wide early intervention center, autism program, and emotionally disturbed schools.

- Presented consultation project at the 2006 Ohio State University Diversity Forum Graduate School Symposium.

RELATED WORK EXPERIENCE:

The Hannah Neil Center for Children Columbus, OH July 2004 - June 2005
Night Staff Coordinator

- Supervised a staff of twelve, prepared weekly schedules, interviewed new applicants, trained new employees, and chaired monthly staff meetings.
- Oversaw more than 60 children and adolescents at night and provided support to staff to meet the emotional and physical needs of all youth.

Youth Specialist

- Planned daily activities, dispensed psychiatric medications, and prepared incident reports.
- Taught crisis and conflict management skills through indirect mediation.
- Provided students with emotional and academic support in the classroom.
- Developed, implemented, and monitored behavioral interventions in the classroom setting.

Family Service League Huntington, New York January 2004 - June 2004
College Counselor

- Advised at-risk high school students in a college bound program developed to assist transition students through the secondary education process.
- Developed grant for financially disadvantaged college bound students to provide essential items needed for living in a college dormitory.
- Assisted students with SAT preparation and both college and financial aid applications and scheduled group tours to local colleges.

Head-Start Pre-School Assistant

- Assisted teacher with the implementation of educational and social lessons to prepare students for successful entry into Kindergarten.

EDUCATION:

Doctor of Philosophy in Psychology (GPA: 4.0)

November 2014

Walden University

Minneapolis, Minnesota

Master of Arts in School Psychology (MA + 30/6th yr) (GPA: 3.87)

June 2007

The Ohio State University

Columbus, Ohio

Bachelor of Science in Computer Security (GPA: 3.85)

May 2003

State University of New York at Farmingdale
Farmingdale, New York**Associate of Science in Criminal Justice (GPA: 3.9)**

May 2001

State University of New York at Farmingdale
Farmingdale, New York**CERTIFICATION:**

State of Connecticut Department of Education Certification May 2011 – May 2019

State of New York Department of Education Certification Permanent

PROFESSIONAL DEVELOPMENT:**Granby School District** Granby, CT October 2009 – June 2012*Professional Training*

- Crisis Prevention Institute crisis intervention training
- National Association of Psychologist Conference in Philadelphia (4 days)
- Autism Diagnostic Observation Schedule (ADOS) two day training
- Two conferences sponsored by True Colors for gay, lesbian, bisexual, transgender, and questioning youth at the University of Connecticut
- DaFour Professional Learning Community training (2 days)
- State Education Resource Center (SERC) diversity training (4 days)

Regional School District #10 Harwinton, Connecticut August 2008 –
October 2009*Professional Training*

- Nonviolent Crisis Intervention Training Program
- National Association of School Psychologists Convention in Boston (4 days)

Southwestern City Schools Grove City, Ohio August 2007 –
June 2008*Professional In-Services*

- School-Focused Traumatic Event Crisis Intervention Training (2 days)
- Jim Wright Presents: Response to Intervention (RTI): General Academic Interventions for Difficult-to-Teach Students
- Ohio Association of School Psychologists Intern Conference
- A Best Practice Approach to Pre-Referral Interventions

The Ohio State University Columbus, Ohio September 2007 -

Present *Internship Seminars*

- Response to Intervention Panel
- Mental Health and Counseling
- Psychologist's Guide to Solution Focused Intervention Assistance Teams
- Conducting ADHD groups in academic settings
- Crisis intervention plan implementation
- RTI vs. cognitive assessment debate
- Academic and behavioral interventions

September 2005 - May 2006

Columbus Area Family Resource Visits

- Children's Hospital Traumatic Brain Injury Clinic
- St. Vincent Family Centers
- Children's Hospital Neonatal Intensive Care Unit