TECH-NJ 2008 Assistive Technology for People with Disabilities

The College of New Jersey, School of Education Department of Special Education, Language and Literacy

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READING TO LEARN: COMPENSATING WITH TECHNOLOGY

by Amy G. Dell

Reading is both a subject area that students mustmasterandameansbywhichstudents learnother subjectareas. In the early grades (K-3) the primary focus of schools is on reading instruction, on children "learning to read," while from grade 4 and up, the focus shifts to children "reading to learn." Being able to read and understand textbooks and otherassigned readings is absolutely critical foracademic success, especially as students move on to middle school, high school and college. Middle, high school and college studentsarerequiredtocompleteextensive amounts of reading on a daily basis - textbooks, works of literature, journal articles, reference materials - most of which have readability levels well beyond the skills of most students with learning disabilities (Boyle, Washburn, Rosenberg, Connelly, Brinckerhoff & Banerjee, 2002). Slow readers and students with reading comprehension problems struggle to complete their reading assignments and fall behind in their work because they cannot "keep up with all the reading." This is not only frustrating and stressful, but it interferes with their learning of the subject matter.

Some students get through high school by having their parents or instructional aides read their textbooks to them. (Some simplydonotcompletethereadingand"get by" by paying attention to class lectures.) These may be short-term solutions, but in the end, they are a disservice to students; when teenagers attempt to attend college or hold a job they find they are unable to complete their reading assignments on their own.Therefore, students with reading difficulties stand to benefit significantly fromcomputertechnologythatcanincrease their independence in reading. One such application is called scan/read systems.

Scan/Read Systems

Scan/read systems combine the use of a computer, a scanner, optical character recognitions of tware, and speech output to readaloudany printed text while providing a visually-enhanced display on a computer monitor. Users of scan/read systems place thepagestobereadonaflatbedscannerand click the "scan" button. (Using a document scanner instead of a flatbed scanner is a faster alternative.) The print is then converted into an electronic file, similar to a word processing file. Scan/read programs then speak the words on the screen while highlighting the corresponding text. This provides a "synchronized auditory and visual presentation of the text" (Hecker, Burns, Katz, Elkind & Elkind, 2002). Optional highlighting in color helps readers keep their eyes on a line of text, while the speech output provides ongoing auditory feedback.

Two of the most popular, full-featured scan/read systems, Kurzweil 3000 (Kurzweil Educational Systems) and WYNN (Freedom Scientific), offer features that are designed to meet the needs of people whostrugglewithreadingcomprehension. Both programs offer options to change the appearance of the visual display and to set the reading speed to match the user's preference. They also offer "embedding tools," (Anderson-Inman and Horney, 1999), for example, a talking dictionary and thesaurus, electronic highlighters to assiststudentsintakingnotesandpreparing study guides, voice notes, and yellow "sticky notes" for inserting hidden prompts and reminders.

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TECH-NJ is written by students, staff and faculty in the Department of Special Education, Language and Literacy at The College of New Jersey. It is designed to support professionals, parents, and computer-users in their efforts to use technology to improve our schools and to enhance the lives of people with disabilities. In order to facilitate local networking, emphasis is placed on resources and innovative practices in and around the New Jersey region.

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FDITORIAL

Happy Anniversary, TECH-NJ! Yes, it has been 20 years since the very first edition of TECH-NJ rolled off the press. The cover story in that first issue was on the Prison Braille Project in Bucks County, Pennsylvania. Bill Ziegler, an assistive technology specialist from the Bucks County Intermediate Unit #22, trained inmates to convert textbooks into Braille for the county's blind students. The inmates did this by retyping the texts on an Apple IIe and Apple IIGS computer using a program called BEX (Braille Edit Express) and converted the word processing files into Braille using the BEX translator program. Gail Polzer, teacher of the blind/visually impaired, then took the floppy disks and used a Braille embosser to create Braille books for the students. As a result of this unusual collaborative effort, blind students had timely access to their textbooks and were able to keep up with their schoolwork.

