The past year has been important for individuals with dyslexia and for those in positions of advocacy. On October 23, 2015, just five days before the International Dyslexia Association’s (IDA) annual conference meeting, the U.S. Office of Special Education and Rehabilitative Services (OSERS) released a policy guidance letter on dyslexia to state and local education agencies. In this letter, OSERS noted that “there is nothing in the Individuals with Disabilities Education Act (IDEA, 2004) that would prohibit the use of the terms dyslexia, dyscalculia, and dysgraphia in IDEA evaluation, eligibility determinations, or IEP (individualized education program) documents” (Yudin, 2015, p. 1). Three days after the release of the policy guidance letter, the U.S. House of Representatives approved the Research Excellence and Advancements for Dyslexia Act (READ Act, 2015). The READ Act was passed into law on February 18, 2016, and requires the National Science Foundation to allocate at least $5 million annually to dyslexia research. Furthermore, in a recent Perspectives article, Youman and Mather (2015) noted that more than half of the states in the U.S. have enacted dyslexia laws and a growing number of states have dyslexia initiatives and resolutions to promote dyslexia awareness in K–12 settings (see Youman & Mather, 2015 for a full list).

Recent federal guidelines, research initiatives, and a push for state laws outlining expectations for dyslexia awareness are steps in the right direction to ensuring that all individuals, including those with dyslexia, are provided with access to research-based reading instruction. Given this impetus, we believe it is vital to understand the current knowledge base of teachers, teacher educators, and teacher candidates regarding research-based reading concepts and dyslexia.

In this article, we aim to do two things: (a) present an overview of the existing research base on teacher knowledge of reading-related concepts and dyslexia, and (b) provide suggestions for ways the IDA community can help bridge the gap across dyslexia research, teacher preparation and professional development, and advocacy.

Importance of Teacher Knowledge

Authors of various research syntheses have indicated that teacher knowledge plays an important role in children and adolescents receiving effective reading instruction (International Reading Association, 2010; Kamil et al., 2008; Snow, Burns, & Griffin, 1998; Snow, Griffin, & Burns, 2005). This knowledge, often referred to as content or disciplinary knowledge (Shulman, 1987), has been defined as the knowledge needed to teach a particular subject or content area (e.g., reading). Another concept associated with teacher knowledge is pedagogical content knowledge or the intersection between a teacher’s knowledge of a concept, subject, topic or field (e.g., reading) and the ways in which a teacher uses his/her knowledge to teach that concept (Shulman, 1987). Investigations of reading-related concepts and pedagogical content knowledge have included the examination of educators (general and special) teaching in the early or elementary grades (K–5). These investigations have yielded an understanding that teachers, on average, display knowledge and skill related to certain concepts (phonological awareness such as syllable counting) (Binks-Cantrell, Joshi, & Washburn, 2012; Washburn, Joshi, & Binks-Cantrell, 2011a), but lack knowledge about other reading-related concepts (phonemic awareness, phonics generalizations, and morphology) (Cheesman, McGuire, Shankweiler, & Coyne, 2009; Moats, 1994; Spear-Swerling, 2009). Within this body of research, researchers have reported a relation between teacher knowledge of reading-related concepts and student performance (Lane et al., 2008; McCutchen et al., 2002; Piasta, Connor, Fishman, & Morrison, 2009). For example, Piasta et al. (2009) reported that teachers who demonstrated greater knowledge of reading-related concepts and engaged in more explicit reading instruction had students who, on average, scored higher on...
tests of reading achievement than teachers who were less knowledgeable. Further, researchers have found that when teachers are provided with opportunities to learn and use these concepts (e.g., through coursework in teacher preparation or in professional development) knowledge can positively impact student achievement (Al Otaiba & Lake 2007; Podhajski, Mather, Nathan, & Sammons, 2009; Spear-Swerling, 2009).

