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Tillotson, Tammy L. ***Perceptions of Dyslexia Knowledge among Elementary Education Teachers in the Chippewa Valley of Wisconsin***

Abstract

Perceptions of dyslexia knowledge among elementary education professionals in the Chippewa Valley of Wisconsin were identified in this study through the replication of previous research conducted by Wadlington and Wadlington (2005). Many misperceptions were also identified based on how long teachers had taught, the grade they taught, demographic information such as gender and age, whether they had a reading specialist certificate, if they had knowingly taught students with dyslexia, if they felt knowledgeable to teach students with dyslexia, the school from which they earned their teaching degree, and their overall beliefs about dyslexia. This study reinforced the research from the previous research.

Acknowledgements

Thank God for little boys with dyslexia who grow up to be incredible men. Without my husband and sons, my interest in dyslexia would be very different today. I am blessed to not only be surrounded with these incredible four men in my home but also to extend my passion, knowledge, and ability to be a champion for children with dyslexia through my work with the Children's Dyslexia Center of Upper Wisconsin. All of these people have encouraged and strengthened my desire to create better awareness and greater opportunity for children with dyslexia to succeed beyond even their imagination.

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Chapter I: Introduction

Background Information

The National Institute of Child Health and Human Development (NICHD) (2000) estimates at least 17% to 20% of all children in the United States are reported to have some type of developmental disability such as dyslexia. According to the International Dyslexia Association (2002), dyslexia is defined as a specific learning disability that is neurological in origin that affects as many as one in five children. Dyslexia is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede the growth of vocabulary and background knowledge.

Though dyslexia is only one kind of disability, it affects a fairly equal number of males and females making it a universal problem within approximately 20% of the population (International Dyslexia Association, 2008; Shaywitz, 2003; 2003; Coordinated Campaign for Learning Disabilities, 2001; NICHD, 2000; Richards, 1999; Learning Disabilities Association of America, 1996; Richardson, 1994). This means that approximately one in five children, regardless of gender, will likely experience significant symptoms of dyslexia, including slow or inaccurate reading, poor spelling, and poor writing (International Dyslexia Association, 2008). While this is a significant number of children and families affected by dyslexia, it is only part of the problem.

Dyslexia is a diverse learning disability in that those affected by it can fall within a rather broad spectrum of characteristics from mild to profound. Students identified with specific characteristics may receive intensive remediation services to minimize their struggles and though the remediation services will not cure dyslexia, it will help them to lessen the challenges associated with it. Students with more profound characteristics may never be able to adapt their learning skills to compensate for their differences in processing especially without early and effective interventions (McCormick, 2007).

According to Wadlington and Wadlington (2005) there are significant misperceptions and lack of awareness about dyslexia among educators. These misperceptions and lack of awareness of the early indicators of dyslexia often lead to not enough being done soon enough to diagnose and then intervene appropriately (Vail, 2001; Thorton, 1999). Occasionally local school districts do not even recognize dyslexia as a specific learning disability because they may not have the resources necessary for meeting the needs of students with dyslexia (Katz, 2001). This can be a detriment to students and society because students that go undiagnosed and untreated have greater risk of falling through the cracks of the educational system. They often become disruptive because they develop social and emotional problems such as low self-esteem, sense of helplessness, stigma, frustration, and depression (Rubin, 2002; Currie & Wadlington, 2000; Riddick, 1995; Ryan, 1994). These problems can then lead to increased risk of getting in trouble with the law later in life causing undue issues in communities (Currie & Wadlington, 2000; Thornton, 1999).

Wadlington and Wadlington (2005) developed and validated a survey tool to measure beliefs regarding dyslexia. It was then used in their study to investigate the

beliefs regarding dyslexia among students going to school to become educators. This tool was called the Dyslexia Belief Index and provided a wealth of insight among their study population and is used to replicate their study (Wadlington & Wadlington, 2005).

The greater Chippewa Valley of Wisconsin appears to be similar to other relatively small rural communities that have educational systems challenged with identifying and addressing issues of learning disabilities such as dyslexia (Coffey & Obringer, 2000; Good, 2010). The Chippewa Valley is nestled in central Wisconsin about 90 miles east of Minneapolis, Minnesota, and consists of several small towns and cities including: Altoona, Bloomer, Cadott, Chippewa Falls, Colfax, Cornell, Eau Claire, Elk Mound, Fall Creek, Menomonie, New Auburn, and Stanley-Boyd. There are approximately 360 elementary education professionals, including general education teachers, special education teachers and support staff working in the Chippewa Valley school districts (Bloomer School District, 2009; Cadott School District, 2009; Colfax School District, 2009; Cornell School District, 2009; Elk Mound School District, 2009; Fall Creek School District, 2009; Menomonie School District, 2009; New Auburn School District, 2009; Stanley-Boyd School District, 2009). These staff members work with an average of 5,550 children per year according to the school district administrative offices.

Teachers working within the Chippewa Valley school districts are required to hold a valid Wisconsin teaching license, a bachelor's degree, and are preferred to have prior teaching experience (Wisconsin Department of Public Instruction, 2009). They are required to maintain their licensure through ongoing training and development which is often provided by teaching unions, the Wisconsin Department of Public Instruction, and their school district. In regard to being aware of and understanding dyslexia and the early

indicators of it, they should have been at least exposed to information in their education courses while earning their undergraduate degree (Wisconsin Department of Public Instruction, 2009).

Statement of the Problem

As identified in other studies, there is a lack of awareness and a significant number of misperceptions about dyslexia that contribute to the confusion surrounding dyslexia (McCormick, 2007; Wadlington & Wadlington, 2005; NICHD, 2000). Dyslexia is often overlooked as a specific learning disability and can lead to numerous lifelong issues if gone undiagnosed and untreated (Bruck, 1998). The beliefs and awareness of dyslexia by elementary education teachers have not been investigated or identified in the Chippewa Valley, leaving substantial room for students with this learning disability to go undetected and untreated.

Purpose of the Study

The purpose of this study is to not only identify overall beliefs about dyslexia among elementary education staff in the Chippewa Valley, but also to recognize what differences may exist based upon how long they have taught, the grade they teach, demographic information such as gender and age, whether they have a reading specialist certificate, if they have knowingly taught students with dyslexia, if they feel knowledgeable to teach students with dyslexia, and the school from which they earned their teaching degree. By identifying the beliefs about dyslexia among elementary education staff, strategies can then be developed to increase awareness of dyslexia and minimize any misperceptions that may exist about dyslexia. Strategies can also be

developed for district administrators and university programs to utilize in assisting teachers in learning about dyslexia so that proper interventions can be implemented.

Objectives of the Study

The objectives addressed in this study will include the following:

1. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on how long they have taught.
2. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on the grade they teach.
3. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on demographic information such as gender and age.
4. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on having a reading specialist certificate.
5. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on having taught students with dyslexia.
6. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on feeling knowledgeable to teach students with dyslexia.
7. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on the school from which they earned their teaching degree.
8. Identify overall beliefs about dyslexia among elementary education staff in the Chippewa Valley.

Importance of the Study

The importance of this study includes but is not limited to the following:

1. Increase awareness of dyslexia as a learning disability among the study participants. Simply by participating in the study, awareness of dyslexia will have increased. Increased awareness can lead to prevention of children being overlooked when needing assistance and intervention of services for children identified with this learning disability.
2. Recommend strategies that school district administrators could use to educate elementary education staff about dyslexia. Knowing the beliefs of elementary education staff will allow effective strategies to be developed in addressing any misperceptions and lack of information. These strategies could then lead to increased awareness and better identification of early indicators of dyslexia. When children are identified early there is increased probability that they will receive effective instruction that will improve their educational knowledge and experience.
3. Provide fundamental information about the perceptions and beliefs that elementary education staff in the Chippewa Valley have regarding dyslexia. Providing this knowledge to the teaching staff allows for growth and development as teachers. Providing this information to the school districts allows for the development of strategies to address any identified issues. Providing this information to local colleges and universities allows for improved preparation of new teachers because curriculum can be adjusted to address any identified issues.

4. Provide an opportunity to address the perceptions surrounding dyslexia based on the information gathered. Through the distribution of the survey results and analysis, any misperceptions can be addressed. In minimizing any identified misperceptions and increasing awareness of dyslexia, more children can be identified and provided with effective multi-sensory interventions.
5. In an even broader scope, this study can be utilized by local Universities and Technical Colleges that provide elementary education programs to enhance their programs by disseminating information that addresses any misperceptions identified in the study and better prepare students for the work force.