Twenty years later and the Bucks County Prison Braille Project is still in operation! Technology has come a long way since it began. Scanners and optical character recognition software have eliminated the need to retype textbooks and have speeded up the process considerably. Several websites (such as Project Gutenberg and Bookshare.org) offer electronic versions of books that can sometimes eliminate the need for scanning. The most recent reauthorization of IDEA includes support for the National Instructional Materials Access Center (NIMAC). But the problem of providing timely access to textbooks in alternate formats remains. The NIMAC is not yet operating at full capacity, and even when it does, the IDEA requirement applies only to the K-12 world, not to college textbooks. Scanning is a time-consuming process, and many school districts and colleges have not been able to develop efficient procedures for scanning textbooks into alternate formats. As a result, many students with visual impairments or learning disabilities still do not have access to their reading assignments. Clearly some kind of creative solution is called for.

Inspired by the thinking-outside-the-box quality of the Prison Braille Project, staff at the Adaptive Technology Center for New Jersey Colleges took the opportunity of one-time supplemental funding from the New Jersey Commission on Higher Education to design a pilot project that is exploring the possibility of providing a textbook scanning service to colleges in the state. We are setting up a scanning/editing station with a high-speed scanner and powerful optical character recognition software, and plan to determine the feasibility of offering textbook scanning for college students with print disabilities on a fee-for-service basis. We will be working with disability support offices at colleges around the state, several of whom have expressed interest in using such a service. The high-speed scanning will be the easy part; what will be tricky will be determining the best proofing and editing process, training student workers to scan and edit, and coming up with a viable protocol for requesting the service. The pilot project runs through December 2008, so we expect to announce our findings on the Adaptive Technology Center website (http://adaptivetech.tcnj.edu) and in next year's issue of TECH-NJ. If you have a textbook you need in alternate format for the fall semester, are willing to have the binding cut off, and are interested in helping us work out these procedures, please contact the Adaptive Technology Center at (609)771-2610 or adaptivetech@tcnj.edu.

For additional information on books in alternate formats and the NIMAC, please see the article that begins on the cover. For additional information on Bookshare.org, please turn to page 12.

A. G. D.

USER PROFILE

ASSISTIVE TECHNOLOGY PROVIDES INDEPENDENCE FOR BLIND HIGH SCHOOL SENIOR

by Becky Lovett

Trevor Saunders is a gifted mathematician working at honors levels in both math and science at Central High School in the Hopewell Valley Regional School District. An 18-year-old high school senior, he is currently enrolled in three advanced placement courses and tutors other students in chemistry. He recently became an Eagle Scout by completing a project to make the Watershed Nature Conservancy in Hopewell Township accessible for the blind. Last summer he went on a service project with a school group to

Kenya.

Trevor's Early Years

Trevor has accomplished all of this despite being blind. He had been visually impaired until his freshman year in high school, when he lost his remaining functional vision and became blind. He had received services from the New Jersey Commission for the Blind and Visually Impaired from

anearlyageandhadbeenintroducedtothe computer as a tool for academics. He had been reluctant to learn Braille even though consultants from the Commission for the Blindhadanticipatedthathewouldneedto use it one day. After he lost his vision totally, the first form of help he accepted was tutoring on the use of JAWS screen reading software (Freedom Scientific). JAWS can read aloud everything on a computer monitor-menus, sub-menus, dialogboxes, and icons, as well as text - and provides complete access to computers and the internet for people who cannot see. Trevor maintained his grades and above gradelevel academic standing using JAWS while he learned Braille.

In the succeeding years, Trevor adapted to his condition by learning not only literary Braille, but also the Nemeth code for Braille math. Now that Trevor has lived for almost four years with total blindness, he has also learned independent orientation and mobility skills using a white-tipped cane.

Providing Access to School Assignments

Trevor receives support services three days a week from Mrs. Marilyn Winograd, a teacher of the blind, who was hired by the school district. She converts his printed assignments into accessible formats – either digital format or Braille. She translates assignments into Braille using a Perkins Brailler or scans them into a computer using Kurzweil 1000 (Kurzweil Educational Systems). She then uses Duxbury software (Duxbury Systems Inc.) to translate them into Braille. From Duxbury they are sent to



Trevor working on a school assignment using JAWS screen reading software.

a Versaport Duo TSI Embosser (Freedom Scientific) for Braille embossing. Kurzweil 1000 is also used to scan assignments for use in digital format. The Hopewell Valley Lion's Club donated the Braille embosser to Trevor as part of their commitment to serve people with visual impairments in their community.

