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Dyslexia in Schools

Marcie Sienknecht

Northwestern College

A Literature Review Presented
in Partial Fulfillment of the Requirements
For the Degree of Master of Education

Table of Contents

Abstract.....	3
Dyslexia in Schools.....	4
History of Dyslexia.....	6
Theoretical Framework.....	7
Themes in Literature.....	8
Impacts on Students, Teachers, and School Districts.....	12
Legislation.....	17
Areas for Future Research.....	21
Application.....	23
Conclusion.....	26
References.....	28

Abstract

Teachers hold high importance in the development of students with dyslexia, especially in the area of beginning reading skills. Early diagnosis and intervention from highly effective teaching professionals plays a critical part in whether or not a student with dyslexia has success in learning to read. Teacher knowledge of dyslexia and a targeted intervention plan are keys to providing students with dyslexia the opportunity to learn and be successful in a variety of aspects: reading, spelling, writing, comprehension, fluency, and any other areas of learning. Students with dyslexia should be able to meet any and all benchmarks through grade level assessments if provided adequate instruction and structured intervention for dyslexia. All professionals involved in a dyslexic student's life should aspire to understand research and strive to create a solid learning environment that will foster student success. This literature review focuses on the presence of dyslexia in schools and the knowledge and misconceptions teachers have in meeting the needs of students with dyslexia or those that exhibit characteristics of dyslexia. The review looks at the history of dyslexia and the impacts it has on students, teachers, and school districts.

Keywords: dyslexia, reading intervention, early identification

Dyslexia in Schools

As school districts across the nation strive to meet student proficiency requirements there is an overwhelming amount of attention put on teachers and their competence level to teach early literacy skills to students (Nascimento, Rosal, & Queiroga, 2018). Equally important is the increased role of educational professionals to instruct and intervene with attaining reading proficiency in all students, especially the students that struggle in learning to read (Washburn, Mulcahy, Musante, & Joshi, 2017). This literature review will focus on the specific reading disability of dyslexia in schools. The history and definition of dyslexia will be presented along with opposing viewpoints or conflicts regarding dyslexia, how dyslexia impacts students, teachers, and school districts, areas of further research concerning dyslexia, and new and upcoming legislation. Ultimately, in order for proficiency levels to rise, all students must be provided high quality instruction from highly effective teachers that know how to support dyslexia in the classroom (Moats, 2009; Nascimento et al., 2018). In the case of dyslexia, this term must be well understood by teachers and school districts along with implementation of early evidence-based interventions (Ness & Southall, 2010; Youman & Mather, 2018). Enacting state and federal legislation in the areas of intervention, screening, and teacher training will be necessary if students with dyslexia are to achieve and maintain adequate proficiency levels (Youman & Mather, 2018) and teachers are to expand their knowledge about this specific learning disability.

Dyslexia has become an urgent topic over the last couple decades and many states are adopting legislation in an attempt to assist with the instruction and intervention of students with dyslexia as well as the deepening of knowledge for educational professionals. Across the U.S., 42 states have been initiating change by proposing and enacting laws specific to dyslexia in

education and more continue to follow (Ward-Lonergan & Duthie, 2018; Youman & Mather, 2018). These laws have come to fruition by the partnership of organizations like The National Center for Learning Disabilities and each state Decoding Dyslexia chapter (Ward-Lonergan & Duthie, 2018). Although legislation to push laws forward at the state and federal level remains slow-moving, the work being conducted for this process has been unwavering. Whether the legislation involves dyslexia initiatives, resolutions, handbooks, resource guides, or guidance provisions it all stands to bring more awareness to the public eye about the necessity of specific services for students with dyslexia in schools (Ward-Lonergan & Duthie, 2018). A major reason for clear legislation is the lack of training, guidance, and implementation plans many school districts and teachers have regarding dyslexia laws and policies (Phillips & Odegard, 2017; Worthy, Lammert, Salmeron, Godfrey, & Long, 2018; Youman & Mather, 2018).

Schools are the first institution likely to detect a lag in student reading skills (Nascimento et al., 2018; Ness & Southall, 2010). Ultimately it is the responsibility of the qualified teachers and resource personnel to use effective assessment, targeted instruction and intervention, and monitor student progress for improvement. Researchers (Washburn et al., 2017) advocate that possessing robust knowledge of how to instruct reading coupled with an accurate understanding and essence of reading difficulties are two underpinnings all teachers should bring into the profession. However, research has shown that teachers may have both knowledge and misconceptions about dyslexia as well as reading difficulties in general (Washburn, Joshi, & Binks-Cantrell, 2011b). This information will be vital to explore as it impacts teachers and school districts in being prepared to intently instruct and improve reading skills in all students.