Limitations of the Study

Limitations of this study include the following:

1. The investigation of a relatively small population is restricted to staff from only the elementary schools within the Chippewa Valley who were not entirely randomly selected. Although the staff participating in the study will remain anonymous, they were selected because they teach in the Chippewa Valley School Districts out of ease, convenience, and interest to the researcher.
2. There is an assumption that there is an existing lack of awareness and significant misperceptions about dyslexia among elementary education staff in the Chippewa Valley. There has traditionally been a bit of mystery around dyslexia causing misperceptions. This assumption is also made based on the researcher's experience with school district staff.

3. It is assumed that strategies to generate awareness can be created based on gathering information about elementary education teachers' beliefs regarding dyslexia. Should any existing issues be identified through the study, information can be provided to organizations such as the Wisconsin Branch of the International Dyslexia Association, Parents for Learning, or the school districts so they can develop strategies to address any identified issues.
4. The use of the Dyslexia Belief Index (DBI) (Wadlington & Wadlington, 2005) tool created by previous researchers could potentially present issues in accuracy and legitimacy of beliefs in this geographic area even though the tool has been validated and is believed to be an accurate measure of beliefs regarding dyslexia. This tool was created, validated, and used at a large, southern regional university in the college of education. It provides a standard of measure for beliefs regarding dyslexia but has not been used with elementary education teachers in prior studies.
5. The completion of this study to be done during the school year could potentially factor into the success of participation from teachers as this is when they are busy in the classroom. An online survey should help minimize potential negative factors regarding this, as the staff have full access to their email and have support from their school district administrators to participate in this study.

Definition of Terms

For the purpose of this study, the following terms are identified and clarified in the context of research regarding dyslexia.

Coordinated Campaign for Learning Disabilities. A collaborative public awareness effort of the Learning Disabilities Association of America, the International Dyslexia Association, the National Center for Learning Disabilities, the Division for Learning Disabilities at the Council for Exceptional Children, the Council for Learning Disabilities and the Schwab Foundation for Learning and coordinated by the Communications Consortium Media Center. (Coordinated Campaign for Learning Disabilities, 2001)

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

Elementary Education Teacher. This term refers to a person qualified and licensed to teach education in elementary subjects (reading, writing, and arithmetic) provided to young students at the grade school level (kindergarten through fifth grade). (Wisconsin Department of Public Instruction, 2008)

International Dyslexia Association. An international organization that concerns

itself with the complex issues of dyslexia. The IDA membership consists of a variety of professionals in partnership with people who have dyslexia and their families and all others interested in The Association's mission. The purpose of IDA is to pursue and provide the most comprehensive range of information and services that address the full scope of dyslexia and related difficulties in learning to read and write in a way that creates hope, possibility, and partnership. (International Dyslexia Association, 2009)

Learning Disabilities Association of America. This is a nonprofit, volunteer organization that was established in 1963 by parents of children with learning disabilities. It advocates for individuals with learning disabilities in 42 states and Puerto Rico. It has 15,000 members in 27 countries and the mission is to create opportunities for success for all individuals affected by learning disabilities and to reduce the incidence of learning disabilities in future generations. (Learning Disabilities Association of America, 1996)

National Institute of Child Health and Human Development. Established by congress in 1962. It conducts and supports research on topics related to the health of children, adults, families, and populations. (National Institute for Child Health and Human Development, 2000)

Specific Learning Disability. Means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia but does not include learning problems that are primarily the result of visual, hearing, or

motor disabilities, of intellectual disability, of emotional disturbance, or of environmental, cultural, or economic disadvantage. (Wisconsin Department of Public Instruction 34 CFR 300.7, 2008; Open Congress, 2010)

Chapter II: Literature Review

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

Though the International Dyslexia Association (IDA) definition of dyslexia is likely the most recognized and agreed upon, it has undergone changes in an effort to establish a clear, all-encompassing definition that professionals across fields of expertise can recognize and utilize (Lyon, Shaywitz, & Shaywitz, 2003). A great deal of effort was put forth in revising, updating, and expanding the 1994 IDA working definition of dyslexia. Volume 53 of the 2003 *Annals of Dyslexia*, IDA's professional journal, provides a detailed overview of the discussion that professionals have had in elaborating on the definition of dyslexia. The summary attempts to provide the structure for the revised, updated, and expanded 1994 definition to the 2002 definition based on the converging, relevant evidence available. The 2002 IDA definition states that dyslexia is a specific learning disability that is neurological in origin and affects as many as one in five children. Dyslexia is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result

from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede the growth of vocabulary and background knowledge (International Dyslexia Association, 2002).

Dyslexia is defined differently by various segments of people which contribute to the misperceptions surrounding it and further compound the problems associated with undiagnosed dyslexia because of a lack of services and resources (Wadlington & Wadlington, 2005; Shaywitz, 2003; Rubin, 2002; Vail, 2001; Currie & Wadlington, 2000; Thorton, 1999). Dyslexia is often referred to as a hidden disability because it does not have outwardly visible signs that easily indicate to others that there is an issue, which has contributed to the problem of confusion and misperceptions (Shaywitz, 2003). In many cases dyslexia is still referred to as a defect and has a stigma that belittles a person's sense of ability and worth. As noted in Dr. Marcia Henry's 1998 address at the 48th Annual IDA Conference regarding a selective biography of Dr. Samuel Orton, Orton himself is acknowledged for saying that the failure to acquire reading is a disability rather than a defect. "This means that we do not look upon them as deficiencies which cannot be cured but rather as special handicaps requiring special methods or often simply more careful and painstaking application of usual methods." (Henry, 1999). While there continues to be dispute about how best to define, diagnose, and treat dyslexia, much of it stems from the misperceptions that exist.

Common Misperceptions

The confusion around dyslexia often begins with the contradictory terminology used to describe it, assess it, and understand it (Wadlington & Wadlington, 2005; Currie & Wadlington, 2000; Kerr, 1998). Dyslexia is referred to as a specific learning disability (Knight, 1997) by some and as a reading disability (Shaywitz, 2003) by others. The Wisconsin Department of Public Instruction refers to dyslexia as a non-school identification of a reading disorder that does not determine a need for special education services (Wisconsin Department of Public Instruction, 2006). This confusion of terminology among experts in the study of dyslexia has created a sense of uncertainty and lack of clarification (Paradice, 2001; Regan & Woods, 2000). Shaywitz (2003) expresses concern that some continue to claim that dyslexia does not exist and they question the validity of it, despite the overwhelming research and brain imaging technology that supports the theories of dyslexia being a neurological based disorder that infiltrates every aspect of a person's life.

The Federal definition includes dyslexia as a specific learning disability and describes it as a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia but does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of cognitive disabilities, of emotional disturbance, or of environmental, cultural, or economic disadvantage (Wisconsin Department of Public Instruction, 2008). Though the Federal

definition includes dyslexia under the umbrella of specific learning disabilities, Wisconsin and local school districts may be less likely to openly acknowledge dyslexia as a specific learning disability that would qualify a student for special education services causing more confusion and misperceptions among educators and parents.

In researching the misperceptions that exist about dyslexia, Wadlington and Wadlington (2005) identified very specific misperceptions among their study participants. Those misperceptions most highly noted in that study included the statements from their Dyslexia Belief Index: a) Word reversal as a major criterion in the identification of dyslexia, b) Individuals with dyslexia usually exhibit the same characteristics with similar degrees of severity, c) It is not true that individuals with dyslexia may pronounce words in a passage very well but be unable to comprehend it, and d) Dyslexia is not hereditary. These misperceptions were not only identified by participants in the Wadlington study but also reinforced previous studies showing that people mistakenly believe that word or letter reversal is the leading identifier for dyslexia and that comprehension is connected to pronunciation (Shaywitz, 2003; Currie & Wadlington, 2000; Kerr, 1998). The misperceptions regarding dyslexia are consistently reinforced through studies over time and appear to not have been curtailed much through education or awareness.

A poll done by the Emily Hall Tremaine Foundation showed further confusion among parents and educators regarding learning disabilities (Roper, 2010). It not only found misunderstandings about the definition but also about root causes, key influencers, and interventions. All of these things were noted to impact public policy and legislation that supports children who learn differently. This confusion reportedly reinforces the

stigma around learning disabilities which is a disservice to students diagnosed with a learning disability such as dyslexia. Interestingly, the study showed that 78% of Americans recognize the importance of early interventions though there is still much confusion about what effective interventions are and how to implement them.

Lack of Services and Resources

When appropriate educational interventions are implemented prior to third grade, students tend to have fewer long-term reading problems than those receiving support past third grade (Wadlington & Wadlington, 2005; IDA, 2002; NICHD, 2000; Moats & Lyon, 1996). Often educators are not aware of and do not recognize the signs of dyslexia which leads to delayed assessments and interventions (Katz, 2001). Though the National Council for Accreditation of Teachers (NCATE) has implemented new standards for accrediting schools of education, teacher education programs are still believed to lack in preparing teachers to effectively teach reading (Thomson, 2002; NCATE, 2000; Ford, 1997; Richardson, 1996). The study done by Wadlington and Wadlington (2005) revealed that 87.8% of the study participants did not consider their formal education had prepared them for teaching students with dyslexia, which was further confirmed by Moats (2009) in her investigation of teacher education. According to the study done by Bos, Mather, Dickson, Podhajski, and Chard (2001), experienced teachers knew somewhat more about language structure and indicated a greater need for explicit reading instruction than inexperienced educators.