All of Trevor's assignments are converted into accessible formats - either digital format or Braille. They can be printed in Braille, or he can read them using the JAWS screen reading program on his laptop.

Classroom teachers bring assignments to Mrs. Winograd if they are not yet in digital format. However, in order to encourage Trevor's independence, teachers provide him with any work that is available as a Microsoft Word file. They either email it to him as an attachment or save it to his USB flash drive. Trevor then uses JAWS screen reading software to read the file aloud. He carries a laptop computer provided by the school district with him throughout the school day. In class, he uses one ear piece to listen to JAWS while simultaneously listening to the teacher and the lecture.

Providing Reading Materials in Alternate Formats

Mrs. Winograd orders all of Trevor's textbooks in Braille from the Braille production center of the New Jersey Commission for the Blind and Visually Impaired. For literature reading assignments she borrows digital books – CDs in DAISY format from Recording for the Blind and Dyslexic (RFB&D). Trevor listens to the CD's using a portable reading device calles the Victor Reader Vibe (HumanWare).

For math Trevor prefers to use Microsoft Excel with JAWS. He has audio graphing calculator software (ViewPlus Technologies) and MathTalk (Metroplex Voice Computing, Inc), which is voice recognition software for Scientific Notebook (MacKichan) that can interface with Duxbury and be sent to his Braille embosser. However, he has chosen not to use this method. He also only rarely uses his Orion Talking Scientific calculator. Trevor is more familiar with the command structure of Excel and likes that he can just type in what to do and not have to press so many buttons.

Independent and Heading to College

In the years since his school district has employed a teacher of the blind to work with him, Trevor has become independent while in class and for a substantial portion of his learning tasks. He regularly makes

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Assistive Technology for Blind Student (continued from page 3)

honor roll with a schedule that includes three advanced placement courses. I have watched as he used a Dell laptop computer with JAWS screen reading software to produce an English assignment and print it out completely independently. He asked for help only to identify his paper from a stack of papers he had retrieved from a network printer on the other side of the library. He had chosen the correct printer from two or three in a bank. He traversed the library, brought the stack of papers back to me and then returned those that were not his back to the printer across the library.



Classmates and staff respect the importance of Trevor's technology setup.

Trevor has clearly benefited from the team approach in his school district. His success is partially due to teachers who haverecognizedhispotentialandembraced his need to use technology to complete his schoolwork. He is currently awaiting admissions decisions from top level colleges around the region. With his rigorous academic preparation, his strong technology and self-advocacy skills, and his determination to be independent, he will certainly be successful in college.

Becky Lovett is an Occupational Therapist in the Hopewell Valley Regional School District and an alumna of The College of New Jersey (M.S. in Educational Technology).

Reading to Learn

(continued from page 1)

The talking dictionary is a good example of how embedding tools can help students whohavereadingcomprehensionproblems. When a student with reading problems encounters an unfamiliar word, the suggestion to "look it up in the dictionary" is not terribly helpful. Dictionaries, even electronic dictionaries, tend to cram a lot of text onto a single page; the font is quite small and spacing is tight. The student with reading problems often cannot find in English class and take tests. The results revealed that scan/read software "allowed thestudentstoattendbettertotheirreading, to reduce their distractibility, to read with less stress and fatigue, and to read for longer periods of time. It helped them to readfasterandtherebytocompletereading assignments in less time."

Scan/read programs are powerful tools that can help students with learning disabilities compensate for their reading and study skills problems. However, simply providing students with software is notenough.Studentsneedtobetaughthow to use the features in these programs, and



WYNN highlighting feature

the word in the dictionary to begin with, and if s/he manages to locate it, reading thesmall print and understanding it present additional difficulties. Contrast that with the talking dictionaries that are embedded in scan/read systems. The student simply clicks on the unfamiliar word, then clicks on the dictionary icon, and the program immediately displays the dictionary entry for that word and will read it aloud when the student clicks the "read button." In addition, another simple click of the mouse will copy the definition to the computer clipboard so the student can create a customized vocabulary list that can be studied later.