History of Dyslexia

Early in the nineteenth century dyslexia was referred to as word-blindness, described as struggling with the recall of words and images that assist individuals with reading and writing (Mather & Wendling, 2012; Shaywitz, 2003). As early physicians studied more cases of word-blindness it was revealed that lesions on the brain contributed to the varying effects experienced by individuals with word-blindness, which soon became known as dyslexia (Shaywitz, 2003). Continual information was observed and word-blindness eventually split into two different forms: acquired and congenital (Mather & Wendling, 2012; Shaywitz, 2003). Acquired word-blindness surfaced in adults after a type of trauma in which they suddenly lost the ability to read, whereas, congenital word-blindness affected children as early as birth at a more gradual pace which affected the memory of words and letters and also had the potential of going unnoticed (Mather & Wendling, 2012; Shaywitz, 2003). Due to the early pioneers that studied word-blindness and dyslexia centuries ago, recent physicians, psychologists, educators, and various experts have forged ahead today and devoted ample time in studying and reporting about dyslexia across various countries (Mather & Wendling, 2012; Shaywitz, 2003). These professionals continue their quest with the hope of providing research-based findings to relay information concerning dyslexia.

Looking back into history, as research was published by Mather, Wendling, & Shaywitz (2012, 2003); it seems to parallel what is happening today. Over a century of research has been devoted to the study of dyslexia and extensive advances have been made to deepen overall understanding regarding this specific disorder (Ness & Southall, 2010) and other learning disabilities that focus on the skill of reading (Kilpatrick, 2015). Today, studies continue to evolve in understanding the educational aspects surrounding dyslexia (Mather & Wendling,

2012; Shaywitz, 2003). Each year, schools are under extreme pressure to improve proficiency levels, so individual student progress becomes one of importance. Using history and research jointly to help with this progression can offer extensive knowledge, direction, and targeted support to educational professionals leading this quest.

Theoretical Framework

When thinking about a framework of dyslexia in schools, two theories are presented. The first explains the Simple View of Reading (SVR) (Tunmer & Greaney, 2010) and the second involves educational professionals and their knowledge about the science of reading. The Simple View of Reading looks deeper into interpreting the areas that may be causing students to struggle in comprehending what they read (Colenbrander, Ricketts, & Breadmore, 2018). These deficiency areas fall into the categories of word recognition and oral language comprehension (Tunmer & Greaney, 2010). In order for educational professionals to match interventions to individual students that show less than adequate reading skills, pinpointing student shortfalls in specific categories will be important. Tunmer and Greaney (2010) explain how SVR splits into three areas of reading difficulties that can help educators coordinate intervention decisions. First, if students exhibit strength in word recognition but lag in oral language comprehension the intervention might focus around extra practice and more time to read. Conversely, if students show weak word recognition and strong oral comprehension this leans toward a reading disability such as dyslexia and would need an explicit intervention paired in the areas of phonological and phonemic awareness to increase alphabetic code skills. Finally, students with poor skills in both word recognition and oral language comprehension could quite possibly have a mixed range of difficulties that would require intervention in both phonological and oral language skills. Using the framework provided through SVR can provide guidance alongside

collaboration between professionals in providing individualized reading instruction and intervention to all students, especially those with dyslexia and other reading difficulties.

A second theory is one that leans toward the reading instruction of elementary students and the professionals that are conducting that instruction. Any individual pursuing a career as an educator needs to graduate from a collegiate program designated to its focus. However, a rising concern with new graduating teachers is how much explicit instruction they have received in the areas of understanding the English language, the makeup of words, and the science of reading which leads to the understanding of areas like morphology, orthography, and phonology (Mather & Wendling, 2012; Washi, Joshi, & Binks-Cantrell, 2011a). If teachers lack understanding in the science of reading and these structural areas it becomes difficult to attain the goal of successfully teaching all students in classrooms to read, especially those that struggle in the area of literacy, like students with dyslexia (Mather & Wendling, 2012). Moreover, it may be of interest to look deeper at the responsibility of the professors at the collegiate level instructing preservice teachers (White, Mather, & Kirkpatrick, 2020). This particular avenue leads to the idea of the Peter effect (Binks-Cantrell, Washburn, Joshi, & Hougen, 2012) believing that individuals are not able to give what they do not have. It is certainly worth the investigation into the depth of knowledge that professors hold in understanding the true science of reading as they instruct potential teachers in how to teach students to read.