There is further developing evidence that teachers are often licensed without acquiring knowledge of language and reading development (Moats & Foorman, 2003). Moats and Foorman suggest that teachers rely on their teaching experience, structured

reading programs, screening tests, or their willingness to apply their higher academic standards to learn essential insights for utilizing explicit reading instruction. It has even been suggested that perhaps the instructors of reading education courses may not be knowledgeable of the concepts of language structure which further challenge educators (Joshi, Binks, Hougen, Dahlgren, Ocker-Dean, Smith, 2009).

Though the literature primarily focuses on general misperceptions among educators as a whole, there continues to be some on-going support for the study of beliefs among educators to help determine how those beliefs affect learning environments as well as what might influence those beliefs. Pre-service and in-service educators indicated in a study conducted by Bos et al (2001) that they felt only somewhat prepared to instruct reading. Further, this study found no significant differences existed among groups regarding their perceptions based on the in-service educators' years of teaching experience regardless of their feelings of preparedness. The findings of that study suggested that general education teachers as well as special education teachers may not be adequately prepared to instruct students with dyslexia and related reading problems regardless of where their training was received. A similar study found no significant differences in the relationship between elementary educators' philosophical orientation toward reading instruction and their classroom practices based on the grade level they taught (McCutchen, Harry, Cunningham, Cox, Sidman, & Covill, 2002). The study did however find a correlation between content knowledge and instruction especially among kindergarten teachers.

There are variations between federal and state laws that leave room for school district discretion which sometimes extends a blatant disregard for dyslexia as a learning

disability and provides a gap in services and resources needed by students with dyslexia (Wisconsin Department of Public Instruction, 2006; Katz, 2001). Parents and educators find laws frustrating and difficult to understand and navigate through when trying to advocate for students (Antonoff, Olivier, & Norlander, 1998). Even among legislators and policy makers there is ongoing question of how to determine specific learning disabilities.

As of January 8, 2010, Wisconsin proposed rules to modify eligibility criteria used to identify children with specific learning disabilities in an effort to be consistent with federal requirements. In 2011, Governor Walker of Wisconsin developed a committee to investigate how to improve reading in Wisconsin. Federal requirements specify that state local education agencies must permit the use of an identification process that is based on a child's response to scientific, research-based intervention to determine whether a child has a specific learning disability rather than a severe discrepancy process (Wisconsin Department of Public Instruction, 2010). While this would appear as a positive move toward increased services and resources, there continues to be dispute over what constitutes a scientific, research-based intervention (Wisconsin Branch of the International Dyslexia Association, 2010). The International Dyslexia Association, as well as the National Reading Panel, American Federation of Teachers, the National Council of Teachers of English, the International Reading Association, and the American Speech, Language, and Hearing Association have all developed best practices reports to assist in identifying effective interventions (Joshi et al, 2009).

Students with specific learning disabilities represent one of the largest disability areas in the state, however an individual education plan (IEP) team must decide that a

child needs special education in order to address a child's learning problems according to the Wisconsin Department of Public Instruction (2010). A 2001 report by the National Center for Education Statistics notes that more than one third of all students cannot read with clarity and fluency (Joshi et al, 2009). Joshi et al (2009) identified environmental reasons including poor oral language development, the number of books available at home, parental attitudes, and parental models, as well as instructional reasons that include the lack of literacy environments in schools, ineffective instructional methods, and lack of teacher knowledge about language and structure as factors for literacy problems. Some of the cause for issues within the schools may extend from insufficiently trained educators about language and the skills needed to provide direct, prescriptive, and diagnostic language-focused instruction (Beringer & Wolf, 2009; Moats & Lyon, 1996). Though general education teachers may not have the training or experience to assist students with a specific learning disability, they are expected to provide interventions or make modifications so the child has access to curriculum and meets the standards.

Because the treatment of dyslexia is educational, the International Dyslexia Association created a knowledge and practice standards to serve as a guide for educators (International Dyslexia Association, 2011). This document outlines areas of proficiency needed to effectively provide reading instruction. These standards in the first section of the document include a foundation of the concepts about oral reading and written language learning, knowledge of the structure of language, knowledge of dyslexia and other learning disabilities, interpretation and administration of assessments for planning instruction, structured language teaching which includes phonology, phonics and word study, fluent and automatic reading of text, vocabulary, text comprehension, and

handwriting, spelling, and written expression, and ethical standards for the profession. Similarly, the National Reading Panel, in 2000, identified training in phonemic awareness, systematic phonics instruction, fluency, vocabulary, and strategies for comprehension as the essential and necessary components for quality reading instruction (Joshi et al, 2009).

Issues of Undiagnosed Dyslexia

Positive results have been realized when children receive an early identification and proper instruction on language structure (Blachman, Tangel, Ball, Black, & McGraw, 1999). Children who go undiagnosed with dyslexia often misbehave or become disruptive in an effort to avoid tasks in which they feel frustrated. (Currie & Wadlington, 2000; Thornton, 1999). Because a student's sense of belonging, security, and self-confidence in a classroom provides basis of support, it is logical to correlate the significance in a decrease in these things when a learning disability impedes progress (Brooks, 2001). Brooks (2001) identified that every child has differences from birth including their temperaments, learning styles, and kinds of intelligence. He further explained the injustice and prescription for failure and frustration by requiring students to learn and perform identically, even though they are each unique. Often people with learning disabilities perceive themselves as having social and emotional issues (Bruck, 1998). They identify themselves as being lonely, having strained peer relationships, and having difficulties controlling their tempers and frustrations.

The stigma created from having a learning disability like dyslexia can be caused by feelings of inferiority, either self-imposed or inadvertently by meaningful others (Rome, 1970). As children attempt to suppress feelings of insecurity, they suffer anxiety,

depression, and a sense of helplessness. This view on the psychiatric aspects of dyslexia provides insight to the general assumption that individuals who are poor spellers or fumbling readers are labeled as "stupid". Individuals tend to be less confident, shy, hesitant, and physically tense. They generally will not volunteer and when put in uncomfortable situations will often experience physical and emotional issues.

With a diagnosis of dyslexia comes a sense of relief for many parents and students, though dyslexia is still often misunderstood (Wadlington & Wadlington, 2005). Dyslexia diagnosed or otherwise, can negatively affect a person's confidence and self-image because they often see themselves as inferior to their peers which can be discouraging and frustrating (International Dyslexia Association, 2008). Success builds success and when students are offered opportunities to experience authentic accomplishments, they also experience an increase in motivation and self-esteem (Brooks, 2001). Educators have an opportunity to positively impact students by addressing the uniqueness of each student's learning style and elaborating on how accommodations can meet their educational needs which necessitates an increase in self-esteem and confidence.

Over time, people who go undiagnosed or do not receive effective accommodations may struggle with college and careers (Bruck, 1998). They may get into trouble with the law because of behavioral problems associated with their frustration of being misunderstood (Currie & Wadlington, 2000). They may even be affected in the workforce because they may be unable to perform basic tasks involving reading, writing, recall, and other simple responsibilities (Harris & Ricketts, 2009). College students who struggled with a learning disability as a child often require additional years to complete

college programs if they completed it at all (Bruck, 1998). However, with adequate early intervention, learning disabilities may not be a life-long handicap and any negative effects can be minimized.

The literature shows that there appears to be confusion about dyslexia as well as what the causes and consequences are for it. The poll released by the Emily Hall Tremaine Foundation found that the public and parents mistakenly believe that a child's home environment is the cause for a learning disability (Roper, 2010). It also discovered that 51% of the people involved in the study believe learning disabilities are due to laziness. While home environment may have an effect, it is not the only predictor of a learning disability (Joshi et al, 2009).

There are many common perceptions about dyslexia which may be caused by confusion in terminology, lack of awareness, poor training, or many other things. These misperceptions may contribute to the lack of services and resources available for students who struggle to get appropriate interventions implemented effectively. Without the proper interventions, the literature supports that these students will continue to struggle and be challenged needlessly which can lead to numerous other lifelong issues.

Chapter III: Methodology

This study was designed to answer the following research questions:

1. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on how long they have taught.
2. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on the grade they teach.
3. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on demographic information such as gender and age.
4. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on having a reading specialist certificate.
5. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on having taught students with dyslexia.
6. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on feeling knowledgeable to teach students with dyslexia.
7. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on the school from which they earned their teaching degree.
8. Identify overall beliefs about dyslexia among elementary education staff in the Chippewa Valley.