The impact of scan/read software on thereadingperformanceofpost-secondary students with attention disorders was demonstrated in a research study by Hecker, Burns, Katz, Elkind and Elkind (2002). Twenty students were trained to use the Kurzweil 3000 and over the course of a semester used it to read assignments schools need to develop implementation plans that identify a specific person who will be responsible for scanning the texts and preparing it for student use.

Alternative to Scanning Text: e-Text

One of the obstacles standing in the way ofwide-scale implementation of scan/read technology is that scanning documents takes guite a bit of time. Unless a school has access to a high speed scanner and it is acceptable to tear the bindings off books, scanning requires a person to stand at a flat-bed scanner and scan one page at a time. This is easily done for a few pages of reading material, but when it comes to entire books, it can take hours. Therefore, it is important for teachers to become knowledgeable about internet sites that provide files of text that are already in electronic format. Called e-text, these are files of books or other printed material that someone else has already converted into a

computer file. Most literature that is in the public domain, such as all of Shakespeare's plays, is available for free download from internet sites such as Project Gutenberg (www.gutenberg.net). Instead of scanning in Hamlet for a high school student, for example, the file can be downloaded from the internet and read aloud using ascan/read system such as WYNN or Kurzweil 3000. The student benefits from all of the features and embedding tools in the software, but the need for time-consuming scanning is eliminated.

NIMAS/NIMAC

In the most recent reauthorization of IDEA (2004) a provision was added to ease the problemofprocuringtextbooksinalternate formats. Called the National Instructional Materials Accessibility Standard (NIMAS), this provision was clarified in 2006 when the U.S. Department of Education, Office of Special Education Programs (OSEP), publishedspecificregulations in the Federal Register. The NIMAS standards guide publishers in producing digital versions of textbooks that can be easily converted to accessible formats such as braille, audio, e-text, and/or large print (CAST, 2006). Publishers are now required to use these standards when preparing source files for K-12 textbooks and need to provide these files when requested by state and local education agencies. The regulations also reaffirm the responsibilities of state and local education agencies to provide students who have print disabilities with alternate-format versions of textbooks in a timely manner (CAST, 2006).

K-12 textbook publishers are now

required to prepare NIMAS files sets for deposit in a national repository of digital materials (CAST, 2006). Known as the National Instructional Materials Access Center (NIMAC), the repository is hosted by the American Printing House for the Blind. NIMAC will provide states and local education agencies with textbook files that follow the NIMAS standard and therefore, will be easily converted to alternate formats. No such requirement exists for publishers of textbooks in higher education. Advocates for college students who are blind are pushing for comparable legislation.

Scan/Read for Students who are Blind/Visually Impaired

Students who are blind/visually impaired also benefit from scan/read technology. Their needs are different from students with learning disabilities. They do not have reading comprehension problems -in fact, many are fluent Braille readers -but they face significant barriers in gaining access to printed materials in a timely manner. They often use scan/read systems when they need quick access to print, for example, to read the morning newspaper, their mail, professional reports, and legal documents. Kurzweil 1000 (Kurzweil Educational Systems) and OpenBook (Freedom Scientific) are two popular scan/ read systems designed to meet the needs of people who cannot see printed text. These scan read systems offer many of the same features as WYNN and Kurzweil 3000, but theirinterfaceiseasiertouseforpeoplewho cannot see the screen. Tasks that users with learning disabilities do with a mouse, such

navigating

can be

"hot keys"

function

some



they are far more efficient than using the mouse for users who are blind.

Other Compensatory Reading **Tools: Recorded Books**

In addition to scan/read programs, there are other forms of technology that can help older students who struggle with reading comprehension. Books-on-Tape is a service that has been available for many years. The books were read aloud by readers and recorded on four-track tapes that had to be played back on special fourtrack tape recorders.