Themes in Literature

As there are multiple themes discussed throughout literature in connection with dyslexia, three overarching issues stand out that aim to provide knowledge to schools in the area of dyslexia. The first one focuses on the early identification of dyslexia (Colenbrander et al., 2018; Ferrer et al., 2015; Washburn et al., 2017) centered on identifying students when they begin

school. Second, providing strong intervention techniques and strategies to increase student reading abilities (Colenbrander et al., 2018; Ness & Southall, 2010; Washburn et al., 2011b) once a shortfall in skills is identified. Finally is the need to increase teacher knowledge in the area of dyslexia including specific reading disabilities (Lyon & Weiser, 2009; Moats, 2009; Nascimento et al., 2018; Van den Hurk et al., 2017) so that knowledgeable, effective instructors can strengthen student skills. The presence of all three themes working in cooperation will increase the likelihood of students getting valuable ameliorative instruction (Ness & Southall, 2010). It would stand to reason that if schools are to see a boost in reading skills and scores of students within the lower reading band, improvement in all three of the aforementioned themes could assist with a potential upswing.

Early identification can present itself in different forms. According to Gimenez, Ortiz, Lopez-Zamora, Sanchez, & Luque (2017), one quick form is through investigating family history as it is known to run in families (Colenbrander et al., 2018; Mather & Wendling, 2012; Shaywitz, 2003) and could play a large role in examining students for dyslexia. As children enter school, an inquiry about family reading history, especially that of parents and siblings (Colenbrander et al., 2018) will provide early insight into the child's reading pathway which could alert an early intervention plan (Gimenez et al., 2017). Parents that are willing to share their own personal background in learning to read could speed up the process of identification so that schools can make appropriate decisions early on in a child's academic career. Additionally, early identification can come in the form of a universal screener for all new students. This screener will target needed skills in letter sound correspondence (Tunmer & Greaney, 2010), phonological awareness, letter knowledge, spoken language or hearing deficits (Colenbrander et al., 2018), and rhyming (Shaywitz, 2003) which all could be warning signs associated with future struggles

in learning to read (Gimenez et al., 2017). That is, upon a child entering preschool, appropriate assessment and intervention can be carried out for greater developmental opportunity immediately rather than waiting for students to fall behind (Youman & Mather, 2012). As research done by Ness and Southall (2010) found, a consistent achievement gap in students with dyslexia is noticeable even in first grade and in the event that this gap is not attended to students quite likely will never catch up to typical reading peers (Colenbrander et al., 2018). So whether or not early identification is done by using family background or screening procedures upon school entry, it is imperative that students having risk factors for reading delays be identified and intervened with in early grades. For years, Shaywitz (2003) has urged, the earlier this process happens for children, the better their chances are to modify brain pathways as young brains are more pliable and willing to be redirected.

Furthermore, in the year 1902, Hinshelwood (as cited by Mather & Wendling, 2012) shared the seriousness of identifying dyslexia in children early to provide not only assistance but also to ward off any negative emotional treatment in later years because of the deficit. Mather and Wendling agreed that a diagnosis of dyslexia can bring with it some aspects of emotional distress for students. Therefore, putting a stringent focus on the identification of dyslexia early in a student's educational career will provide ample opportunity in setting up the student for increased success in their future years (Colenbrander et al., 2018). As noted earlier, a gap in a dyslexic student's reading can present itself as early as first grade; however, what is more concerning is the gap rarely closes over the years when compared to typical reader growth (Ferrer et al., 2015; Mather & Wendling, 2012; Ness & Southall, 2010; Shaywitz, 2003). Ultimately, it is crucial for schools to lay out a plan to recognize risk factors, determine methods to use in early identification, and proceed with specific interventions (Colenbrander et al., 2018)

as students enter school. The more time that passes with no intervention the larger the deficit becomes while the chances of improvement diminish (Tunmer & Greaney, 2010).

As Colenbrander et al. (2018) advocate for early identification, they also found the need for it to work alongside targeted intervention and progress monitoring (Mather & Wendling, 2012) for effectiveness over time. The authors contend that with or without a diagnosis, any student struggling with acquiring reading skills should be served through specific intervention. Over the years schools have implemented a 3 tiered response to intervention (RTI) process that aims to intervene with students where needed (Mather & Wendling, 2012) as each tier gains intensity in intervention (Al Otaiba, Rouse, & Baker, 2018). As teachers and other professionals pinpoint these interventions it is important they remember that interventions are not specific to students with dyslexia but can assist all students in increasing reading abilities (Hogan, 2018) with correct placement. Additionally, it is crucial that any intervention program provided by an educational professional be well organized, explicit in instruction, and have connected progression (Al Otaiba et al., 2018). As RTI is not the only way to intervene, there are other areas of intervention that could provide missing skills to students with dyslexia as well. Al Otaiba et al., (2018) mentions additional interventions that can be code-focused that cover spelling and decoding skills, meaning-focused which cover language comprehension and vocabulary skills, or multisensory which include kinesthetic/tactile, visual, and auditory areas of instruction. In order for students to receive the high-quality instruction they deserve, it is essential that schools and education professionals select and monitor student interventions early on that are targeted for each student with a goal of producing growth in individual skill deficit areas. In order for this action to happen, it is the teachers that need to have deep knowledge and

understanding about literacy (Nascimento et al., 2018) and how to intervene with students that have dyslexia (Youman & Mather, 2018).