It was determined that the best way to answer these questions included a review of the literature and accessing information directly from professionals in the field. In

addition, a similar study was conducted in 2005 by Wadlington and Wadlington at a large southern university. They created a tool called the Dyslexia Belief Index (DBI) which was then test-piloted and validated before being used in their research. Because they studied the beliefs about dyslexia among pre-service educators using a reliable tool, it was worthy of applying new research under similar conditions using the DBI. Thus, this study is an adaptation of and replication of the study conducted by Wadlington and Wadlington in 2005.

The methodology used in researching the beliefs about dyslexia among elementary education professionals in the Chippewa Valley was based on the replicated survey tool. The DBI was distributed to the research subjects as a survey (Appendix E). The completed surveys were then used to specifically identify differences in beliefs about dyslexia based on tenure, gender, grade taught, where the degree was earned, and experience in teaching students with dyslexia.

Subject Selection and Description

The subjects for this study were elementary education professionals in the Chippewa Valley located in northwestern Wisconsin. Selection of this particular group came out of a need for research with this population and convenience in location to the researcher. Twelve school district administrators were contacted for approval of staff to participate in the study. Considerations used in identifying the schools included the geographic make-up of the Chippewa Valley, location in relation to the researcher, and lack of research done in this geographic area regarding this topic. Of those 12 contacted, nine school districts approved staff participation and provided email addresses for their staff (Bloomer, Cadott, Colfax, Cornell, Elk Mound, Fall Creek, Menomonie, New

Auburn, and Stanley-Boyd), two school districts had no reply even after several contact attempts (Eau Claire and Altoona), and one school district denied staff participation out of concern for the term dyslexia not being used within their teaching community (compared to learning disability) therefore thought it would be "confusing for teachers to participate" (Chippewa Falls).

The participating school districts are considered small to medium, rural districts with relatively a small staff in each elementary school. Surveys were sent to nine staff members in the New Auburn elementary school serves an average of 225 elementary students each year in New Auburn, Wisconsin (New Auburn School District, 2009). Surveys were sent to 16 staff members in the Cornell elementary school which serves an average of 350 elementary students each year in Cornell, Wisconsin (Cornell School District, 2009). Surveys were sent to 18 staff members in the Colfax elementary school which serves an average of 350 elementary students each year in Colfax, Wisconsin (Colfax School District, 2009). Surveys were sent to 20 staff members in the Cadott elementary school which serves an average of 425 elementary students each year in Cadott, Wisconsin (Cadott School District, 2009). Surveys were sent to 37 staff members in the Fall Creek elementary school which serves an average of 350 elementary students each year in Fall Creek, Wisconsin (Fall Creek School District, 2009). Surveys were sent to 38 staff members in the Stanley-Boyd elementary school which serves an average of 450 elementary students each year in Stanley-Boyd, Wisconsin (Stanley-Boyd School District, 2009). Surveys were sent to 39 staff members in the Elk Mound elementary school which serves an average of 450 elementary students each year in Elk Mound, Wisconsin (Elk Mound School District, 2009). Surveys were sent to 45 staff members in

the Bloomer elementary school which serves an average of 500 elementary students each year in Bloomer, Wisconsin (Bloomer School District, 2009). Surveys were sent to 138 staff members in the Menomonie elementary schools which serve an average of 2,400 elementary students each year in Menomonie, Wisconsin (Menomonie School District, 2009). Participants included general education teachers, special education teachers, paraprofessionals, and other teachers such as art, music, and physical education, who all work within the elementary schools.

The school districts that did not participate in the study included Altoona which serves an average of 350 elementary students each year in Altoona, Wisconsin, Chippewa Falls which serves an average of 5,000students annually in Chippewa Falls, Wisconsin, approximately 2,000 of whom are in the elementary schools, and Eau Claire which serves an average of 5,000 elementary students each year in Eau Claire, Wisconsin (Altoona School District, 2009; Chippewa Falls School District, 2009; Eau Claire School District, 2009).

Survey Instrumentation

The survey used in this study was a tool that was adopted from a prior study on the beliefs about dyslexia. The tool, called the Dyslexia Belief Index (DBI), was used in the previous study to investigate beliefs among undergraduate and graduate students preparing to become administrators, counselors, elementary general education teachers, secondary general education teachers, speech therapists, and special education teachers at the Southeastern Louisiana University. Although the majority of the DBI survey remained the same, two changes were made: 1) the demographics portion of the survey was adapted to better reflect the population of this study, 2) the term ‘general education’

was used in place of 'regular education' to better align with the Individuals with Disabilities Act (IDEA) of 1990.

The survey (Appendix E) consisted of 30 quantitative statements on the DBI that required participants to answer on a four point Likert scale of "know it's false", "probably false", "probably true", and "know it's true". The survey included 10 additional demographic questions referring to how long they taught, where they earned their teaching degree from, the grade they taught, their gender and age, the school district they currently teach in, their position, whether they hold a reading specialist certificate, if they have knowingly taught children with dyslexia, and if they feel knowledgeable teaching students with dyslexia.

Replication of a Study

The Dyslexia Belief Index (DBI) was developed in a Likert-type format. Initially it consisted of 75 items that were scaled back to 32 items through elimination of similar or confusing items. It was then pilot tested with a group of 130 people. Upon completion of the pilot, two additional items were removed and it was read for content and validity. The DBI was then administered to undergraduate and graduate students who had been randomly selected for the Wadlington and Wadlington study (2005).

Because similar demographics and beliefs about dyslexia were being investigated in this study of beliefs about dyslexia in the Chippewa Valley, Elizabeth Wadlington, one of the creators of the DBI, was contacted for permission to replicate their study through use of the DBI for this study. Once permission was granted, the demographic questions were adapted and the DBI statements were added to the Qualtrics system for inclusion on the survey. (See Appendix G for communication/documentation.)

Replication is a term that refers to the repetition of a research study. Usually there are different situations and different subjects used to determine if the basic findings of the original study can be generalized (Sherry, 2011). Replications of a study not only eliminate the need to create, test pilot, and validate a survey; it further challenges previous surveys (Burman, Reed, & Alm, 2010). New data gathered will provide one of three results. It will confirm findings from previous studies which further validates the information. It will negate the findings from previous studies by not being reproducible. Or it will negate the findings from prior research by showing differing results or a lack of producible results similar to the replicated study that is substantial. Replication studies can either confirm or contradict results from earlier studies and there is knowledge to be gained from either confirmation or contradiction (Burman, Reed, & Alm, 2010).

Data Collection Procedures

Upon receipt of email addresses supplied by the school district administrative offices, an initial email (Appendix A) was sent to all elementary education staff in the school district authorized elementary schools using the Qualtrics survey system two weeks prior to distribution of the survey. Qualtrics is the survey tool used through the University of Wisconsin - Stout for online research survey and data collection.

A second email was sent one week prior for the purpose of informing participants of the study, the benefits and risks associated with participating, the time commitment needed, their right to withdraw from the study, confidentiality, and the University of Wisconsin Stout's Institutional Review Board approval of the study. The email served as an introduction (Appendix C) and implied consent to participate (Appendix B).

The survey was then distributed online to the participating school district elementary education staff with a letter (Appendix D) reminding them of information sent in prior letters. Participants were asked to complete the survey voluntarily and anonymously within seven days. Upon completion of the survey, the responses from each participant went directly to the Qualtrics system where it could then be analyzed. In an effort to increase the response rate, a follow-up contact was made with a letter (Appendix F) via email reminding the survey population to submit their completed survey.

Data Analysis

The survey responses were processed and analyzed through the Statistical Package for the Social Sciences (SPSS) system using statistical hypothesis tests, known as T-tests in accordance with an analysis of variance (ANOVA). Specifically, differences in the thirty questions were reviewed and compared for differences in gender, differences in tenure, differences in grades taught, differences in where teaching degrees were earned, and differences in whether educators had previously taught students with dyslexia.

In cooperation with the Research Assistance Office at the University of Wisconsin Stout, the data collected through the Qualtrics survey was tabulated then cross compared to identify notable and statistically significant differences. Of the statements on the DBI that were identified as being statistically significant, cross tabulations were done to further investigate the differences based on the demographics questions.

Limitations

In processing the survey responses, the most significant limitation was the poor return rate. Of the approximate 360 surveys sent to professionals within the school districts included in the study, only 19% were returned. Although, statistically significant differences were found from the data collected, this limited number of responses may have skewed the research. The poor response may be due to a number of reasons including the study participants having a perceived lack of information provided to them prior to the survey distribution, their perceived lack of time to complete the survey, their seeming lack of knowledge regarding the survey topic, or their lack of interest in the survey topic.

