

The Dyslexia Simulation: Impact and Implications

ELIZABETH WADLINGTON, CYNTHIA ELLIOT,
AND JAMES KIRYLO

Southeastern Louisiana University, Hammond, Louisiana

Many students with reading difficulties have a specific learning disability called dyslexia, which is neurobiological in origin and characterized by problems with spelling, decoding, and accurate/fluent word identification, negatively impacting vocabulary growth and comprehension. Consequently, the role of the insightful teacher is critical in working with students with dyslexia. Often, however, well-meaning teachers do not recognize dyslexia and have limited understanding of its symptoms. In an effort to facilitate awareness for teachers and teacher candidates, the authors regularly conduct a dyslexia simulation based on Put Yourself in the Shoes of a Dyslexic (Northern California Branch of the International Dyslexia Association, 1989) for university students. Collecting three years of surveys administered to both undergraduate and graduate education students, this article explores the themes that overwhelmingly indicate the positive impact the dyslexia simulation has on the participants.

Keywords dyslexia, dyslexia simulation, learning disabilities, reading disability, teacher education

According to the National Reading Panel (2000), 17% to 20% of the U.S. population has a reading disability. Stated another way, one student out of every five has extreme difficulties learning to read that persist through the teenage years and adulthood. Indeed, early intervention and appropriate educational treatments are critical to help these students.

Many of these students with reading difficulties have a specific learning disability called *dyslexia*. This disability is neurobiological in origin and characterized by problems with spelling, decoding abilities, and accurate/fluent word identification. It is thought that these problems are due to a deficit in phonological processing. The problems are unexpected considering students' other cognitive abilities and are not a result of inferior instruction. Moreover, difficulties in reading comprehension are a continuous challenge, often resulting in fewer reading experiences, ultimately leading to poor vocabulary and background knowledge (International Dyslexia Association, 2005; Lyon & Shaywitz, 2003).

The Role of the Teacher

Because persons with dyslexia usually have many strengths, teachers are often surprised when a student with dyslexia has extreme difficulty in reading. On the other hand, students' reading problems may hide or tend to negate their strengths in the eyes of educators (Mortimore, 2003; Shaywitz, 2003; West, 2000). Students, also, report that sometimes there are differences between teachers' perceptions of their academic competence and their own perceptions of their abilities. These discrepancies can limit students' achievement in classes (Carlisle & Andrews, 1993). When school experiences are negative, many

Address correspondence to Elizabeth Wadlington, Southeastern Louisiana University, SLU 10749, Hammond, LA 70402. E-mail: bwadlington@selu.edu.

students develop social and emotional problems such as low self-esteem, frustration, helplessness, stigma, and depression (Currie & Wadlington, 2000; Riddick, 1995; Rubin, 2002; Ryan, 1994; Shaywitz, 2003). Problems worsen if parents are not perceived as partners in the educational process of their children (Hunter-Carsch, 2001; Riddick, 1995; Shaywitz, 2003). Consequently, the role of the insightful teacher is critical and their perceptions play an important role in learning (Hellendoorn & Ruijsenaars, 2000; Levine, 1998; Ryan, 1994; Wadlington & Wadlington, 2005).

Good teaching is an important factor in determining if learning takes place for students (Ford, 1997; National Reading Panel, 2000; Rubin, 2002; Shaywitz, 2003). However, teachers often overestimate their reading knowledge and are not cognizant of what they do know and do not know (Cunningham, Perry, Stanovich, & Stanovich, 2004). Moats and Foorman (2003) state teachers' knowledge about reading instruction and structured language concepts is modestly predictive of their teaching competence in reading for students with dyslexia. Spear-Swerling and Brucker (2002) believe that teachers have poor word structure knowledge that prevents them from teaching effectively. Regan and Woods (2000) point out that teachers' specific beliefs about dyslexia have many implications for practice. When studying beliefs, Wadlington and Wadlington (2005) found that numerous groups of educators (i.e., elementary regular education teachers, secondary regular education teachers, special educators, school counselors, administrators, university faculty) have significant misconceptions about dyslexia, often feel inadequate to work with students with dyslexia, and sincerely want to know more about how to provide effective instruction to students with dyslexia. All of these researchers call for more study into how classroom teachers can better address the needs of all students in their classrooms.

Some feel that current teacher education practices hinder effective instruction for students with dyslexia (IDA, 1997; Lyon, 1998; Moats & Foorman, 2003; National Reading Panel, 2000). Bos, Mather, Dickson, Podhajski, and Chard (2001) state that general education as well as special education teachers may not be adequately prepared to teach students with dyslexia. Chard (1999) indicates that special education teacher education programs are too generic and that special education teachers should earn reading certifications to prepare them to work with students with dyslexia. Clark and Uhry (1995) believe that part of the problem is due to the fact that reading education, special education, and remedial reading education are often treated as three autonomous domains without integration or collaboration. Reback (1999) suggests that teacher unions should help improve reading instruction for students with dyslexia by becoming involved in teacher education. Wadlington and Wadlington (2005) advocate that educators not only need to learn more about dyslexia in undergraduate and graduate classes but that they need hands-on experiences with students with dyslexia in their college programs.

