

# Bookshare.org supports student readers

By Ann Harrison

Seventh grade students Tyler Norwood and Saleena Cerrillo did not look forward to their reading assignments last year. The two students, who attend the Corte Madera School in Portola Valley, California, say it was difficult for them to stay focused and hard to remember details from books that they needed to include in their writing assignments.

According to Norwood and Cerrillo, all of that changed this past fall when Kim Brown, an assistive technology specialist for the Portola Valley School Dis-

trict, downloaded electronic books on to their school laptops and introduced a software program that reads the books aloud in a human voice. "When I have the program reading the book to me, I can visualize what's going on in the story so it's a lot clearer," says Norwood. "I understand it more and I can plug it into my mind so I can remember it."

To get Norwood started on his digital reading adventure, Brown downloaded two of author Gary Paulsen's wilderness survival novels, *Hatchet* and *Brian's Winter* from Bookshare.org and

taught Norwood to use the Kurzweil 3000 software that reads the words of the book aloud. Norwood discovered that he could take notes and look up words while listening and reading along on screen. He took the school's laptop home at night, finished *Hatchet* on time and wrote a detailed story analysis. Norwood is now reading the first book in Gordon Korman's Everest mountaineering trilogy. "So far it's pretty good," says Norwood, "I'm getting more and more into it as I keep reading."

Norwood is one of about 12,000 people who are read-



*Scanning and validation manager Carrie Karnos ensures that each book in the Bookshare.org digital library is proofed for errors.*

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*Tyler Norwood, a seventh grade student at the Corte Madera School, listens to book from Bookshare.org with the Kurzweil 3000 audio software.*



*Tyler Noorwood and his special education teacher Nina Clinton use Bookshare.org and other assistive technology tools at the Corte Madera School.*

ing Bookshare.org's digital texts with assistive technology. The service offers more than 35,000 books, magazines and newspapers to a worldwide community that cannot easily read a traditional book. Launched in 2002 by the nonprofit technology organization Benetech, Bookshare.org is now the largest on-line digi-

tal library of accessible books in the United States.

Bookshare.org files are easily converted to assistive technology best suited to a student's particular needs, including large print, Braille, synthesized speech, CD, DVD and/or MP3 digital audio. Benetech has developed a technical conversion process that transforms scanned

book files into the worldwide DAISY/NISO digital talking book standard and the digital Braille (BRF) format. The DAISY/NISO standard allows the distribution of digital books with indexing and bookmarking features that allows readers to navigate quickly from one part of a book to another – a critical task that readers of regular books take for granted.

The collection of books in the Bookshare.org library has been shaped by members and volunteers who submit books they have scanned. Teachers can download desired books, request that new educational content be added to the library, and register students for individual Bookshare.org accounts. Readers subscribe to the Bookshare.org library which resembles Amazon.com meets Napster meets Talking Books for the Blind, but legal! A special provision in U.S. copyright law gives qualified nonprofit organizations, such as Benetech, the ability to distribute copyrighted materials in a specialized format for use by print-disabled people without requiring permission. Among the Bookshare.org titles are bestselling popular books, including books on the current New York Times best-seller list and the Harry Potter series. Over 150 newspapers and magazines are also available daily through Bookshare.org in partnership with the National Federation of the Blind through its NFB-NEWSLINE service.

To comply with copyright law and agreements with publishers and authors, Bookshare.org users must provide proof of a print disability, such as blindness, low vision, a reading disability, or a mobility im-



Saleena Cerrillo, a seventh grade student at the Corte Madera School, highlights words while listening to the Kurzweil 3000 audio software read books from Bookshare.org.



Saleena Cerrillo, a seventh grade student at the Corte Madera School, uses the Inspiration software to map out characters in the books she reads from Bookshare.org.

pairment that makes it difficult or impossible to read standard print. Carolyn Schwartzbord, Director of Special Education for the Portola Valley and Woodside school districts, supported Bookshare.org memberships for students and secured grant funding for the assistive technology pilot project at the Corte Madera

School. Schwartzbord and Brown say that digital texts have allowed students to read at a higher level. “In the past class for special ed kids, we used lower reading level text books that were dumbed down and not that interesting,” said Schwartzbord. “But with this assistive technology and Kim working with the teachers,

we were able to use general education text books.”

It is estimated that only five percent of printed materials worldwide are currently produced in accessible formats. The Bookshare.org library allows members and non-members to search for book titles and offers public domain books to readers with or without a disability. Brown says it has sometimes been difficult to order digital textbooks from publishers, but she makes sure that the books her special education students read for their English, social studies and science classes are scanned and available in a digital format. According to Schwartzbord, the school is now developing testing criteria to document improvements in the reading fluency and comprehension of students who use these books.

“When our science teacher says read chapter five, I can just put my headphones on at my laptop and press play on chapter five and it starts reading to me,” says Norwood. “I have it done a lot faster and I can remember it. It’s a good program, my grades last year have really gone up.”

Norwood’s classmate, Saleena Cerrillo, is skillfully using several assistive technology tools to help her navigate a challenging text from Bookshare.org. Brown downloaded all forty-seven chapters of Louisa May Alcott’s dense literary classic *Little Women* onto Cerrillo’s laptop. Cerrillo selected a female voice from the Kurzweil book reader software and launched into the text. “For people like me, who need to hear and visualize a book, it is the perfect thing because you can do both,” says Cerrillo.