Equally as important as early identification and intervention is a need to increase teacher knowledge about dyslexia as well as literacy instruction in general. An area of concern is with the lack of teacher knowledge in the areas of basic language concepts, phonological awareness, morphology, and phonics, all which are needed to teach students to read (Mather & Wendling, 2012; Washburn et al., 2011a/b). This becomes not only a major concern for students with dyslexia but for all students within the classroom. As dyslexia is the top specific learning disability canvassing schools today (White et al., 2020) these students need explicit instruction in the areas of phonological awareness, phonemic awareness, and phonics in order to build a solid foundation with which to increase their quest in learning to read (Ness & Southall, 2010; White et al., 2020). If students with dyslexia are to attain proficiency in reading for a chance at future opportunities in education and employment it is teachers that carry the responsibility in assisting to make these opportunities become a reality. Needless to say, higher requirements are going to need to be put into place for both preservice and inservice teachers in order to assure deeper understanding of the constructs of language and literacy instruction (White et al., 2020).

Impacts on Students, Teachers, and School Districts

Historically, forward progression has been made in legislation of dyslexia laws and in impacting students, teachers, and school districts affected by dyslexia. At the same time, it is valuable for school districts and educational professionals to deepen their understanding of those impacts in order to fully recognize the need for change that comes from legislation and education in the area of dyslexia. First and foremost, dyslexia impacts students in profound ways depending upon time of diagnosis (Kong, 2012).

Both negative and positive aspects can surface in students diagnosed with dyslexia. Kong (2012) mentions these aspects can be dependent upon the diagnosis as well as the amount of assistance being provided. For example, a student identified early in their education has more time to understand and cope with their diagnosis (Battistutta, Commissaire, & Steffgen, 2018). Whereas a later identification can lead to student frustration, low self perception, behavioral concerns, and a lack in effort (Tunmer & Greaney, 2010). Additionally, Lipka, Lesaux, and Siegel (2006) found negative reactions in older students around social situations, and school activities not to mention later effects like depression, anxiety and self esteem issues (Kong, 2012). This information could lead to the idea that negative consequences could be long lasting for students if identification and targeted support is not happening early in a student's schooling. Ultimately, early identification could create a more positive aspect in how a student moves forward with their diagnosis in future years.

Young Kong's (2012) higher education study involved students that were diagnosed later in their college years, and it was noted that if students were taught how to embrace their diagnosis and build upon their strengths and work with their weaknesses they felt more confident and showed signs of increased competency, higher motivation to succeed, social success, and a general receptiveness to others (Battistutta et al., 2018). In comparison though, the study also found these same students experiencing feelings of anger and disappointment toward parents and teachers wondering why their dyslexia was not diagnosed sooner which could have led to better performance and access to more support in their younger years. Undoubtedly, by using studies like Young Kong's (2012), it is crucial that any individual involved in a student's life do what needs to be done in order to make sure high quality instruction and early intervention is the focus so future student success is obtained (Mather & Wendling, 2012; White et al., 2020; Youman &

Mather, 2018). Overall, in order to help keep diagnosed dyslexics progressing successfully, it is important that teachers continually monitor progress and offer support over the years as curriculum expands and deepens (Colenbrander et al., 2018).

There are two main impacts that affect teachers concerning dyslexia. First, there are many misconceptions held by teachers about dyslexia (Mather & Wendling, 2012; Ness & Southall, 2010; Washburn et al., 2017). Second and more importantly, is the knowledge held in providing high level instruction that increases reading skills not only in students with dyslexia, but all students (Reid Lyon & Weiser, 2009). Misconceptions concerning dyslexia have likely surfaced because of no agreed upon definition and the general use of the word without truly knowing the background (Mather & Wendling, 2012; Youman & Mather, 2012). According to researchers (Washburn et al., 2017; Ness & Southall, 2010) there are seven common misconceptions spread when discussing dyslexia: writing letters backwards, visual problems, boys being more likely to suffer from dyslexia than girls, it only affects English speaking students, colored overlays are a quick fix, students will outgrow dyslexia, and dyslexics will never be able to read. It becomes important to dismiss these common misconceptions through decades of research (Wadlington & Wadlington, 2005; Fletcher et al., 1999; Shaywitz, Shaywitz, Fletcher, & Escobar, 1990; Shaywitz et al., 2003) so teachers gain the correct knowledge concerning dyslexia.

