Assistive Technologies for Reading

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ABSTRACT

Twenty-first century teachers working with diverse readers are often faced with the question of how to integrate technology in reading instruction that meets the needs of the techno-generation. Are today's teachers equipped with the knowledge of how to effectively use Assistive Technologies (AT) for reading? This position paper discusses AT for reading as a vital component to reading education courses, and posits that AT for reading is not for students with disabilities alone. Thus, its usage should not be limited to special education professionals, but all reading professionals should embrace AT, teach students about it, and explore its use with diverse readers in the inclusive classroom.

INTRODUCTION

At the 2009 annual conference of the Association of Literacy Educators and Researchers, I heard many comments by reading professionals that led me to believe that many are unaware of the term *Assistive Technology (AT)* and its benefits for students. Indeed, Hasselbring and Bausch (2006) tell us that AT is mostly used in special education classrooms rather than general educational classrooms, and most of the current literature is focused on students with disabilities and AT, rather than the general population.

However, students with disabilities are not the only ones who have difficulties learning to read. Now more than ever, there is an increased focus on reading achievement in our society as evidenced by the creation of No Child Left Behind and adequate yearly progress reports (National Institute of Child Health & Human Development, 2000). It is no secret that our nation has persistently struggled with the poor reading levels of our school children, which has been reported by both the National Reading Panel Report and the report card of the National Assessment of Educational Progress (Lee, Grigg, & Donahue, 2007). Many children, not just students with disabilities, are at risk for reading failure. Children experience slower progress in reading achievement due to the cyclical effects of physiological, hereditary, emotional, sociocultural, cognitive, language, reading history, and educational factors (McCormick, 2007).

What is AT?

According to the Technology-Related Assistance for Individuals with Disabilities Act of 1988, an AT device is "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain or improve the functional capabilities of individuals with disabilities." This Act not only defines AT, but also grants federal funds to the states so that they can create statewide systems for delivering AT devices and services to people with disabilities. AT reading tools include software, hardware, and other devices designed to make text-based materials more accessible for people who have difficulty with reading, helping students successfully access grade-level/ appropriate texts, to strengthen and improve their overall reading skills (Hasselbring & Bausch, 2006).

The Individuals with Disabilities Education Improvement Act of 2004 (the nation's special education law) requires that school districts be responsible for providing AT devices and services if it is determined by an IEP team that the child needs them in order to benefit from his or her program. According to Hasselbring and Bausch (2006), (1) AT is an empowering aid, (2) AT helps individuals compensate when remediation problems persist, and (3) AT promotes independence, decreases reliance on others, and enables children with disabilities to learn those skills of independence and self-sufficiency.

Why AT for Reading?

Classrooms today are diverse and inclusive. More students with disabilities are mainstreamed into general classrooms than in resource or pull-out programs (Hasselbring & Bausch, 2006), and most students with learning disabilities have reading problems. Furthermore, struggling readers—whose needs are similar to those with learning disabilities—are in all classrooms. Therefore, today's classrooms must be able to guide and assist *all* students with reading supports and interventions in order to boost academic success. In addition to the needs of the diverse classroom, today's children and youth are members of the techno-generation, comfortable with manipulating technological aids—it is a natural part of their world, and can be a natural part of their classroom experience. Furthermore, federal laws promote the use of AT for students with disabilities.

However, classroom teachers report that they do not know about AT, its availability, or how to use it (Hasselbring & Bausch, 2006). This is not a surprise, as there is a question whether reading education methods courses adequately prepare teachers to integrate technology with classroom instruction. For example, typically, teachers are taught to focus on instructional planning in reading instruction by asking what the student's current level of reading achievement is, and what the student's strengths and weaknesses in the various skill areas of reading are. But teachers should also ask themselves how AT can assist their students in reading tasks. Based on the premise that all teachers are reading teachers and that classrooms are diverse and inclusive, it is imperative that today's teachers are equipped with the knowledge of how to effectively use AT for their students.

Types of AT Available

There are a number of types of AT available for the classroom, and assistive technologies available for reading range from low tech to high tech tools. *Talking books* (books on CD or tape) are excellent resources for any who cannot read due to learning disabilities, dyslexia, or visual impairments. Learning Ally is an organization that makes "reading accessible for all," and is "a friend to all who learn differently" (About Learning Ally, n.d.). Founded in 1948 as Recording for the Blind, they serve K-12 as well as college and graduate students: "Learning Ally's collection of more than 70,000 digitally recorded textbooks and literature titles— downloadable and accessible on mainstream as well as specialized assistive technology devices—is the largest of its kind in the world" (About Learning Ally).