Summary

The methods used in gathering and analyzing information regarding the beliefs about dyslexia were fairly simple. Once proper approval was received from school district administration and email addresses were supplied, letters were sent with request for staff participation then surveys were sent. Participation was voluntary, which may have also contributed to the low return in responses. The completed surveys were analyzed using ANOVA and T-tests through the SPSS program which provided quality outputs for the results of the study. The results were then compared for differences based on the objectives of the study.

Chapter IV: Results

The purpose of this study was to identify beliefs about dyslexia among elementary education professionals in the Chippewa Valley. The replicated survey was used to specifically identify differences in beliefs based on tenure, gender, grade taught, where the degree was earned, and experience in teaching students with dyslexia. The items analysis gives a brief overview of the results of the survey then elaborates on each specific objective of the study which included the following:

1. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on how long they have taught.
2. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on the grade they teach.
3. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on demographic information such as gender and age.
4. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on having a reading specialist certificate.
5. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on having taught students with dyslexia.
6. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on feeling knowledgeable to teach students with dyslexia.

7. Identify differences in beliefs about dyslexia among Chippewa Valley elementary education staff based on the school from which they earned their teaching degree.
8. Identify overall beliefs about dyslexia among elementary education staff in the Chippewa Valley.

Item Analysis

The initial ten questions included in the survey focused on demographics. Subsequent questions consisted of the 30 statements regarding dyslexia. Tables 1 through 11show an overview of the results from the demographic questions regarding tenure, grades taught, gender, reading specialist certificate holders, age, whether they had knowingly taught children with dyslexia, whether they felt knowledgeable in teaching students with dyslexia, current positions, school districts taught in, and where undergraduate teaching degrees were earned from.

The survey produced a 19% response rate. Approximately 360 surveys were sent to professionals within the school districts included in the study. Of those who were sent the survey, 65 completed surveys were returned. A follow-up email was sent to the survey population reminding them to submit their completed survey. This follow-up yielded only two additional completed survey responses.

As shown in Table 1, ten or 15% of the respondents have taught for less than five years, while 21% have taught five to ten years, 63% have taught for more than ten years, and 1% noted this question was not applicable. Of the 63% who responded they have taught for more than 10 years, 74% indicated they did not feel knowledgeable in teaching

students with dyslexia. Sixty-two percent of those who have taught for more than 10 years also indicated that they had not knowingly taught children with dyslexia.

Table 1

Survey Demographics - Tenure

How long have you taught?	Less than 5 years	5 to 10 years	More than 10 years	Not applicable
Response	0	14	42	1

When considering the differences in beliefs based on the grade that survey respondents taught, Table 2 shows 10% taught kindergarten, 12% taught first grade, 10% taught second grade, 15% taught third grade, 10% taught fourth grade, 4% taught fifth grade, 13% taught special education, 19% taught courses of interest such as art, music, or physical education, and 4% responded this question was not applicable. A one-way t-test and ANOVA was completed to identify two statistically significant differences in beliefs based on grade taught, and then subsequent Tukey HSD procedures were used to specify where the differences existed. The two statements from the DBI found to be of significance based on a group of kindergarten to second grade, a group of third to fifth grade, and a group of other included: 1) The brains of individuals with dyslexia are different from those of people without dyslexia; 2) Individuals with dyslexia usually exhibit the same characteristics with similar degrees of severity.

Third to fifth grade teachers had conflicting beliefs about whether the brains of individuals with dyslexia are different from those of people without dyslexia. Of the 20

teachers in this group who responded to this survey statement, eight believed that this was false. The kindergarten to second grade group and the "other" group which included special education teachers and teachers of other subject matter did not have any significant discrepancies in responses.

The statement "individuals with dyslexia usually exhibit the same characteristics with similar degrees of severity" produced a combination of results in all three groups indicating a lack of clarity or uncertainty with a total of 33 believing it to be false and 34 believing it to be true. The first group of kindergarten to second grade teachers was evenly split with 11 responses of false and 11 responses of true. The second group had a small gap in differences with seven believing this statement to be false and 13 believing it to be true. The third group of other school personnel had a similar difference but reverse beliefs with 15 believing it to be false and 10 believing it to be true.

Table 2

Survey Demographics – Grade Taught

What grade do you teach?	Kindergarten	First	Second	Third	Fourth	Fifth	Special Education	Not Applicable	Other art, music, phy ed
Response	7	8	7	10	7	3	9	3	13

The third demographic question identified 16% of the respondents as male and 84% as female as shown in Table 3. Though 84% of the study participants were female, most beliefs about dyslexia on the DBI were found to be similar regardless of gender. Only two statistically significant differences based on the participant's gender were

discovered through the one-way t-test and ANOVA with equal variances being assumed. Male respondents had differing beliefs about the brains of individuals being different from those of people without dyslexia as well as about most educators being able to work competently with students with dyslexia after three to five hours of instruction.

Thirty-six percent of the male respondents believed the brains of individuals with dyslexia are different from those of people without dyslexia compared to 88% of the female participants responding this way. Similarly, 45% of male respondents believed that after three to five hours of instruction most educators can work competently with students with dyslexia as compared to 18% of female participants responding this way.

Table 3

Survey Demographics – Gender

What gender are you?	Male	Female
Response	11	56

As shown in Table 4, 4% of the study respondents indicated that they hold a reading specialist certificate. Having a reading specialist certificate did not cause any statistically significant differences in beliefs than those of their peers who did not hold a reading specialist certificate. It did prove to show some of the differences. In statements such as “an individual can be dyslexic and gifted,” “dyslexia is hereditary,” or “the brains of individuals with dyslexia are different from those of people without dyslexia” there seemed to be definitive differences in beliefs. However, the statement that “special education teachers, as well as general education teachers, receive intensive training to

work with students with dyslexia", all three respondents indicated that they know this is false.

Table 4

Survey Demographics – Reading Specialist Certificate

Do you hold a reading specialist certificate?	Yes	No
Response	3	64

When asking participants to identify their age, 4 or 6% revealed they were between the ages of twenty and twenty-five, 8 or 12% were between the ages of twenty-six and thirty, 3 or 4% were between the ages of thirty-one and thirty-five, 10 or 15% were between the ages of thirty-six and forty, 13 or 19% were between the ages of forty-one and forty-five, and 29 or 43% were over the age of forty-six as shown in Table 5. This demographic presented no statistically significant differences in beliefs about dyslexia.

Table 5

Survey Demographics – Age

What is your age?	20-25	26-30	31-35	36-40	41-45	46+
Response	4	8	3	10	13	29

In an effort to investigate teachers' beliefs when they had been exposed to children with dyslexia in a teaching environment, they were asked to identify if they had knowingly taught children with dyslexia. As shown in Table 6, 36% of the respondents indicated that they had knowingly taught children with dyslexia, 63% indicated that they had not, and 4% indicated that this was not applicable to them.

Table 6

Survey Demographics – Taught Children with Dyslexia

Have you knowingly taught children with dyslexia?	Yes	Percent	No	Percent	Not applicable
Response	22	36%	42	63%	3

A one-sample t-test was used to identify whether professionals who believed that they have knowingly taught children with dyslexia had statistically significant differences in beliefs than those who had not taught these students. A one-way ANOVA was then used to test and reveal the specific differences identified on the Dyslexia Belief Index (DBI). Those differences shown on Table 7 represent responses from all the survey respondents as well as those who felt they had taught students with dyslexia.

Of those who responded to the survey, 66% believed that dyslexia is not hereditary and 23% were those who indicated they had taught these individuals. It was also indicated by 22% of the total respondents, and 14% of those who felt they have taught students with dyslexia, that most educators could work competently after three to five hours of instruction with students who have dyslexia. Sixty-six percent of the

professionals who believed they had taught students with dyslexia also indicated they believe children with dyslexia are not more consistently impaired in phonemic awareness than any other ability. Thirty-four percent stated that individuals with dyslexia may comprehend a passage very well but be unable to pronounce words. The most profound statistic based upon those who believed they had taught students with dyslexia is that 41% of them indicated that they do not feel knowledgeable in teaching students with dyslexia.

Table 7

Beliefs of educators who taught students with dyslexia

Statement responded to	Total survey respondents stating "probably false" or "know it's false"	Respondents who felt they have taught children with dyslexia
Dyslexia is hereditary.	31%	23%
After three to five hours of instruction most educators can work competently with students who have dyslexia.	22%	14%
Children with dyslexia are more consistently impaired in phonemic awareness than any other ability	37%	66%

Individuals with dyslexia may comprehend a passage very well but be unable to pronounce words	66%	34%
Feel knowledgeable in teaching students with dyslexia.	76%	41%

Table 8 shows that 76% or 51 of the respondents did not feel knowledgeable teaching students with dyslexia leaving 24% or 16 respondents who did feel knowledgeable.

