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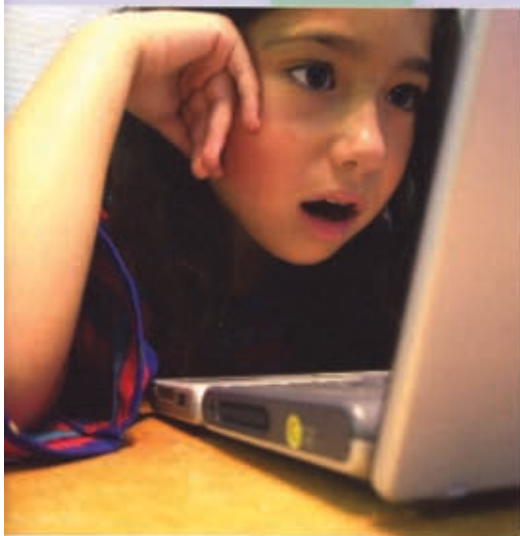
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**Technology
Tools
for
Diverse
Learners**



Text Readers Make Universal Access to Core Curriculum Possible for U.S. Schools; Timely for Students with Print Disabilities

By **Valerie Cherek** in collaboration with Don Johnston Incorporated and Bookshare

In schools today, there is a clear gap between students who need accessible technologies to access core instruction materials and students who have access. The National Assessment of Educational Progress (NAEP) reports an estimated 75% of students with disabilities read below proficiency levels; yet only 1-3% have access to technologies to help them accommodate or overcome their reading barriers. Some say this disparity is due to the high cost of assistive technologies (AT) and the difficulty in acquiring accessible instruction materials.

Once-prohibitive cost barriers to purchase assistive technologies has improved this year thanks to new software license options and the influx of American Recovery and Reinvestment Act (ARRA) funds. Did you know that ARRA monies earmarked for IDEA (Individuals with Disabilities Education Act) suggest purchasing AT tools, like a text reader, to provide sustainable access to accessible instructional materials? This includes digital books and textbooks. U.S. organizations, like Don Johnston and Bookshare are helping to make universal access more common in schools to support students with print disabilities and those who struggle in reading.

Free Access to Digital Books and Text Readers

In 2008, Bookshare partnered with Don Johnston, a developer of assistive technologies to support students with cognitive, physical and reading disabilities. Bookshare is the world's largest online library of accessible books for individuals and students with qualified print disabilities. Through the partnership, Don Johnston provided its READ: OutLoud® Bookshare Edition text reader for free. This program supports about 1-3% of students in U.S. schools with qualified print disabilities who

are blind, have low vision, a physical or a reading disability.

In October 2007, Bookshare received a \$32 million five-year award from the U.S. Department of Education, Office of Special Education Programs (OSEP) to expand the availability of accessible books and software to read the digital books. The library has over 50,000 books including fiction, non-fiction, textbooks, educational reading, newspapers and magazines, plus two free software applications that read digital content. Students read Bookshare's digital books and NIMAC textbooks using the READ:OutLoud Bookshare Edition text reader for Windows or Macintosh or Victor Reader Soft by HumanWare. Learn more about all of Bookshare's reading tools at <http://www.bookshare.org/readingTools>

Removing Cost Barriers: Whole-School Unlimited Access

If Bookshare serves 1-3% of the U.S. students with qualified print disabilities, what do we do for struggling students who would benefit from using a text reader, but do not qualify for access under Bookshare?

Is it common in your school to find a handful of text readers stretched across the curriculum to support a variety of students' needs? This ratio could mean one text reader for every 100 students; making it difficult to accommodate students with reading disabilities and nearly impossible to provide a universal access solution.

Don Johnston is working hard to break through AT cost barriers to help U.S. schools provide a universal access reading solution. This developer partners with states, districts and organizations to ensure students who read below grade level or have qualified print disabilities get the reading support to access core curriculum and reach their

optimum learning potential. Today the company offers a full version of its READ:OutLoud text reader for just over \$1K (a one-time license) for students who do not qualify under Bookshare. This whole-school unlimited license will benefit more students and provide access to digital materials in all common digital formats.

Under whole-school licensing, schools can serve more students who need extra reading assistance while stretching school dollars. The software can be imaged on every computer to reduce the burden of tracking individual site licenses throughout the school. This saves teachers and IT managers' time and effort. Students also receive take-home privileges which is useful for students who need extra reading practice. The cost-per-student ratio becomes manageable to serve more students throughout the curriculum in cost-effective ways.

Virginia and Indiana provide universal access to accessible instruction materials utilizing an unlimited site license of Don Johnston's full READ:OutLoud software. These licenses are available to every school in the state. You can learn more about these initiatives through George Mason University, VA (<http://kihd.gmu.edu/aim/overview/>) and the Indiana Center for Accessible Materials (<http://www.icam.k12.in.us/>).

Which Students Benefit from AT Text Readers?