In summation, teacher education is an ongoing, lifelong process that only begins with initial certification programs; experienced teachers need additional appropriate training as their careers progress (National Reading Panel, 2000; Spear-Swerling & Brucker, 2003; Spear-Swerling & Brucker, 2002; Wadlington & Wadlington, 2005). Teachers need more than book knowledge about dyslexia; they need to have some level of empathetic understanding of how it feels to experience the frustrations and learning difficulties that a person with dyslexia faces daily (Currie & Wadlington, 2000; Jordan, 2002; Ryan, 1994; Wadlington & Wadlington, 2005). Thus, in the final analysis, school-aged children who have dyslexia not only need to be in classroom settings where teachers are well informed regarding their condition but also must have the good fortune of having an empathetic teacher. In fact, one of the qualities of an excellent teacher is to possess the quality of empathy, which is necessarily tied into the concept of compassion. That is, one is

conscious of another's difficulty and distress while simultaneously seeking out possible solutions and alternatives to alleviate anxiety and troubles (Kirylo, 2004).

Dyslexia Simulation Description

We, the authors, are teacher educators at a large, regional university. We have taken steps to make sure that dyslexia is covered in a consistent, structured manner in our undergraduate and graduate programs. One event that is required for all undergraduates (preservice teachers) and graduate students (inservice teachers) in elementary education and literacy education is a dyslexia simulation based on *Put Yourself in the Shoes of a Dyslexic* developed under the direction of Martha Renner (Northern California Branch of the International Dyslexia Association, 1989). This simulation provides hands-on experiences that allow participants to experience the frustration, exasperation, and learning difficulties that people with dyslexia routinely experience.

The modified version of the simulation that we use consists of two large group times and four small group stations. Because these students have already obtained extensive background knowledge about dyslexia in their classes, a facilitator begins the simulation by guiding the university students in a brief summation of the definition of dyslexia and its characteristics. During the initial large group time, the students experience their first simulation of what it feels like to have a learning problem when they take an unfair spelling test under conditions that mimic an auditory processing problem. It is impossible for anyone to discern and spell the words correctly.

After the large group experience, students rotate through the four stations in smaller groups. Each station is designed to be an extremely challenging task. The stations are as follows:

Station 1 simulates a beginning reading situation in which students have extreme problems with decoding and comprehension.

Station 2 simulates acute writing and visual-motor difficulties.

Station 3 simulates severe fine motor problems when attempting writing tasks.

Station 4 simulates serious visual perception and visual processing difficulties when trying to read.

As students experience each station, facilitators make insensitive and ill-informed comments regarding students' difficulties such as "I know you can do better if you try harder"; "Why aren't you paying attention today? You could do this yesterday"; "You are going to have to stay in at recess again to finish your work"; and "The best papers are going on the principal's Star Pupil Board!" After each station, facilitators lead students in discussions in which they reflect on their difficulties with and feelings about the specific tasks.

Lastly, a facilitator leads a second large group time in which students generally debrief and reflect. The post-simulation discussion allows opportunities for students to verbalize their personal feelings about the experience and their insights into teaching children with dyslexia. It is during this reflection that students complete a reflective survey, which serves as the basis of this research.

Purposes of Research

This research was conducted to explore the impact of participation in the dyslexia simulation on preservice and inservice teachers who were enrolled in undergraduate and graduate teacher preparation programs at a large regional, state university. The dyslexia simulation

was aimed at improving teacher quality and ultimately, making a positive impact on K-12 teaching and student learning. In addition, this research served as a self-study for the teacher educators examining the effectiveness of the dyslexia simulation as an instructional practice in light of re-accreditation for the teacher education program (National Council for the Accreditation of Teacher Educators (NCATE), 2008). Thus, the research question was "What is the impact of the dyslexia simulation on undergraduate and graduate teacher education students?"

Methodology

Subjects

The participants included both undergraduate students ($n = 224$) and graduate students ($n = 121$) for a total 345 students. The participants were enrolled in literacy courses at either the initial certification or advanced level. Ninety-five percent of the graduate students were currently teaching in elementary schools. A relatively small number of graduate students had experienced the simulation as undergraduate students; however, over 90% were experiencing the simulation for the first time.

Instrument

An eight-question survey was used to collect the data regarding impact of the dyslexia simulation. The majority of the questions explored knowledge and dispositions (e.g., attitude, feelings, values) about dyslexia and working with students with dyslexia. Four questions were presented in a likert format as participants were asked to indicate the following responses "Not at All," "A Little," "Moderately," or "Very Much." All items allowed for an explanation through a constructed response option that provided descriptive data.