Today organizations like Recording for the

DAISY Format (Digital Accessible Information SYstem)

DAISY is an international consortium of libraries and organizations for people with print disabilities. Its mission is to ensure that all people have access to published material through the development of an internationalstandardandimplementation strategies for the production, exchange, and use of digital talking books. This standard features an accessible, featurerich, easily navigable format. RFB&D's Audio-Plus recordings use the DAISY format. Many books available from Bookshare.org are in the DAISY format.

Blind and Dyslexic (RFBD) have moved from four-track tapes to digital books on CD, which use the DAISY format (see sidebar above). The advantage to digital recordings is that, unlike tapes, they do not have to be navigated in sequential order from beginning to end. Users can start the book at any place, can insert bookmarks at any point, and can easily navigate from one page or chapter to another, or from one bookmark or heading to the next. This ease of navigation affords students the opportunity to use pre-reading strategies that can increase their comprehension and learning. One such strategy is the SLiCK (see sidebar on page 6), short for Set up, Lookahead, Comprehend, Keepit together (Boyle, Washburn, Rosenberg, Connelly, Brinckerhoff & Banerjee, 2002). To listen to RFB&D's digital books, students need either a special portable CD player

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Reading to Learn

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or a standard computer equipped with specialized software. (Visit www.rfbd.org for details on these playback options). It is importanttonotethatforcopyrightreasons, organizations like RFB&D require their memberstoprovidedocumentedevidence of a print disability before they can borrow digital books.

Commercially-Available Audio Books

Other sources of recorded books are commercial bookstores and web-based businesses that are targeted at the general public. With the popularity of portable CD players, car audio systems, and MP3 players such as the iPod, listening to recorded books has become a popular activity in our society. People listen to books as they commute, work out in gyms, jog, or just walk around. They borrow recorded books from public libraries, buy them in bookstores, and download them from web-based services such as Audible. com or iTunes.

Students need to be taught how to use the features in scan/read programs, and schools need to develop implementation plans that identify a specific person who will be responsible for scanning the texts and preparing it for student use.

Commercially available recorded books typically focus on bestsellers and popular fiction and nonfiction titles, not on textbooks. However, anecdotal evidence suggests that if given a choice, teenagers would prefer to listen to a recorded book on an iPod, rather than a "special" device. For students who do not need to see modified or enhanced text on a computer monitor, it is likely that in the next few years schools will see the format of compensatory reading tools shift from "special playback devices" to MP3 players and other popular electronics.

SLICK STRATEGY for Use with Audio Books

- 1. The student gets all materials Set up: S/he opens the textbook to the correct page, places a SLiCK worksheet on the desk, and loads the CD into the playback device.
- 2. The student Looks ahead through the chapter (both the printed textbook and the audio book), noting the headings, subheadings, keywords, and vocabulary, in order to think about what is coming up and access prior knowledge about the subject.
- 3. ThestudentComprehendsthetext by listening to the audio book and following along in the text. This step includes pausing the CD to write important points on the SLiCK worksheet and writing a summary of what was learned.
- 4. The student now must Keep it together must combine the summaries to comprehend the entire reading, "to get the bigger picture."

(Boyle, Washburn, Rosenberg, Connelly, Brinckerhoff & Banerjee, 2002)

References

Anderson-Inman, L. & Horney, M. (1997). Electronic books for secondary students. Journal of Adolescent and Adult Literacy, Vol. 40, No. 6.

Boyle, E. A.; Washburn, S. G.; Rosenberg, M. S.; Connelly, V. J.; Brinckerhoff, L. C. & Banerjee, M. (2002). Reading's SLiCK with new audio texts and strategies. Teaching Exceptional Children, Vol. 35, No. 2, pp. 50-55.

CAST (2006). What is the National Instructional Materials Accessibility Standard (NIMAS)? Retrieved from

http://nimas.cast.org/about/nimas.

Hecker, L.; Burns, L.; Katz, L.; Elkind, J. & Elkind, K. (2002). Benefits of assistive reading software for students with attention disorders. Annals of Dyslexia, Vol. 52, 243-273.