Since students with dyslexia need to be taught using explicit instruction by highly qualified teachers (Moats, 2009) in the five scientific areas of reading (Drake & Walsh, 2020) that cover phonemic awareness, phonics, fluency, vocabulary, and reading comprehension (Washburn et al., 2011a/b) the focus shifts to college programs and what is being taught in the areas of dyslexia education as well as the general science of reading to aspiring teachers.

Recently released from the National Council on Teacher Quality (2020) was a report on the national findings of college programs that have improved in the area of adequately teaching the aforementioned five scientific areas of reading. Overall, from the report, 10 percent of its colleges nationwide have increased their focus in teaching scientifically based reading within their teacher programs; however, phonemic awareness and fluency were two areas that barely half of those programs showed adequate instruction. This is alarming in the area of dyslexia knowledge as phonemic awareness is one of the most important areas that dyslexics need quality intervention in (Al Otaiba et al., 2018). Nevertheless, the results of the report are promising that nationwide, colleges are currently adapting their teaching programs to fit the dire need of providing new teachers the high quality scientifically based knowledge needed to instruct all students in learning to read. Colleges must continue to do better in preparing new teachers to handle the increasing demands and necessary requirements in understanding literacy and how to teach it to all students, including dyslexics.

As colleges continue to improve their teacher preparation programs it is also important that school districts do their part to support their teachers, students, and families as well. Areas in which schools can create change are through their perception of the term dyslexia, making sure teachers gain access to deeper knowledge about dyslexia and learning disabilities, and follow through with complete legislation state requirements that are passed. In accomplishing these will become part of the positive change that needs to happen in the area of dyslexia. Although improvements have been made through legislation in using the word dyslexia, schools need to change their acceptance and use of it as well (Hogan, 2018; Mather & Wendling, 2012; Youman & Mather, 2012). In using the term dyslexia it is more likely that appropriate identification and treatment can be started (Hogan, 2018) and less tolerance of waiting for

students to fail to qualify for special education services (Youman & Mather, 2012). Rappolt-Schlichtmann, Boucher, & Evans (2018) mention the possibility of looking at dyslexia in the form of neurodiversity which puts the focus more on student strengths rather than their deficits. Because this term is a shift in thinking, it may become an area of further research as the authors mention, however; it may also benefit schools, teachers, and students in moving to a more strength based instructional plan when referring to dyslexia instead of the standard negative association.

Since teachers are the ones working with students that have dyslexia it is imperative that they gain a deeper knowledge of instructing those with dyslexia and learning disabilities (Nascimento et al., 2018). Schools should provide added training opportunities for all professional staff (psychologists, teachers, speech and language pathologists, coaches, etc) through various workshops (Nascimento et al., 2018), professional development opportunities (Washburn et al., 2011), and various teaching methods aimed at how to instruct students with deficits. For example, a study (Thompson et al., 2018) with upper grades (4th-6th) has shown that when explicitly taught, students with dyslexia benefit from using combined methods of language instruction, hope stories: to build social-emotional well-being, these are stories of individuals that were not successful in school but were successful later in their lives, and language-based computer coding and programming: engaging, student-centered learning. Thus, if schools provide avenues for teachers to utilize various methods in reaching students, this investment could pay off by way of increased student motivation and growth (Nascimento et al., 2018; Thompson et al., 2018).

Lastly, it is imperative that teachers are trained in how to correctly carry out intervention strategies for students with dyslexia, and much of that falls on school districts (Youman &

Mather, 2018). There is not time to wait and see if students fail or exhibit problems in reading, Ferrer et al., (2015) gathered that the achievement gap can at times already show itself at first grade and schools need to have a plan in place to intervene so this gap does not continue over the years. Schools commonly use an instructional process involving three different tiers called Response to Intervention (RTI) intended to track student progress. However, this structure allows grouping and instructing students together as a whole rather than based on individual needs (Mather & Wendling, 2012). Students with dyslexia need attention to their individual skill deficits and RTI, if not tracked and monitored correctly, can put these students in a holding pattern that can delay their opportunity for diagnosis or specialized intervention for their individual needs (Ferrer et al., 2015; Mather & Wendling, 2012; Youman & Mather, 2018). For schools, because dyslexia legislation is being passed at both the state and federal level, administration must make sure they are setting up and following through on laws to identify and intervene with students that have dyslexia in their schools (Youman & Mather, 2018). The laws are passed with the idea that schools will follow what has been written so it is essential that all legislation is taken seriously by all school districts.