Table 8

Survey Demographics – Knowledgeable Teaching

Do you feel knowledgeable teaching students with dyslexia?	Yes	Percent	No	Percent
Response	16	24%	51	76%

Of those who responded to the eighth demographic question on the survey regarding what their current position in the school district was, 78% were teachers, 1% were paraprofessionals, 1% were principals, 7% were special education teachers, and 12% were noted as holding other positions in their school districts as shown on Table 9. This question was asked to gain a better understanding of who the survey respondents were rather than for statistical comparison.

Table 9

Survey Demographics – Current Position

What is your current position in the school district?	Teacher	Para	Secretary	Aide	Principal	Special Education Teacher	Substitute Teacher	Other
Response	52	1	0	0	1	5	0	8

Table 10 presents the ninth demographic question on the survey identifying what school district the participant worked in. Six percent of respondents were from the Bloomer school district, 15% were from the Colfax school district, 4% were from the Cornell school district, 12% were from the Elk Mound school district, 6% were from the Fall Creek school district, 36% were from the Menomonie school district, 6% were from the New Auburn school district, and 15% were from the Stanley school district.

Table 10

Survey Demographics – School District

What school district do you currently teach in?	Bloomer	Cadott	Colfax	Cornell	Elk Mound	Fall Creek	Menom-onie	New Auburn	Stanley-Boyd
Response	4	0	10	3	8	4	24	4	10

The final demographic question included on the survey asked participants to identify where they earned their undergraduate teaching degree. As shown on Table 11, of the respondents, 45% received their degree from the University of Wisconsin-Eau Claire, 22% earned their degree from the University of Wisconsin-Stout, and 33% earned their degree from various other universities within the United States. In relation to where a teaching degree was earned two beliefs were of statistical significance: 1) Dyslexia is hereditary and 2) Individuals with dyslexia may comprehend a passage very well but be unable to pronounce words.

Table 11

Survey Demographics – Degree

Where did you earn your undergraduate teaching degree?	University of Wisconsin - Stout	University of Wisconsin - Eau Claire	Other
Response	15	30	22

The results of the 30 statements on the Dyslexia Belief Index (DBI) from this replicated study are shown in Table 12. Participants were asked to read the questions then respond on the Likert scale of "know it's false", "probably false", "probably true", or "know it's true". Table 12 shows the response for each category as well as the total responses and the mean. The specific responses will be discussed in further detail in chapter five as they relate to the objectives of this study.

Table 12

Dyslexia Belief Index Results

Questions	Know it's False	Probably False	Probably True	Know it's True	Responses	Mean
Dyslexia is a learning disability that affects language.	8	13	32	14	67	2.78
People with dyslexia have below average intelligence.	50	15	1	1	67	1.30
Dyslexia can be managed by diet and/or exercise.	34	31	1	1	67	1.54
Individuals with dyslexia have trouble understanding the structure of language, especially phonics.	1	7	40	19	67	3.15
An individual can be dyslexic and gifted.	0	1	26	40	67	3.58
Physicians can prescribe medication to help dyslexia.	27	34	6	0	67	1.69
Dyslexia often affects writing and/or speaking abilities.	2	4	34	27	67	3.28

Multisensory instruction is absolutely necessary for student with dyslexia to learn.	4	5	41	17	67	3.06
In school, dyslexia only affects the student's performance in reading (not in math, social studies, etc.).	44	23	0	0	67	1.34
People with dyslexia often excel in science, music, art, and/or technical fields.	2	11	44	10	67	2.93
Dyslexia causes social, emotional, and/or family problems.	3	8	42	14	67	3.00
Most special education teachers receive intensive training to work with students with dyslexia.	16	34	16	1	67	2.03
Most regular education teachers receive intensive training to work with students with dyslexia.	48	19	0	0	67	1.28
Dyslexia is hereditary.	1	20	38	8	67	2.79

Dyslexia is caused by a poor home environment and/or poor reading instruction.	49	18	0	0	67	1.27
Giving students with dyslexia accommodations such as extra time on tests, shorter spelling lists, special seating, etc. is unfair to other students.	53	10	1	3	67	1.31
College students with dyslexia seldom do well in graduate school.	30	33	4	0	67	1.61
Most poor readers have dyslexia.	29	31	6	1	67	1.69
In school, classroom placement (e.g., special or general education) should be decided on an individual basis.	5	1	19	42	67	3.46
Students with dyslexia need structured, sequential, direct instruction in basic skills and learning strategies.	1	6	43	17	67	3.13

The brains of individuals with dyslexia are different from those of people without dyslexia.	2	12	42	11	67	2.93
Some students with mild dyslexia may not experience problems due to dyslexia until middle school or later.	2	11	47	7	67	2.88
Children with dyslexia are more consistently impaired in phonemic awareness (i.e., ability to hear and manipulate sounds in language) than any other ability.	1	24	33	9	67	2.75
Schools usually diagnose dyslexia through the administration of a nationally recognized standardized test.	16	31	15	5	67	2.13
Individuals with dyslexia are usually extremely poor spellers.	0	12	48	7	67	2.93

After three to five hours of instruction, most educators can work competently with students with dyslexia.	15	37	15	0	67	2.00
Individuals with dyslexia may comprehend a passage very well but be unable to pronounce words.	1	22	33	11	67	2.81
Individuals with dyslexia usually exhibit the same characteristics with similar degrees of severity.	12	21	31	3	67	2.37
Word reversal is the major criterion in the identification of dyslexia.	6	21	35	5	67	2.58
Individuals with dyslexia may pronounce words in a passage very well but be unable to comprehend it.	5	40	21	1	67	2.27

The findings from this survey provide insight about the beliefs and misperceptions about dyslexia as well as the survey respondents' perceived comfort in teaching students with dyslexia and will be concluded in Chapter 5.

Chapter V: Discussion

This study on beliefs about dyslexia among elementary education professionals in the Chippewa Valley of Wisconsin provided useful insight to the perceived awareness and readiness teachers felt. Though the response rate of 19% was low, a better understanding was gained about the misperceptions that exist among this population. The results of the survey demonstrate the many misperceptions that exist and the extent of the lack of awareness. Nearly 50% of the statements on the Dyslexia Belief Index survey received conflicting responses with at least a quarter of the participants responding differently on those statements.

Limitations

The purpose of this study was to use the Dyslexia Belief Index (DBI) to investigate the beliefs of professionals working within the elementary schools in the greater Chippewa Valley regarding dyslexia. In light of the three larger school districts not participating in the study, the proposed geographic area produced a smaller study population which yielded a lower than anticipated survey return. Although, statistically significant differences were found from the data collected in the 67 returned responses, this limited number of responses may have skewed the research. The poor response may be due to a number of reasons including the study participants having a perceived lack of information provided to them prior to the survey distribution, their perceived lack of time to complete the survey, their seeming lack of knowledge regarding the survey topic, or their lack of interest in the survey topic.

Conclusions

Dyslexia is often referred to as ambiguous and an invisible disability that beckons for clarification (Shaywitz, 2003; Vail, 2001). This study found reinforcing information to support that more work needs to be done in educating professionals who work with elementary age students who have dyslexia. Results of the study found that no statistically significant differences existed when considering tenure, but did exist with consideration to gender, grade taught, where the degree was earned, experience in teaching students with dyslexia, and whether the respondent felt knowledgeable in teaching students with dyslexia. Statistical significance was judged using a significance level of 0.05 and two-tailed tests where appropriate.

The first section of the survey was directed at obtaining demographic type information to be used in analyzing the differences in beliefs about dyslexia that exist. The second part of the survey was replicated from the Dyslexia Belief Index (DBI) created, validated, and used in the study about what educators really believe about dyslexia. This tool was created and utilized by Wadlington and Wadlington at a large, southern regional university's college of education. While many of the statements on the DBI did not show any statistically significant differences in beliefs about dyslexia based on tenure, gender, grade taught, where the degree was earned, and experience in teaching dyslexic students, there were a few notable differences found in multiple objectives.

With up to 20% of the population affected by some degree of dyslexia, it was staggering to discover that 76% of the survey respondents specified that they do not feel knowledgeable in teaching students with dyslexia which was further supported by the misperceptions they had regarding dyslexia. This became even more apparent when

looking at the overall conflicting beliefs about dyslexia. For those who indicated that they did not feel knowledgeable in teaching students with dyslexia, two statements in particular were divisive. Twenty-four indicated false for the statement "children with dyslexia are more consistently impaired in phonemic awareness than any other ability" while 27 indicated true. Similarly, 49% indicated false for the statement "individuals with dyslexia usually exhibit the same characteristics with similar degrees of severity" while 51% indicated true. Another 8 statements received equally conflicting responses.