Since the 90's, researchers have studied the effects of computer assisted technologies for students with learning disabilities. Consider these findings from the Northwest Regional Educational Laboratory School Improvement Research Series:

- Students with disabilities achieve academic progress at higher levels using computer-assisted technologies than using conventional instruction alone.
- Students' fondness for computer activities grows as they hear immediate, objective, and positive feedback.
- Students make significant gains using software that is carefully designed to incorporate systematic instructional procedures found to be effective in reading instruction (i.e., explicit, strategic, and scaffolded instruction, engaged time, and audio feedback).

For students who cannot physically hold a book or may have challenges with visual processing, text readers become critical tools for reading success. For students who are better auditory learners, text readers can help them enjoy a more fluent reading experience. A text reader can minimize the burden on students who have difficulty comprehending printed text written at higher readability levels. Through speech-enabled text a story comes alive for students who struggle to comprehend the full meaning of a story. Students enjoy hearing text read aloud by speech synthesized or human voices. Through digital games, these students are more accepting of computer voices, possibly than the teachers.

Students who have daily access to text readers learn information fast. Some text readers, like READ:OutLoud, have embedded reading comprehension tools such as e-highlighters to take study notes or a bibliographer to accurately cite research. For students in rural areas who do not have access to computers or who want to read on the go, portable text readers can be helpful, like the Classmate Reader by HumanWare. In some states, text readers are approved test accommodations. For students with print disabilities, these assistive technology tools help to ensure timely access to tests and electronic books at the start of school, rather than waiting for weeks to receive digital formats.

Accessible Books

Where can you find accessible books and textbooks in the latest Digital Accessible Instruction System (DAISY) or Braille Ready Format (BRF) to download and read on these assistive devices? Bookshare is the one-stop place for accessible books. As of August 2009, Bookshare offers over 50,000 accessible books, textbooks and periodicals and serves more than 65,000 members, including tens of thousands of U.S. students with qualified print disabilities. Bookshare can also help educators comply with IDEA 2004 which requires timely access to accessible instructional materials (AIM) for students with IEPs who struggle with traditional print-based texts.

Elaine Houtman Byron, Assistant Director for Missouri Assistive Technology and NIMAC Coordinator for MO Public Schools, said, "Our state wants to streamline systems and make the most advances toward providing accessible books for stu-

dents in a timely and efficient manner as required by the IDEA law. Eliminating the middle man was a natural choice because we believe the fewer the steps in our process, the better for our educators who don't have time to look for accessible books. Now we go directly to Bookshare as our one source for the latest DAISY 3.0 file or BRF. This process is a timesaver for us!"

By 2012, Bookshare expects to collect 100,000 books through partnerships with publishers, authors, and universities, and the support of hundreds of volunteers. Once students find a book, they can choose a DAISY or BRF file to download to their computer or assistive technology device. DAISY will work with various assistive technology software or devices like the READ:OutLOUD Bookshare Edition or Victor Reader Soft. BRF works with notetakers and refreshable Braille displays. Accessible books from Bookshare can also be converted to MP3 format and played on MP3 players. Bookshare does not offer tools to convert to MP3, but there are many tools available for this task like Kurzweil 1000, Open Book from Freedom Scientific, and TextAloud.

U.S. Schools & Districts- Universal Access Initiatives

School-wide reading initiatives are becoming increasingly popular as administrators strive to improve AYP (Adequate Yearly Progress) read-

ing scores and to ensure economies of scale when purchasing assistive technologies through ARRA funds.

Fox Chapel Area School District in Allegheny County, PA uses Bookshare to provide accessible books for students with qualified print disabilities. For students who don't qualify for Bookshare, the district expanded their full license of the READ:OutLOUD software to ensure all students who read below grade level get the reading support they need. This district serves 6 schools and over 4,505 students; about 700 receive special education services. Dr. Lynne Porterfield, the Special Education Director at Fox Chapel, has worked with Don Johnston for years to support students with IEPs. When asked about the latest expansion of the text reader licenses, Dr. Porterfield said, "This tool offers a powerful set of opportunities for more students to receive timely access to accessible instructional materials throughout the curriculum."

Spotswood School District, New Jersey, under the direction of Superintendent Dr. John Krewer, uses the SOLO Literacy Suite in the elementary, middle and high school. The chart below demonstrates improvements in 8th Grade Language Arts Literacy scores for students in general and special education in a response-to-intervention (RTI) program to improve reading and writing skills using a suite of assistive technology tools including a text reader.

Spotswood School District, Spotswood New Jersey Language Arts Proficiency 2006-07 – 2007-08

Memorial Middle School, Spotswood School District, NJ

Grade 8 Language Arts Literacy Proficiency Assessment
SOLO® Literacy Suite – RTI Assistive Technology Program

2006-2007	Partial Proficient	Proficient/Advance Proficient
Total Population	17.1%	82.9%
General Population	12.6%	87.4%
Special Education Population	75%	25%

2007-2008	Partial Proficient	Proficient/Advance Proficient
Total Population	10.6%	89.4%
General Population	1.3%	98.7%
Special Education Population	50%	50%

Mr. Richard Flamini, Director of Special Education for Spotswood Schools, NJ finds the assistive technologies a windfall for students who struggle with literacy and learning challenges. He said, "Through these helpful tools, students' reading and writing process has become a pleasurable learning exercise. The interaction between the text and the reader builds upon student success and contributes to advanced reading comprehension."