In response to this body of research, IDA authored a set of comprehensive standards titled, Knowledge and Practice Standards for Teachers of Reading, “to guide the preparation, certification, and professional development of those who teach reading and related literacy skills in the classroom or other settings” (IDA, 2010, p. 2). Within this set of standards there is a subset for classroom teachers and a subset for dyslexia specialists that outline knowledge, practical skills, and practicum experience related to foundation concepts, knowledge of language structure, the principles of structured language teaching, administration and interpretation of assessments, knowledge of dyslexia and other learning disorders, and ethical standards for the profession. (See http://dyslexiaida.org/knowledge-and-practices/ to view the standards.) In addition to serving as a guide for the preparation and education of teachers, the standards are used as the basis for IDA’s university accreditation program. To date, IDA has accredited 25 Institutions of Higher Education (IHEs) for programs that meet the standards (For a full list see http://dyslexiaida.org/university-programs-accredited-by-ida/).

What Do Teachers Know About Dyslexia?

Though IDA has developed knowledge and practice standards that outline what educators should know about dyslexia, few studies have been published that have investigated teacher knowledge of dyslexia. To date, we have identified six published studies that have examined teacher knowledge of dyslexia (Allington, 1982; Ness & Southall, 2010; Wadlington & Wadlington, 2005; Washburn, Joshi, & Binks-Cantrell, 2011a, 2011b; Washburn, Binks-Cantrell, & Joshi, 2014). One of the earliest studies to measure teachers’ knowledge and perceptions of the characteristics and causes of dyslexia was published by Allington in 1982. Allington reported that the majority of teachers he surveyed believed children experienced persistent problems acquiring basic reading skills because of deficits in visual perception. Allington quoted Lefton (1978) in support for the lack of evidence behind the visual deficit hypothesis by stating: “we should disregard the notion of perceptual deficits … reading disabled children make errors, but not because they cannot discriminate letters” (p. 233 as cited in Allington, 1982). Although the role of visual perception in dyslexia has been explored and theorized by researchers (Vellutino, Fletcher, Snowling, & Scanlon, 2004), it is currently understood that reading difficulties are associated with phonological processing, not visual deficits.

Two decades later, Wadlington and Wadlington (2005) examined the knowledge and beliefs of 250 participants from a college of education at a large university in the Southeast. Participants included preservice teachers, teacher educators, graduate-level inservice teachers, and teachers enrolled in a K–12 administration preparation program. To measure knowledge and beliefs, Wadlington and Wadlington developed a 30-item questionnaire, the Dyslexia Belief Index, that contained statements about the origin, nature, treatment, school environment, and impact of dyslexia. Participants were asked to rate their beliefs on a Likert scale with four possible options (know it is false, probably false, probably true, know it is true). Wadlington and Wadlington reported that the majority of participants inaccurately believed word reversal is the main criterion in diagnosing dyslexia. On the other hand, participants in that study also demonstrated accurate knowledge of dyslexia concerning the separation between intelligence and dyslexia and that one’s home literacy environment is independent of dyslexia. More recently, Ness and Southall (2010) also found that preservice teachers had both accurate knowledge as well as misconceptions about dyslexia. When asked to define dyslexia, 30% of participants indicated that dyslexia was a reading disability. However, 74% responded with letter reversal as the hallmark characteristic of dyslexia.

In our own work, we, like the authors of previous studies, have found preservice and inservice teachers hold both accurate knowledge and misconceptions about dyslexia. In two studies using a survey on teacher knowledge of basic language constructs (Washburn et al., 2011a, 2011b), we asked preservice and inservice teachers to indicate their understanding of five true and false statements about characteristics and treatment of dyslexia. In both studies we found the majority of preservice and inservice teachers understood that individuals with dyslexia often experience difficulty with language-based activities (decoding, spelling), but an overwhelming majority of teachers indicated that colored overlays and/or tinted lenses would help individuals with dyslexia. Similar to Allington’s study, we found that teachers held the misconception that dyslexia is a result of a visual perception deficit.

Researchers have found preservice and inservice teachers hold both accurate knowledge and misconceptions about dyslexia.