Confusion around whether dyslexia is hereditary or not and if the brain of individuals with dyslexia are different than those individuals without dyslexia despite being supported strongly by science and research is cause for professional development that can alleviate these and multiple other misperceptions. The majority of the respondents to this survey have a significant amount of tenure in teaching which could indicate that they have a rich experience and exposure to teaching students with dyslexia. It could also indicate that they have greater awareness of dyslexia, therefore fewer misperceptions and greater knowledge in teaching those with dyslexia. This was not the case though. Interestingly, regardless of the tenure of a teacher, there were no statistically significant differences found concerning statements on the beliefs about dyslexia.

The amount of time of instruction that one may need to work competently with students with dyslexia was another misperception which was evident when considering gender as well as whether a professional believed they had previously taught a student with dyslexia. Additional professional development is necessary for educators to minimize the misperceptions identified in this study. Though professional development for an experienced educator may differ slightly from what a new educator may need

because of exposure to and experience with students in the field already, additional training is needed nonetheless.

Misperceptions identified soundly in the DBI statements on the Wadlington and Wadlington (2005) study, also identified in this study, included: a) Word reversal as a major criterion in the identification of dyslexia, b) Individuals with dyslexia usually exhibit the same characteristics with similar degrees of severity, c) It is not true that individuals with dyslexia may pronounce words in a passage very well but be unable to comprehend it, and d) Dyslexia is not hereditary. This study also identified four additional statements on the DBI that held significant misperceptions: a) Dyslexia is a learning disability that affects language, b) Children with dyslexia are more consistently impaired in phonemic awareness than any other ability, c) Schools usually diagnose dyslexia through the administration of a nationally recognized standardized test, d) Individuals with dyslexia may comprehend a passage very well but be unable to pronounce words. These are all statements about dyslexia that were misperceived and could be minimized through professional development given the research that has been done to support a better understanding of it.

Recommendations

This study, preceded by the Wadlington and Wadlington (2005) study on What Educators Really Believe About Dyslexia, reinforces the need for additional education and awareness to professionals who work with students with dyslexia. While the task of educating educators is usually left to the universities, this study shows that additional professional development is essential for those professionals already working in the field. This would mean that school administrators need to be proactive in seeking out and

providing resources such as videos, literature, information on continuing education at conferences, and even dyslexia simulations in order to assist their staff in feeling and being better prepared to teach students with dyslexia. This also means that teachers may need to be better self-advocates in requesting resources and information about dyslexia. This study should also serve as a beacon of what organizations like the International Dyslexia Association need to be more vigilant about in raising awareness and minimizing misperceptions among educators.

Regardless of how long they have taught, elementary education professionals who participated in the study had misperceptions that could have been potentially minimized through improved preparation by the universities. The investigation of what is taught in pre-service education programs, what is retained by students who enter the teaching field, and what coursework or training is utilized with their classroom students would be an area for further exploration. Identifying professionals working with students of any age and considering whether they believe their collegiate experience provided them with the skills, resources, and knowledge necessary for teaching students with dyslexia would be very interesting and provide a premise for teacher training programs to potentially modify their curriculum. It would also be interesting to look at this matter from a slightly different angle by considering whether students with dyslexia believe their educators were prepared to help them maneuver through the educational system.

The exploration as to why individuals perceive dyslexia the way they do, would also provide information worthy of studying. Knowing why could be even more beneficial and influential in making changes than just knowing what needs to be changed.

In consideration of the outcomes of this study, it is recommended that future research replicating this study or studies of a similar nature, consider personal contacts with the study population in an effort to improve response rates. Allowing for personal connections through a short presentation to the staff invited to participate may increase the completed surveys returned. It is also recommended that future studies consider the differences between professionals who are reading teachers as compared to those who have a reading specialist certificate. Because the study population was asked if they had knowingly taught students with dyslexia and if they felt knowledgeable in teaching students with dyslexia, it would also be interesting to learn whether they feel it is their responsibility to know how to teach children with dyslexia and if they rely on the special education teachers in their schools.

Consideration of a slightly different methodology may be beneficial for increasing the responses to the survey as well as allowing for further investigation. Utilizing focus groups or interviews may allow for more detailed responses to the survey questions. The researcher could ask for elaboration on questions or statements that have been of significance in prior studies.

A final recommendation for further research includes consideration of what a parent's role is in assisting their child as well as their child's teacher. To investigate from both the parent's perspective as well as the teacher's perspective could provide a better understanding of both viewpoints.

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Appendix A: Participation Invitation Letter

"This research has been approved by the UW-Stout IRB as required by the Code of Federal regulations Title 45 Part 46."

Tammy Tillotson
University of Wisconsin – Stout
Education Specialist Graduate Student
17343 49th Ave.
Chippewa falls, WI 54729
(715) 720-0448

November 11, 2009

Dear Elementary Education Staff,

My name is Tammy Tillotson and I am an Education Specialist Graduate student at the University of Wisconsin-Stout. I am writing in regard to a thesis project I am working on to identify the perceptions elementary education staff have regarding dyslexia.

For this project I am inviting all K-5 elementary education staff in the participating Chippewa Valley school districts, to participate in a short survey regarding your beliefs about dyslexia. The survey will consist of 30 questions to be answered on a 4 point Likert scale ("know it's false", "probably false", "probably true", or "know it's true") and 10 demographic type questions. The survey can be completed online and should take no longer than 15 minutes to finish.

The information gathered from this project will be compiled and used to identify any existing misperceptions about dyslexia. Then, ideally this project will raise awareness of dyslexia, which affects 1 in 5 people (International Dyslexia Association, 2007) as well as provide knowledge and opportunities for school districts to equip staff to work with this diverse population.

While this project is voluntary, I would like to encourage each of you to participate so that we get the richest possible information. If you prefer not to participate in this project, please email me at tillotsont@uwstout.edu or call me at (715) 720-0448. Surveys will be sent within two weeks unless noted otherwise. Thank you in advance for your participation. I look forward to learning more about your beliefs about dyslexia.

Warmest regards,

Tammy Tillotson

Appendix B: Informed Consent Form

Implied Consent to Participate In UW-Stout Approved Research

Title: Perceptions of dyslexia knowledge among elementary education teachers in the Chippewa Valley of Wisconsin

Investigator:

Tammy Tillotson, University of Wisconsin Stout Graduate Student
17343 49th Ave.
Chippewa Falls, WI 54729
(715)720-0448
tillotsont@uwstout.edu or tammyt1@charter.net

Research Sponsor:

Dr. Carol Mooney, Professor, University of Wisconsin Stout

Description:

The thesis project is to identify beliefs about dyslexia among elementary education teachers in the Chippewa Valley. By identifying the beliefs of elementary education teachers, strategies can then be developed to increase awareness of dyslexia as well as strategies for district administrators to utilize in assisting teachers in learning about dyslexia so that proper interventions can be implemented.

Risks and Benefits:

There are no identified risks associated with participating in this survey. The benefit of participating in this study is that the information gathered from this project will be compiled and used to address any misconceptions and inform programs that educate teachers.

Time Commitment and Payment:

The survey will consist of 40 questions that will be completed online and should take no longer than 20 minutes to finish. There is no financial compensation for participating.

Confidentiality:

Your name will not be included on any documents as the online survey system through UW Stout does not identify participant information when responding to the survey and provides advanced security and confidentiality by ensuring the results will be password protected, secured, and firewall protected. We do not believe that you can be identified from any of the statistical information.

Right to Withdraw:

Your participation in this study is entirely voluntary. You may choose not to participate without any adverse consequences to you. Should you choose to participate and later wish to withdraw from the study, you may discontinue your participation at that time by not completing the survey without incurring adverse consequences.

IRB Approval:

This study has been reviewed and approved by The University of Wisconsin-Stout's Institutional Review Board (IRB). The IRB has determined that this study meets the ethical obligations required by federal law and University policies. If you have questions or concerns regarding this study please contact the Investigator or Advisor. If you have any questions, concerns, or reports regarding your rights as a research subject, please contact the IRB Administrator.

Investigator: *Tammy Tillotson*
(715) 720-0448
tillotsont@uwstout.edu
or tammyt1@charter.net
Advisor: *Dr. Carol Mooney*
mooneyc@uwstout.edu

IRB Administrator
Sue Foxwell, Director, Research Services
152 Vocational Rehabilitation Bldg.
UW-Stout
Menomonie, WI 54751
715-232-2477 foxwells@uwstout.edu

Statement of Consent:

By participating in the survey, you are agreeing to the above consensual information for the project entitled, **Perceptions of dyslexia knowledge among elementary education teachers in the Chippewa Valley of Wisconsin.**

Appendix C: Pre-Survey Letter

"This research has been approved by the UW-Stout IRB as required by the Code of Federal regulations Title 45 Part 46."