Data Collection and Analysis

To ascertain immediate impressions, opinions, and overall judgment of the experience, participants were given the survey immediately upon completing the dyslexia simulation. Participants took from 5 to 25 minutes to respond to the survey.

As the principle way to collect the data, grounded theory (Glaser & Strauss, 1967) was the methodology utilized precisely because the theory is grounded in the data and emerges from the data. Data were analyzed to identify any recurring uses of language and to determine if any themes or patterns emerged. The constant comparative method was used to analyze individual survey items, and patterns of response were parsed into critical segments. Through data analysis, a coding process began to take shape that guided the construction of categories based on common characteristics that represented comments, impressions, and observations of the data.

A consistent reappearance of words and phrases naturally allowed for the unfolding of emergent themes. Using the metaphor of pulling separate threads from a thick cord and placing these threads into categories, words and phrases were separated into themes. Each thread was independent of the other, but like a thick cord when wound together, there were relationships among them. Each thread delineated a thematic understanding of looking at the context, beliefs, and practices relative to the context and purpose of the dyslexia simulation.

Results

The data overwhelmingly indicated that the participants' awareness of dyslexia was heightened as a result of their participation in the simulation. Ninety-nine percent of the participants, over the period of three academic years, indicated that the simulation increased their awareness of the possible limitations, abilities, and feelings of a learner with dyslexia. Ninety-eight percent of the participants also indicated that the simulation had influenced their dispositions to work with learners with dyslexia as well as noted that they would be more likely to recognize learners who may have dyslexia or other learning difficulties.

When asked how the participants would rank the dyslexia simulation in terms of helping them become an effective educator, 74% indicated that the simulation was very helpful; 23% indicated that the simulation was moderately helpful; and 3% indicated that the simulation was a little helpful. The majority of the comments reflected that participants were more informed about dyslexia by having participated in the simulation from the student perspective. They indicated this experience "puts you in a place you could never be, and gives you an understanding where before you had nothing." Many indicated that experiencing the difficulties rather than just talking about them gave them insight as to how they might work with children with dyslexia in the future.

In separating the threads, the interrelated themes which reflected a heightened awareness emerged as follows: (1) Empathy; (2) Reflective Practice; (3) Connection to Self, Students, and Others (Family and Friends); (4) Professional Development; and (5) Difference versus Disability.

Empathy

As a result of their participation in the dyslexia simulation, participants were moving toward becoming more empathetic toward students. Examples of typical comments were as follows:

- "I am glad I participated in this. I now have an understanding of how exasperating it is to be dyslexic."
- "I liked the simulation. It opened my eyes to the frustrations and anger that these students go through even when they are trying hard."
- The simulation "... really made me empathetic, not just sympathetic to those with dyslexia."
- "I thought the simulation was very helpful. It really made me understand (or try to) what a student with dyslexia must go through and feel."
- "I never thought about how frustrating and embarrassing it would be for the students."

Reflective Practice

Data also highlighted participants' pedagogical knowledge. Participants indicated that they embraced new insights into dyslexia and the challenges that learners who experience learning difficulties deal with on a daily basis. They also indicated that this new awareness led them to think about their own instructional practices.

Reflections about knowledge of the learner were a predominant pattern of response as expressed in the following comments:

- "I will be more mindful of student differences now. I never realized that some of my students may think differently from the way I think."
- "It made me aware of how much more time students with dyslexia need."

- “This was a very frustrating simulation. It made me realize the encouragement and extra effort that needs to be given to those students.”
- “I see how the students are attempting to compensate for areas they are working in.”

Some comments indicated the participants’ awareness of the need to change their instructional practices when working with students with learning difficulties.

- “I will be more encouraging to students and allow them longer times to react to and process directions.”
- “Wow! I will be more patient with my students.”
- “I must be more careful not to compare students and not to pressure students.”
- “I saw myself in the critical teacher [instructor facilitating the simulation] and I was ashamed. I want to go back to school and apologize to the kids . . . this will change my teaching. I will be more compassionate.”
- “I know I need to change some of my teaching methods to help all students . . . I’m glad to be more aware of the problems that are out there. Now, I need help implementing the changes.”

Connection to Self, Students, and Others (Family and Friends)

Many participants indicated that they made personal connections to self, to students they have taught, and to family or friends as a result of their participation. Sometimes, they became quite emotional when discussing these connections.

Examples of comments are listed by category:

Connections to Self:

- “I AM DYSLEXIC! Now people know how we feel.”
- “As I was making my rounds from station to station, I felt myself shutting down much like I did in elementary school. My dyslexic experiences all came back to me.”
- “I have dyslexia. I had to stop. I couldn’t participate for the entire simulation.”
- “I felt like I was falling into my black hole of dyslexia. My head hurt.”
- “I feel like I have mild form [of] dyslexia. How can I be diagnosed?”