Legislation

As dyslexia laws are continually proposed to state legislators in an effort to raise awareness of dyslexia, it is important to provide meaning to the word 'dyslexia'. Although there has not been one agreed upon definition of dyslexia as of yet (Phillips & Odegard, 2017), the International Dyslexia Association (IDA, 2002) has formulated a definition that remains noted by many professionals, researchers, and the National Institute of Child Health and Human Development (Ward-Lonergan & Duthie, 2018) that finds dyslexia as a neurobiological disability that makes learning to read difficult and is characterized by language deficits and low

phonological, decoding, and spelling skills. Eventually, the idea of developing an agreed upon definition of dyslexia could affect both laws and identification rates in schools.

Currently, at the federal level, the Individuals with Disabilities Education Act (IDEA) continues to be utilized in providing special education services to students (Ward-Lonergan & Duthie, 2018). However, the term dyslexia has never been specifically mentioned in the Act as it has been covered under the specific learning disability (SLD) category. It is important to note that because of this there has been considerable variance among states in providing special education services to students with disabilities such as dyslexia (Ward-Lonergan & Duthie, 2018). Also, in February 2016, The Bipartisan Congressional Dyslexia Caucus presented The Research Excellence and Advancements for Dyslexia Act (READ Act) which requires a presidential request to Congress each year for a line item allocating dollars set aside for research on disabilities including dyslexia by the National Science Foundation (Ward-Lonergan & Duthie, 2018; Youman & Mather, 2018). Although this is a positive advancement for dyslexia research, results will take time to compile, publish, and apply (Youman & Mather, 2018). Even so, individual states across the nation incessantly forge ahead with legislation proposals and initiatives in order to increase the rights of those with dyslexia (Ward-Lonergan & Duthie, 2018).

Notably, at the state level these proposals and initiatives are aimed at increasing dyslexia awareness, providing dyslexia screening procedures for all schools, pushing for quality interventions and accommodations for students with dyslexia, and requiring professional training for teachers surrounding dyslexia as well as hiring dyslexia specialists (Phillips & Odegard, 2017; Ward-Lonergan & Duthie, 2018; Youman &

Mather, 2018). For example, an update released in 2018 by Youman and Mather informed that 18 states have either adopted or are piloting universal screening measures to help identify students at risk for dyslexia. Furthermore, the same update found that 17 states have laid out a procedural process for interventions that assist students with dyslexia. All of these strides are proof that legislation involving dyslexia is moving in the right direction not only for students and parents but for teachers and schools as well. Just as important though will be the process of monitoring legislation so that it follows the science of dyslexia and shows definitive and effective outcomes (Phillips & Odegard, 2017).

This movement has been driven by parents that started an organization called Decoding Dyslexia which began in 2011 (Ward-Lonergan & Duthie, 2018) and has a presence in each state. Each state organization strongly advocates for students with dyslexia and their families in the areas of gaining a universal definition for the understanding of dyslexia, mandating teacher trainings, screenings, and remediation processes, and permitting all students with dyslexia access to assistive technology for reading and writing (Decoding Dyslexia, 2013; Ward-Lonergan & Duthie, 2018). This movement has proved to be a valuable resource for many parents and educators in understanding the characteristics of dyslexia in children. Decoding Dyslexia is visible through social media, various support groups for parents and caregivers, awareness events and conferences, while also advocating for legislation concerning dyslexia in schools (Decoding Dyslexia Iowa, 2018). For example, because of their combined efforts with various stakeholders, in 2018 Iowa legislators enacted a Dyslexia Task Force to study dyslexia in Iowa and investigate current practices, concerns, and recommendations (Dyslexia Task Force, n.d.) This Task Force has completed their work which is currently awaiting review and action with

Iowa legislators in spring 2020. Moreover, it is the devoted time and effort that the Decoding Dyslexia organization has provided to families and students in getting assistance and support with the many challenges in learning how to cope with dyslexia and its many characteristics.

Opposing Viewpoints or Conflicts

As with any research topic there are always opposing viewpoints or conflicts that accompany it. An opposing viewpoint that warrants additional attention is to switch typical deficit thinking about dyslexia to a strength based approach (Rappolt-Schlichtmann et al., 2018). This way of thinking builds on the strengths of the dyslexic rather than focuses on their shortfalls. When teachers focus on student deficiencies, students tend to formulate limitations about their own learning and what they think they can and cannot accomplish. However, in focusing on the aspect of neurodiversity it allows for acceptance of one's individuality through deficits while developing on strengths that will aim to provide additional life opportunities for students further down the road (Akhtar & Jaswal, 2013). Rappolt-Schlichtmann et al., (2018) go on to mention that in order to do this, there are no materials or special skills needed, it only requires a change in how one looks at intervening with students.