Jo-Ann Moyer, Special Education Teacher at Memorial Middle School, NJ, uses READ:OutLoud with 7th and 8th graders who needed extra reading support. One student with dyslexia independently researched a writing assignment on American History and the Revolution using the Internet. She collected facts and wrote notes to complete a five-paragraph essay. "My student responded positively to the multi-modality of hearing the text read aloud. She wrote her assignment well and was able to keep up with the class. Without having this tool, we would have needed to help her research the assignment," shared Ms. Moyer.

Educators in Fulton County Public Schools, GA recently won the 2009 Innovation Award for Promoting Excellence in the Classroom from their local Foundation for Exceptional Children for using assistive technologies to improve students' literacy skills. District AT Specialist Betsy Rohrbaugh shared this story about an engaged parent in her district: "A parent of a third grader who read below grade level was frantic that her daughter was not going to pass the state test. She requested her daughter be given reading tools, so we put her on READ:OutLoud. She took the state test without the tool and passed. Her mother was thrilled! This student who is now in 4th grade races through assignments using this text reader."

Universal Access Starts Now

How do we provide a better reading experience and education for students?

- Talk with your district or state accessible instructional materials coordinator
- Learn more about accessible instructional materials (AIM):

Accessible IEP / CAST Organization http://nimas.cast.org/about/resources/accessible_iep

AIM – Are you in the know? by M.J. Barry
http://www.donjohnston.com/research/articles/AIM_in_the_know_MJB.html

AIM Research Articles / CAST
http://nimas.cast.org/about/resources/papers/anno_research#aim_dtb

Family Center on Technology with Disabilities – 2009 Summer Institute on Accessible Instruction Materials and Technologies
<http://fctd.info/institute/2009/displayPost.php?messageID=10771&board=509>

- Learn more about AT devices to read digital materials

PACER Organization Comparison Chart
<http://www.pacer.org/stc/pubs/Digital-LearningMaterials.pdf>

- Talk with your Special Education Director about district procedures for recommending students for Bookshare membership.
- Collect data and information about enhanced outcomes as a result of using accessible instructional materials.

Organizations, like Bookshare and assistive technology developers, like Don Johnston are working hard to make universal access a reality for U.S. educators seeking solutions to improve AYP scores and comply with IDEA 2004. Special and general educators and parents view assistive technology as critical tools to equalize the learning experience for students at school and at home. For struggling learners, assistive technology tools can engage and motivate them to want to read more and to improve reading skills and learning independence. Through Bookshare, students with qualified print disabilities can read accessible books at the same time as their sighted peers free of charge.

Finally for U.S. schools, affordable unlimited software license options are cost-saving measures to put assistive technologies in the hands of more students. Schools can maintain sustainable universal access by considering school-wide distribution. Will your state, school or district be the next exemplary model to ensure universal reading access?

In the next issue of SETP, we will focus on

Bookshare student members and educators around the U.S. as they journey through the world of timely accessible books. We'll also learn how educators are tapping into new one-step quick search tool on Bookshare to locate National Instructional Materials Access Center (NIMAC) textbooks.

Resource Links

IDEA 2004 - Accessible Instruction Materials
<http://www.ideapartnership.org/osepage.cfm?pageid=49>

National Assessment of Educational Progress <http://nces.ed.gov/nationsreportcard/reading/>
<http://nces.ed.gov/nationsreportcard/pubs/main1996/2000473.asp>

Bookshare Membership
<http://www.bookshare.org/signUpType>

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Cotton, K. (1991). Computer Assisted Instruction. *School Improvement Research Series*. www.nwrel.org/scpd/sirs/5/cu10.html. Retrieved August 18, 2009.

Edyburn, D.L. (2006) Failure is not an option: Collecting, reviewing, and acting on evidence for using technology to enhance academic performance. *Learning and Leading with Technology*, 34(1), 20-23 <http://www.2learn.ca/institute/institute2007/institute07resources/L&L2006.pdf>

Northwest Regional Educational Laboratory School Improvement Research Series (SIRS). CloseUp #10 September 18, 2006, <http://www.nwrel.org/scpd/sirs/5/cu10.html>

About the Author

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About READ:OutLoud

U.S. students with Bookshare memberships who have qualified print disabilities can download the READ:OutLoud Bookshare Edition text reader for free. The software is available for Windows and Mac and reads Bookshare books in DAISY format.

For students who do not qualify for a free Bookshare membership, the full version of READ:OutLoud (Windows and Mac) will provide access to common digital file formats, including Bookshare books in DAISY, rtf, pdf, html, and xml.

Both software versions include reading templates to leverage comprehension and fluency strategies recommended by the National Reading Panel and Reading Next Report. A web browser enables access to the Internet where students take study notes using an e-highlighter, look up word definitions using a Franklin Talking Dictionary and accurately cite research using a bibliographer. Watch a demo at: http://www.donjohnston.com/media/flash/product_demo/readoutloud/