Another type of AT is *digital or electronic books* (in digital format that allow readers to use text-to-speech software). Bookshare.org (Accessible Books and Periodicals for Readers with Print Disabilities) is free for all U.S. students with qualifying disabilities, thanks to an award from the U.S. Department of Education, Office of Special Education Programs. Bookshare is a searchable online library for readers of all ages of about 90,000 digital books, textbooks, teacher-recommended readings, periodicals, and AT tools.

There is also read-aloud text for the computer. For example, a *screen reader* is a computerized voice that verbalizes everything on the computer screen (including scanned text). One example of a screen reader is from Kurzweil Educational Systems, the *Kurzweil 3000*. Kurzweil Educational Systems is a leader in AT, text-to-speech, and software literacy solutions for individuals with learning difficulties, such as dyslexia and attention deficit disorder, as well as English language learners. Kurzweil provides reading, study skill, and writing support for grade three through college.

For students with visual-processing difficulties the words may move or jump on the page and/or students may see double letters or letters may move around in a word.

> If, as a teacher or a parent, you notice your child gets tired easily, skips lines, does not want to read or misses punctuation when reading aloud, then you know your child has some type of visual perceptual problem and is not seeing the words on the page the way they should. (Wyman, 2011)

For these students there is a low-tech tool called a *colored transparent overlay*, which is a transparent plastic colored sheet that improves a student's ability to make meaning of the letters they see. For more information about colored transparent overlays, go to www.HowtoLearn.com.

There are mid-tech tools such as *reading pens*. The Quicktionary II Reading Pen by Wizcom is one type of reading pen that allows the user to scan individual words or full lines of text to hear scanned text aloud. The Pen also provides definitions and synonyms through its built-in dictionary and thesaurus.

Lastly, there are high-tech tools that provide reading intervention, such as *computerized reading training applications* which provide direct instruction in reading skills to boost student reading proficiency. For instance, READ 180 is a program currently being used in public schools throughout the nation. Overall, most low-tech tools are free or inexpensive (less than $100), while mid- to high-tech tools cost anywhere from $200 to thousands of dollars. The tools mentioned in this position paper are easy to use and are typically supported financially by school systems.

CONCLUSION

The benefits of AT for struggling readers are promising. Research with children and youth with disabilities suggest that (1) assistive technologies are empowering aids, (2) AT helps individuals compensate when remediation problems persist, and (3) AT promotes independence, decreases reliance on others, and enables children with disabilities to learn those skills of independence and self-sufficiency (Hasselbring & Bausch, 2006).

AT is not just for special education classrooms and students with disabilities; all types of students with reading difficulties can benefit from AT. All classroom teachers, whether elementary, special, or secondary, should be aware of—and know how to use—AT for reading in a diverse, inclusive classroom. Teachers should move beyond the status quo and embrace twenty-first century technology. It is therefore paramount that undergraduate reading-education programs, as well as graduate advanced-reading specialist programs, prepare teachers, especially reading specialists, to use AT reading intervention and support as a vital and *necessary* component for our struggling readers.

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REFERENCES

Hasselbring, T. S., & Bausch, M. E. (2006). Assistive technologies for reading. *Educational Leadership*, *63*, 72-75.

Individuals with Disabilities Education Improvement Act of 2004, Pub. L. No. 108-446, § 300.6, 118 Stat. 2647 (2004).

About Learning Ally (n.d.). *Learning Ally*. Retrieved April 11, 2012, from http://www.learningally.org/About-Us/19/

Lee, J., Grigg, W., & Donahue, P. (2007). *The nation's report card: Reading 2007* (NCES 2007, No. 496). Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

McCormick, S. (2007). *Instructing students who have literacy problems* (5th ed.). Upper Saddle River, NJ: Pearson.

National Institute of Child Health & Human Development (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, DC: U.S. Government Printing Office.

Technology-Related Assistance for Individuals with Disabilities Act of 1988, Pub. L. No. 100-407, § 3.1, 102 Stat. 1044 (1988).

Wyman, P. (2011). Reading with colored overlays improves comprehension. *HowtoLearn.com*. Retrieved April 11, 2012, from http://www.howtolearn.com/2011/08/reading-with-colored-overlays-improves-comprehension