Another conflict heard by various individuals in the educational profession is that there is no consensus in characteristics that definitively define a student with dyslexia from a typical student that struggles with reading deficits (Worthy et al., 2018). In a teacher interview study done by Worthy et al., (2018), educators wonder about abandoning the term dyslexia altogether while focusing more specifically on individual student needs which advocate for providing all students, dyslexic or not, the individualized services needed to be successful. Although a teacher being responsible for teaching all students in their classroom is an inspiring idea, a 2018 study done by White, Mather, and Kirkpatrick showed that questioned education majors have limited

knowledge about not only recognizing dyslexia but providing instruction to those with dyslexia as well. Additionally, this study found that both general and special education teachers only felt moderately responsible for instructing students with dyslexia, whereas they each thought the other should be the primary instructor. As these types of studies lead to the lack of knowledge and understanding concerning dyslexia, it is crucial that these types of conflicts be resolved to lead to more targeted and successful instruction for students with dyslexia.

One final conflict that surfaces from teachers as more legislation is passed is the lack of joint communication about dyslexia between research and practice (White et al., 2020). Lopes (2012) found that many of the top dyslexia researchers over the decades are connected to the medical field, while gaining perspectives or input from personnel in the educational field is rather scant. Also, interviews with teachers have found that they would welcome and engage in conversations surrounding dyslexia to develop their knowledge, learn from research, and discuss legislation (Worthy et al., 2018). Gabriel (2018) agrees that an increase in communication between educational personnel and researchers will bring about growth and understanding from one another for the sake of teaching children how to read. Gabriel also argues that constructing this bridge of knowledge will further allow educational professionals the ability to support all students and make necessary instructional decisions.

Areas for Future Research

Although dyslexia is not a new topic in research, it is likely that when studies are carried out there are more questions than answers in the end which opens up areas for further exploration. One further research area that would provide more evidence toward teacher knowledge about dyslexia is to track education majors as they transition from college student to teacher (Worthy et al., 2018). Knowing more about how novice teachers begin their new

teaching role and navigating the struggles that will present themselves in teaching students how to read will yield additional data in how college programs have prepared new teachers.

Observational data could be used within classroom instruction as well as interviews with various educational personnel (Washburn et al., 2017) that teach students how to read. In the same sense, a study that connects teacher knowledge of the science of reading with the knowledge of dyslexia may show how they both are needed in teaching all students how to read (Washburn et al., 2011a).

Additionally, extra research would be helpful in evaluating how schools are following through with meeting the criteria concerning new dyslexia laws that have been passed (Worthy et al., 2018). Ideas could revolve around what steps districts have put in place to meet the criteria of state dyslexia laws and what results they are getting from those laws. Similarly, another area of further research could involve comparing states that have dyslexia laws to states that do not have dyslexia laws yet (Washburn et al., 2017). That comparison may reveal some useful data in how laws are performing in the area of dyslexia screening, awareness, and instruction versus states without any laws.

Finally, further research would be beneficial in the area of neurodiversity when discussing dyslexia. While dyslexia is currently looked at through a more deficit lens, neurodiversity looks to be more of a strength based approach which focuses on building what students can do within other areas (Rappolt-Schlichtmann et al., 2018). Although studies in the area of neurodiversity are not large at this time, it warrants extra research in order to expand information that may lead to instructing and developing dyslexics vast areas of strength and interest rather than potentially limiting their future by labels assigned to them according to deficits early on in school that could possibly hinder their future.

Application

While gaining more information about dyslexia and working with students that struggle to read, the questions that continue to cross my mind on a daily basis are: What more can I be doing to help the multiple frustrated students that so desperately want to learn to read but are met with multiple challenges each and every day and, how many of these students could possibly be dyslexic and my instruction just is not matching what they need. After reviewing multiple research studies a couple ideas surface of how I can help with the continual struggle of low student reading proficiency in schools. First off, and most important to me, is to increase my depth of knowledge about dyslexia and share that knowledge with others. Attending professional development in the area of dyslexia from informed professionals, reading updated research studies and professional books, and accessing current online resources with scientifically based information concerning students with dyslexia will be ways I can expand my knowledge in order to better assist the students I work with daily. Devoting my time through these measures will help me not only deepen my knowledge but also focus my attention on those that need it the most: students and other teachers just like me.