In our most recently published work, we expanded our investigation to England to examine what English and American preservice teachers knew about dyslexia. We chose to investigate these two groups in light of the research review written by Sir Jim Rose titled “Identifying and Teaching Children and Young People with Dyslexia and Literacy Difficulties” (Rose, 2009). This report, often referred to informally as the “Rose Report on Dyslexia,” was an independent research review from Rose to the Secretary of State for Children. It defined dyslexia, discussed research-informed recommendations for
the identification and intervention processes for school-aged children with dyslexia and reading difficulties, and made recommendations for teacher training and the education of inservice teachers. Specifically the recommendations for teacher training and professional development hinged on the notion that “the quality of an education system cannot exceed the quality of its teachers” (p. 15, Barber & Mourshed, 2007, as cited in Rose, 2009). Therefore, Rose recommended that all teachers need to be provided with some level of training to support teachers’ understanding of dyslexia, from an updated research perspective, through either initial teaching training programs or professional development. Rose also recommended that Local Education Authorities identify and train specialists to work specifically with children or young people with dyslexia.

Noting the significance of this report, we surveyed 101 preservice teachers from the U.S. and 70 from England. Both groups of preservice teachers were in teacher preparation programs to teach students in elementary or primary grades in a general education setting. We wanted to know what both groups knew about the characteristics of dyslexia and whether or not these two groups had a similar knowledge base. The survey we used was modeled after the Dyslexia Belief Index (Wadlington & Wadlington, 2005) and like our earlier studies (Washburn et al., 2011a, 2011b) included 19 items that reflected both accurate understandings of the characteristics of dyslexia and misconceptions about dyslexia (see Washburn, Binks-Cantrell, & Joshi, 2014 for all survey items).

Analyses revealed that U.S. and English preservice teachers had similar knowledge on eight of the 19 items and dissimilar knowledge on 11 items. Both groups of preservice teachers identified that dyslexia can affect a student’s spelling, that dyslexia is not caused by difficulties with visual problems. However, both groups of preservice teachers also reported that colored overlays or tinted glasses and eye-tracking exercises could be helpful in remediating dyslexia. U.S. and English preservice teachers also differed on items that tapped both accurate understandings of dyslexia and misconceptions. Some differences, however, were greater than others. With regard to accurate understandings of dyslexia, a significantly higher number of U.S. preservice teachers (77%) than English preservice teachers (44%) indicated that language processing is an area of difficulty for individuals with dyslexia. Further, 97% of English preservice teachers indicated that children can outgrow dyslexia whereas 39% of U.S. preservice teachers indicated the same response. There were also smaller differences. For example, 97% of U.S. teachers and 92% of English preservice teachers indicated that letter reversal is the main marker of dyslexia.

This study, though small in relation, revealed that preservice teachers regardless of context hold both accurate understandings and misconceptions. (It should be noted that the Rose Report had been released less than a year prior to the data collection. Therefore, if we were to replicate the study now, we presume that teacher knowledge would be different from what was displayed in the context of our study because teacher training programs have had time to establish trainings on dyslexia.) Moreover, the misconception that dyslexia is a difficulty related to visual perception has been prevalent across all three of our studies and in the context of others’ research (e.g., Ness & Southall, 2010; Wadlington & Wadlington, 2005).

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**Given the variability of foundational knowledge at the higher education level, professional development for teacher educators may deserve more attention.**

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**What Can Be Done to Improve Teacher Knowledge?**

Improving teacher knowledge is an effort that requires attention from various stakeholders. With this in mind, we provide the following suggestions for improving teacher knowledge, particularly in light of our teacher knowledge research and our most recent work focused on teacher knowledge of dyslexia. First, improving teacher knowledge can be done by improving teacher educator content knowledge and textbook quality. In a previous study (Binks-Cantrell et al., 2012), we found the knowledge level of basic language constructs is highly variable among teacher educators. We also found teacher educators with higher levels of this knowledge prepare preservice teachers who have higher levels of knowledge in comparison to their counterparts (Binks-Cantrell et al., 2012). In other words, the knowledge of the instructor, at every level, is of critical importance.

Given the variability of foundational knowledge at the higher education level, professional development for teacher educators may deserve more attention. One example is the Higher Education Collaborative (HEC). Formed in 2000 and funded by the Texas Education Agency, this professional development program was designed for university instructors of reading education. Its purpose was to engage faculty members from Texas colleges and universities to actively support efforts to improve the reading achievement of Texas students.