Tammy Tillotson
University of Wisconsin – Stout
Education Specialist Graduate Student
17343 49th Ave.
Chippewa falls, WI 54729
(715) 720-0448

November 16, 2009

Dear Elementary Education Staff,

My name is Tammy Tillotson and I am an Education Specialist Graduate student at the University of Wisconsin-Stout. I am writing in regard to a thesis project I am working on to identify the perceptions elementary education staff have regarding dyslexia.

For this project I am inviting all K-5 elementary education staff in the participating Chippewa Valley school districts, to participate in a short survey regarding your beliefs about dyslexia. The survey will consist of 30 questions to be answered on a 4 point Likert scale ("know it's false", "probably false", "probably true", or "know it's true") and 10 demographic type questions. The survey can be completed online and should take no longer than 15 minutes to finish.

The information gathered from this project will be compiled and used to identify any existing misperceptions about dyslexia. Then, ideally this project will raise awareness of dyslexia, which affects 1 in 5 people (International Dyslexia Association, 2007) as well as provide knowledge and opportunities for school districts to equip staff to work with this diverse population.

While this project is voluntary, I would like to encourage each of you to participate so that we get the richest possible information. If you prefer not to participate in this project, please email me at tillotsont@uwstout.edu or call me at (715) 720-0448. Surveys will be sent within the week unless noted otherwise. Thank you in advance for your participation. I look forward to learning more about your beliefs about dyslexia.

Warmest regards,

Tammy Tillotson

Appendix D: Survey Letter

"This research has been approved by the UW-Stout IRB as required by the Code of Federal regulations Title 45 Part 46."

November 21, 2009

Dear Elementary Education Staff,

Thank you for voluntarily participating in this thesis project on identifying the perceptions elementary education staff has regarding dyslexia.

The project involves all K-5 elementary education staff in the participating Chippewa Valley school districts. The survey consists of 30 questions to be answered on a 4 point Likert scale ("know it's false", "probably false", "probably true", or "know it's true") and 10 demographic type questions. The survey can be completed online and should take no longer than 15 minutes to finish. **Just click the link below.**

Again, the information gathered from this project will be compiled and used to identify any existing misperceptions about dyslexia. Then, ideally will raise awareness of dyslexia as well as provide knowledge and opportunities for school districts to better equip staff to work with this diverse population.

If you have questions or prefer not to participate in this project, please email me at tillotsont@uwstout.edu or call me at (715) 720-0448. The survey link is below – just click and it should take you to the confidential survey site. Thank you for your participation. I look forward to learning more about your beliefs about dyslexia.

Warmest regards,

Tammy Tillotson

Appendix E: Survey

Demographics:

1. How long have you taught? **Less than 5 years, 5-10 years, More than 10 years**
2. Where did you earn your teaching undergraduate degree? **Drop down list including other**
3. What grade do you teach? **K, 1, 2, 3, 4, 5**
4. Gender? **Male, Female**
5. What district do you teach in currently? **Fill in blank**
6. Do you hold a reading specialist certificate? **Yes, No**
7. Identify your position in the school district: teacher, paraprofessional, aide, secretary, principal, special education teacher, substitute teacher, other. **Drop down list**
8. Age? **20-25 years, 25-30 years, 3-35 years, 35-40 years, 40-45 years, 45+ years**
9. Have you knowingly taught children with dyslexia? **Yes, No**
10. Do you feel knowledgeable in teaching students with dyslexia? **Yes, No**

Dyslexia Belief Index

1. Dyslexia is a learning disability that affects language processing.
2. People with dyslexia have below average intelligence.
3. Dyslexia can be managed by diet and/or exercise.
4. Individuals with dyslexia have trouble understanding the structure of language, especially phonics.
5. An individual can be dyslexic and gifted.
6. Physicians can prescribe medication to help dyslexia.
7. Dyslexia often affects writing and/or speaking abilities.
8. Multisensory instruction is absolutely necessary for student with dyslexia to learn.
9. In school, dyslexia only affects the student's performance in reading (not in math, social studies, etc.).
10. People with dyslexia often excel in science, music, art, and/or technical fields.
11. Dyslexia causes social, emotional, and/or family problems.
12. Most special education teachers receive intensive training to work with students with dyslexia.
13. Most regular education teachers receive intensive training to work with students with dyslexia.
14. Dyslexia is hereditary.
15. Dyslexia is caused by a poor home environment and/or poor reading instruction.
16. Giving students with dyslexia accommodations such as extra time on tests, shorter spelling lists, special seating, etc. in unfair to other students.
17. College students with dyslexia seldom do well in graduate school.
18. Most poor readers have dyslexia.
19. In school, classroom placement (e.g., special or general education) should be decided on an individual basis.

20. Students with dyslexia need structured, sequential, direct instruction in basic skills and learning strategies.
21. The brains of individuals with dyslexia are different from those of people without dyslexia.
22. Some students with mild dyslexia may not experience problems due to dyslexia until middle school or later.
23. Children with dyslexia are more consistently impaired in phonemic awareness (i.e., ability to hear and manipulate sounds in language) than any other ability.
24. Schools usually diagnose dyslexia through the administration of a nationally recognized standardized test.
25. Individuals with dyslexia are usually extremely poor spellers.
26. After three to five hours of instruction, most educators can work competently with students with dyslexia.
27. Individuals with dyslexia may comprehend a passage very well but be unable to pronounce words.
28. Individuals with dyslexia usually exhibit the same characteristics with similar degrees of severity.
29. Word reversal is the major criterion in the identification of dyslexia.
30. Individuals with dyslexia may pronounce words in a passage very well but be unable to comprehend it.

Likert Scale: 1=know it's false 2=probably false 3=probably true 4=know it's true

Appendix F: Follow-up Letter

"This research has been approved by the UW-Stout IRB as required by the Code of Federal regulations Title 45 Part 46."

November 25, 2009

Dear Elementary Education Staff,

Thank you for voluntarily participating in this thesis project on identifying the perceptions elementary education staff has regarding dyslexia. If you have already submitted your responses please disregard this letter. If not, I hope that you will take the time to do so now.

The project involves all K-5 elementary education staff in the participating Chippewa Valley school districts. The survey consists of 30 questions to be answered on a 4 point Likert scale ("know it's false", "probably false", "probably true", or "know it's true") and 10 demographic type questions. The survey can be completed online and should take no longer than 15 minutes to finish. **Just click the link below.**

Again, the information gathered from this project will be compiled and used to identify any existing misperceptions about dyslexia. Then, ideally will raise awareness of dyslexia as well as provide knowledge and opportunities for school districts to better equip staff to work with this diverse population.

If you have questions or prefer not to participate in this project, please email me at tillotsont@uwstout.edu or call me at (715) 720-0448. The survey link is below – just click and it should take you to the confidential survey site. Thank you for your participation. I look forward to learning more about your beliefs about dyslexia.

Warmest regards,

Tammy Tillotson

Appendix G: Wadlington Consent to Replicate

On Friday, October 16, 2009 8:40 PM, Tammy Tillotson wrote:

Date: Fri, 16 Oct 2009 20:40:09 -0500
From: Tammy Tillotson
To: <bwadlington@selu.edu>
cc: '"mooneyc"' <mooneyc@uwstout.edu>
Subject: Dyslexia Belief Study

Dr. Wadlington,

My name is Tammy Tillotson and I am a graduate student at the University of Wisconsin – Stout. I am in the midst of completing my Education Specialist Degree and have identified my field study to include beliefs around dyslexia among elementary education teachers in the greater Chippewa Valley of Wisconsin. In researching this topic, I found your study on this very topic with students preparing to be teachers. I am writing to ask if I might be able to use your Dyslexia Belief Index in my study. I would, of course, need to adapt the demographics piece but would very much like to use the 30 quantitative DBI questions and qualitative DBI questions.

My 8 year old son was diagnosed with dyslexia about 2 years ago but was not "far enough behind" in 1st grade to warrant any real support through our school district and I found that I would become his biggest advocate overnight. I have tried to educate myself, and others as I learn, about dyslexia and how we can better accommodate these children. My goal with this study is to increase awareness of what dyslexia is and how schools can better prepare for these students but also to identify those misconceptions among teachers so we can move toward increased knowledge, skills, and abilities among teachers working with children with dyslexia.

I hope that you will consider allowing me to use the DBI tool to further your initial research. I appreciate the thought, time, and effort that went into creating it.

Happy Autumn!

Tammy Tillotson

Dr. Wadlington's Response Sat 10/17/2009 8:46 AM with cc to pwadlington@birkman.com:

Tammy, we are still doing reliability/validity studies. Good luck to you. Please keep me posted on your research, BW

Elizabeth Wadlington, Ph.D.
Professor
bwadlington@selu.edu