Connections to Students:

- “I do have a student in my class that I am extremely concerned about. I am even more concerned now because I believe she fits in this category.”
- “I have a dyslexic student in my talent pool class, and this activity greatly increased my awareness of her struggles.”
- “Recently, I have been grading sixth graders in social studies, and I have been very critical of their work. This made me realize that some of these students may be dyslexic.”
- “I tutor a child with learning problems. I think he may have dyslexia, but the school won’t test him. What do I do?”

Connections to Family and Friends:

- “My husband was diagnosed with dyslexia at nine years of age, and this gives me an idea of what he may face during certain activities. Maybe, I can be more patient and understanding.”

- "I have a friend with dyslexia and now I see the types of things she goes through in her life."
- "My fiancé is dyslexic and this simulation helped to make me fully understand how hard it can be for him."
- "My sister is dyslexic and would always get frustrated when I tutored her. Now, I understand how talented she really is."
- "My sister has dyslexia and I've had to work with her. . . . Now I can kind of see where she is coming from."
- "Both my brothers are dyslexic. There was no understanding of it [dyslexia] when they were in school. Neither made it past ninth grade. There was no help, no support. It makes me angry."

Professional Development

Overwhelmingly, participants stated that all teachers needed to go through the seminar. This theme is important for two reasons: (1) It validates the value and importance of the simulation experience and (2) It indicates that teachers recognize the value of the simulation as professional development by suggesting this experience to other teachers. Several graduate students passionately wondered if the simulation could be conducted at their respective school sites. They made comments such as these:

- "The simulation was a great eye-opener. We would love to have this at our school? Can you do it for us?"
- "It would be awesome if this simulation could be made available to faculties as an inservice to help educators be more sensitive and compensating to students who have difficulty learning."

A number of undergraduates were adamant that every education major must go through such a simulation. Typical comments included the following:

- "I think all future teachers should be required to attend to help them better understand some of their students."
- "This was a really great program. All teachers should have to go through this."
- "I needed this much earlier in my program."

Difference versus Disabled

An important theme that emerged was that there was some disagreement as to what was meant by "difference" and "disability." Certainly, the distinction is important as it relates to characterizing children and meeting special needs. Comments included the following:

- "Dyslexia is a difference, not a disability. People with dyslexia are not unintelligent."
- "Dyslexia is a difference; however, having problems with literacy turn into a disability in today's modern world."
- "I am not sure. Students with dyslexia learn differently. But I don't think that they are disabled. They just need good instruction."
- "Dyslexia is a learning *disability*. Students with dyslexia need accommodations, but I don't think that they have to be in special education (unless it is very severe)."
- "I have dyslexia. It is difference . . . and a disadvantage, sometimes."

Discussion and Implications

The primary purpose of the dyslexia simulation is for undergraduate education majors (preservice teachers) and graduate students (inservice teachers) to become more aware of the complexity of dyslexia by "experiencing" what it may feel like to have dyslexia. As pointed out earlier, teachers are often not well-informed with respect to the possible multiple manifestations of dyslexia within a classroom setting, leaving wide the possibility of misunderstandings and ill-advised instructional approaches when working with children who may have dyslexia. Thus, an important aspect of teaching is for teachers to be more aware of the possible signs of dyslexia. More than lecture alone, the dyslexia simulation is a key experience that facilitates awareness of dyslexia, with hopes of positively impacting disposition and pedagogical approaches.

The implications are many. Preservice teachers need to have the dyslexia simulation early in their programs. It would be best if it could be coupled with actual field experiences so that students can make immediate applications. Additionally, school districts should consider offering the dyslexia simulation for new teachers as they enter the school system as well as offering the simulation as a professional development opportunity for their current teaching staff. Furthermore, teacher educators need to explore the possibility of providing similar experiences to assist teachers in working with students with other disabilities (e.g., math disability, ADD).

The difference/disability issue should be further explored. Whether one considers students with dyslexia different or disabled has implications for how teachers respond to and instruct students. This issue also affects how students are labeled to receive special services under federal and state laws. Extensive conversations within the educational community are needed to shed more light on this topic. Individuals with dyslexia as well as their family members should be included in these discussions.

Conclusion

The dyslexia simulation provides teacher educators with an effective, instructional practice for use in teacher preparation programs. The realistic simulation of being dyslexic has a profound impact on those who participate at either an undergraduate or graduate level. Through this experience, preservice and inservice teachers develop a greater awareness of their need to develop the necessary knowledge, skills, and dispositions needed to teach students with dyslexia or other learning difficulties. Clearly, the dyslexia simulation has proven to be a powerful learning experience enabling teachers to better help all students, especially those who have learning difficulties.

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