The main goal of HEC was to support the alignment of teacher preparation course curricula with scientifically based reading research (SBRR). Its specific objectives included:

- Assure that teacher educators and educational administration educators are knowledgeable about components of SBRR and incorporate these critical components into teacher preparation courses.
- Provide materials based on SBRR to teacher educators for use in preparing EC-4 (early childhood education through fourth grade) teachers.
- Establish a community of members who collaborate in the ongoing process of adjusting their instruction and materials to ensure the preparation of highly qualified teachers.

This program of professional development for teacher educators addressed topics such as early intervention and reading remediation materials, programs, and approaches. HEC professional development was provided by qualified, highly trained instructors through a series of workshops.
over the course of 10 years. A study of HEC participants and nonparticipants revealed teacher educators’ understanding can be heightened through effective professional development programs on current research and practice targeted toward higher education—and, most importantly, this carries over to preservice teachers (Binks-Cantrell et al., 2012). More opportunities like those afforded by HEC would be beneficial to improving the practice and knowledge of teacher educators, who in turn, will be stronger instructors for teacher candidates.

In addition to instructor knowledge, textbooks used to prepare preservice teachers often serve as a basis for a reading education course—particularly when the instructor lacks knowledge. Joshi, Binks, Hougen, Dalgren, Ocker-Dean and Smith (2009) found the most popular reading education textbooks lack quality (accuracy) in addition to quantity. Given the results of this study, instructors of reading education courses should be aware of the often missing and/or inaccurate information in many popular reading education course textbooks. Additionally, teacher educators must insist publishers provide higher quality reading education textbooks.

Our second suggestion for improving teacher knowledge hinges on the idea of improving teacher preparation and education programs in general. Professional reading organizations have highlighted the need for accurate teacher knowledge and effective instructional practice. The International Literacy Association, Council for Exceptional Children, and IDA have developed knowledge and practice standards for teachers of reading over the past several years. IDA in particular is leading initiatives to review and accredit teacher preparation programs that provide evidence of their alignment with these standards through their syllabi, coursework, textbook readings, assignments, assessments, practicums, and qualified instructors through the newly formed Center for Effective Reading Instruction (CERI). Accreditation programs like CERI have the potential to raise the bar for quality in teacher preparation programs.

In addition to efforts made by professional organizations, the Office of Special Education Programs has funded the Collaboration for Effective Educator Development, Accountability, and Reform (CEEDAR) with the goal that state education agencies, IHEs, and local education agencies work together to reform and improve special education teacher preparation programs. Though CEDAR focuses on special education teacher preparation as whole, there is a strong emphasis on reading preparation.

Lastly, we suggest that individuals outside of teacher preparation can indirectly help improve teacher knowledge through involvement in grassroots campaigns that advocate for the inclusion of dyslexia-related content in teacher preparation programs and in teacher professional development. Two such examples are Decoding Dyslexia in Connecticut and New Jersey. Comprised of families and teachers of individuals with dyslexia, both grassroots groups have been significant in helping to inform state governments and policy makers “on best practices to identify, remediate and support students with dyslexia in our public schools” (Decoding Dyslexia–CT, no date). In Connecticut, Decoding Dyslexia’s efforts have resulted in increased awareness and state legislation requiring dyslexia training in teacher preparation programs and professional development for practicing teachers. Decoding Dyslexia has also been influential in New Jersey where three dyslexia-related laws were passed in 2013 and 2014 with one specifically addressing professional development. These two Decoding Dyslexia groups have not only endorsed change for teacher preparation and professional development but also have helped make it a reality. The actions of these groups should serve as a model for other organizations to influence change in their own states and jurisdictions.

Building on Momentum

The momentum of recent legislation, policy development, accreditation, and grassroots organizations should serve as an impetus for teacher educators, researchers, state-level administrators, and school districts to improve teacher knowledge and access to effective practice. Time and energy must be focused on improving knowledge of reading concepts and dyslexia of practitioners at every level. Students cannot afford another 30 years to go by before sweeping changes are made in the teacher knowledge and practice related to dyslexia and reading instruction.

References


**Theme Editors’ Introduction continued from page 8**

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