Cerrillo uses the Inspiration software tool to visually map out characters and plot developments as she reads. She also reviews chapter summaries with the SparkNotes study guide software which helps increase her comprehension and organize her thoughts. Cerrillo, is now on chapter twenty-one of *Little Women* and has used the Kurzweil program to read thirty-two chapters of another book, *I, Coriander*. "It's good for long books because it keeps you motivated and focused," said Cerrillo.

Norwood and Cerrillo's special education teacher, Nina Clinton, says combining on-screen digital texts with an audio program is superior to books on tape because it allows a multi-modality approach that permits students to see the words as they listen along. Given a choice between taking a test in print and hearing the scanned test via the Kurzweil reader, Clinton says all her students opted for the audio version. The students in her class have the intelligence to learn, says Clinton, they just learn differently.

"Some kids have trouble tracking, their eyes don't work the way they should and they get lost on the page. And some kids don't learn well auditorally, they have to see it," says Clinton. "This gives them an opportunity to access information they wouldn't otherwise have and an opportunity to show how well they can perform. It makes a huge difference in their learning, their success and self esteem because they can be successful in their reading and writing."

Administrators at the Corte Madera School say they have been surprised at how fast their assis-

sive technology pilot has caught on with students and teachers. Brown has scanned almost 18,000 pages of literature and textbooks in addition to the books downloaded from Bookshare.org. Motivated partly by the needs of her own son, who is enrolled in special education classes at the school, Brown has developed an assistive technology lab class to teach students how to use the tools. Those sitting in on the classes have been struck by how focused the student readers have become.

"I was amazed to see how engaged they were. And the types of books they have, I have never seen them reading before," said Joel Wilen, principal of the Corte Madera School. "I have been in education a long time and I think this is something incredibly powerful that I wish I had as a teacher a long time ago. It is really going to revolutionize learning for a certain group of kids."

While organizations that serve the disabled estimate that two million students in the United States require alternative formats for print materials, there is still a profound lack of accessible educational materials, including textbooks. When accessible educational materials are available, the books and the assistive technology needed to access them are often expensive for schools to provide.

The Bookshare.org service costs each subscriber a \$25 sign-up fee plus \$50 annually for an unlimited number of books. Bookshare.org provides subscribers with free, PC-based DAISY book reader software that allows users to read books aloud without other assistive technology. Bookshare.org's texts in the DAISY format can also be read in a

standard Web browser, allowing users to browse Web pages with their screen reader, screen magnifier, dyslexia reading software and/or Braille display.

After years of financing Bookshare.org on a shoestring with grants and subscription fees, the federal government stepped in last year to make the service even more accessible. In October of 2007, the U.S. Department of Education awarded Benetech a \$32 million, five-year contract to dramatically expand the Bookshare.org collection and provide each U.S. student with a print disability free access to the service. Teachers of disabled students and educational agency staff members also receive free Bookshare.org accounts that allow them to search the catalogue of immediately available titles.

The Bookshare.org technology has allowed the service to expand while keeping costs down. Almost 1,000 Bookshare.org volunteers and a few paid staffers published more than 5,700 new digital books on Bookshare.org in 2006. The U.S. Department of Education funding will allow the Bookshare.org for Education project to add more than 100,000 educational books to its collection in the next five years and deliver millions of books for free to disabled students. Bookshare.org is currently adding 150 to 200 new books each week to its on-line library. It has permission to distribute about 3,000 copyrighted titles to people with print disabilities worldwide and offers texts in both English and Spanish. The goal of Bookshare.org is to expand its library to serve readers around the world.

In an effort to make educational books accessible to all students with print disabilities in the U.S., Benetech is working with publishers, authors and technology companies, such as Adobe, Microsoft and Google, to gain access to digital content. Bookshare.org is expanding its partnerships with publishers and has established agreements with leading technology book publisher, O'Reilly Media, and Scholastic. To the extent possible, Bookshare.org accepts books provided by publishers in the National Instructional Materials Accessibility Standard (NIMAS) format, and converts these into DAISY digital talking book and digital Braille formats.

As Bookshare.org expands, schools are also finding new applications for assistive technology. Schwartzbord says improvements in her students' reading skills are so evident that the science teachers have now asked for audio versions of their textbooks that can be used by students who are not enrolled in special education classes. Principal Willen says the Corte Madera School is now trying to find ways to make digital books, especially textbooks, available in audio format to all the school's 372 students in the fourth through eighth grades.

Willen has also invited teachers from other schools to come observe the special education classes at the Corte Madera School. If they have the resources to use assistive technology, he recommends that they recruit a technical support person on site to help train teachers and students.

Brown, who is credited by her colleagues for making the program a success, recently made a presenta-

tion to a gathering of teachers and school administrators from schools in her area. She is also encouraging the elementary school in her district to help third graders read with audio input. By the time they arrive at the Corte Madera School, Brown hopes that these students will feel comfortable with assistive technology and are prepared to read more advanced Bookshare.org texts with a variety of software tools.

"What I see is the application for kids beyond the special education program," says Willen. "Kids who are not reading as well as they could can also benefit from this program so we are looking at how we can provide opportunities for other kids as well. I'm sure there are teachers here who want to incorporate this in their classroom."

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