Additionally, working in schools, there is a culture to assess students continually and find proper placement for each individual student. It was alarming to read the studies that show a lack of knowledge and responsibility in teaching struggling readers from preservice and inservice teachers (Ness & Southall, 2010; Washburn et al., 2011a/b; White et al., 2020). It is not sufficient that any teacher pass the responsibility of teaching students to read on to another educational professional. In becoming more educated about dyslexia and teaching reading to those who struggle to read I hope to share much needed information with other educators so everyone can learn together. However, in order for students to actually be placed with the

correct intervention it is the responsibility of the educational professionals to obtain precise knowledge about not only student assessments being administered but also the background of the science of learning to read as well as the disabilities that can accompany it (Kilpatrick, 2015). In order to grapple with my own understanding and perceptions of assessments I will use the detailed information Kilpatrick offers about student phonological processing skills through specific assessments. My focus will be to utilize and deepen understanding of student reading difficulties by administering and analyzing various assessments shared in his book. Presented information will allow me to gain perspective from these assessments that will challenge my own knowledge of reading instruction and how best to assist struggling students in learning to read. This process will enhance my own understanding of how I have taught students to read over the years and challenge me to look hard at my own practice and work to deepen not only my own understanding about reading but also the understanding of others.

Finally, another way I will apply this knowledge is to utilize the vast training and experience in speech and language pathologists (SLP) associated with schools. Through this research, many studies have pointed to SLP's within schools that teachers may overlook in helping to identify, assess, intervene, and offer general support to students that struggle with reading (Ward-Lonergan & Duthie, 2018). SLP's are well trained in the areas of spoken language and can at times be the first trained professionals that notice issues in student language development (Hogan, 2018). Assembling a team of professionals in schools that involve teachers, reading specialists, speech and language pathologists, school psychologists, and principals can unite multiple areas of expertise and knowledge to create a successful learning environment for all students. As dyslexia awareness expands across the nation it will be beneficial for me to utilize every professional avenue when assisting students in learning to read.

This collaboration with other professionals can bring about a confidence that will help move our profession forward through the challenge of ensuring that every child will learn to read.

Conclusion

In conclusion, as dyslexia is quickly becoming of national interest there is a strong need for schools to implement universal screening and intervention policies (Youman & Mather, 2018; White et al., 2020) that will target and monitor student reading skills early on. There is and will continue to be scientifically based knowledge concerning students and families that struggle with dyslexia. The action that needs to transpire is within schools in their focus and determination to narrow the reading gap for individuals with dyslexia by implementing universal screening and intervention procedures for all students (White et al., 2020). Furthermore, noting that teachers are the primary leaders in focusing student instruction, using the Simple View of Reading framework (Kilpatrick, 2015) offers an organization that allows the separation of two components: decoding and linguistic comprehension, that can be further broken down to target specific skill deficiencies for intervention. Once policies and procedures are put into place it will allow for a cycle of support and assistance to begin and continue for all students who show a lag in reading skills. The benefit of starting this process as soon as students enter school is the continuation of monitoring skills beyond elementary (Colenbrander et al., 2018) to catch any further deficits that may arise in future years.

Moreover, student instruction should come from highly effective and knowledgeable teachers (Mather & Wendling, 2012; Youman & Mather, 2012). In order to improve the knowledge base surrounding dyslexia in schools it will be imperative that educational professionals and researchers communicate and partner with individuals that are involved heavily with dyslexia: parents, organizations, and certainly dyslexics themselves. This interaction will allow everyone to learn and grow in knowledge together for the benefit of all involved so that solid policies and interventions are built to promote growth for all students that

struggle in learning to read (Worthy et al., 2018). Likewise, whether teachers are in their preservice or inservice years, they need to be informed and prepared in how to recognize and assist with dyslexia; an effort that involves both collegiate level instruction as well as professional development through school districts. The more instruction about dyslexia that is presented to aspiring teachers in college and offered as professional development in school districts to inservice teachers will influence educators to assume responsibility when instructing students that struggle to read (White et al., 2020). Perhaps this issue becomes less about who is considered dyslexic and more about professionals becoming more informed and educated in how to meet the needs of all students where they are at. Although various teachers may admit to not being prepared to teach students with dyslexia, through additional training the needs of these students can be met (Worthy et al., 2018).

Legislation about dyslexia is gaining momentum across the nation as new initiatives, resolutions, handbooks, resource guides, and guidance provisions are adopted and discussed (Ward-Lonergan & Duthie, 2018). Youman and Mather (2018) explain that the large focus for dyslexia laws stands on the rights of those with dyslexia while also providing insight to others in an effort to widen overall understanding and action on the topic of dyslexia. After all, educational professionals are aware that more students struggle with learning to read, not just those with dyslexia. Using new dyslexia legislation as a platform, educators can use it to expand learning opportunities that will increase both understanding and instructional strategies that could raise reading performance in all students.

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