Scan/Read Systems Product Information

For students who are blind/visually impaired:

OpenBook 8.0 (Freedom Scientific) www.freedomscientific.com \$995 (Single user - Windows only)

Kurzweil 1000 (Kurzweil Educational Systems) www.kurzweiledu.com \$995 (Single user - Windows only)

For students who have learning disabilities:

WYNN (Freedom Scientific Learning Systems Group) www.freedomscientific/lsg.com WYNN Wizard (with OCR for scaning capabilities) - \$995 WYNN Reader (read only) - \$375

(WYNN is available for Windows only)

Kurzweil 3000 (Kurzweil Educational Systems)

www.kurzweiledu.com

\$1,495 Single User Professional Color (with OCR for scanning capabilities) \$1,095 Single User Professional Black/White (with OCR for scanning capabilities)

\$395 Single Learn Station (read only)

(Kurzweil 3000 is available for Mac and Windows)

Network and multiple license options are available for all products.

Amy G. Dell is a professor in the Department of Special Education, Language and Literacy at The College of New Jersey and editor-in-chief of TECH-NJ.

For additional resources:

Assistive Technology in the Classroom: Enhancing the School Experiences of Students with Disabilities (2008) by Amy G. Dell, Jerry G, Petroff and Deborah A. Newton, Pearson/ Merrill/Prentice Hall.

AHEAD

E-Text Institute at The College of New Jersey June 5, 2008 & June 6, 2008 9:00 - 3:30

NJAHEAD and National AHEAD's e-Text Solutions Group is offering a 2day workshop for higher education disability support staff and technology support staff.

Presenter: Ron Stewart

- VP of Operations for Dolphin Computer Access
- Founding Director, Northwest Center for Technology Access at Oregon State University
- President, Access Technologist Higher Education Network
- Post-secondary Represenative, NIMAS Development Committee
- Chair, AHEAD E-Text Solutions
 Group

Day 1: Management

and Administration

- Policies
- Applicable Law
- Roles and responsibilities for students, staff and technology support
- Procedures for obtaining and utilizing e-text
- Model programs

Day 2: Production Issues and Techniques

- Scanning issues and procedures
- Imagining solutions
- Formatting
- Optical Character Recognition (OCR) using Abby FineReader

Enrollment limited to 30. Registration fee is \$50. For more information, or to register, contact jfischer@ocean.edu.

NJ Regional Centers for College Students with Disabilities

New Jersey supports eight centers located throughout the state that provide direct assistancetoauditorilyimpaired, visuallyimpaired, and learning disabled students. The goal of the centers is to provide integrated, individualized, direct services to students and technical assistance to other colleges and universities in the state. The Special Needs Grant Program is funded and administered by the New Jersey Commission on Higher Education.

Adaptive Technology Center for New Jersey Colleges

at The College of New Jersey Director: Amy Dell (adaptivetech@tcnj.edu) (609) 771-2610; http://adaptivetech.tcnj.edu

Learning Disability Centers

Project Assist at Cumberland County College Director: Meredith Vicente (mvicente@cccnj.edu) (856) 691-8600 ext. 282; www.cccnj.edu/projAssist

Regional Center at Fairleigh Dickinson University Madison Director: Paul Vico (vico@fdu.edu) (973) 443-8734 Teaneck Director: Vincent Varrassi (varrassi@fdu.edu) (201) 692-2298 www.fdu.edu/studentsvcs/rcsld.html

Central Regional Connections at Middlesex County College Director: Mary Jane Warshaw (Mary_Jane_Warshaw@middlesexcc.edu) (732) 906-2507; www.middlesexcc.edu/acadsupport/control.cfm/ID/74

Project Mentor at New Jersey City University Director: Jenn Aitken (projmentor@njcu.edu) (201) 200-2091; www.njcu.edu/PMentor

Project Academic Skills Support at Ocean County College Director: Maureen Reustle (mreustle@ocean.edu) (732) 255-0456; www.ocean.edu/campus/student_services/drc/pass.htm

Deaf and Hard of Hearing Centers

Center for Collegiate Deaf Education at Bergen Community College Director: Tia Gardner Ivanko (tgardner@bergen.edu) (201) 612-5270, (201) 612-5325 TTY; www.bergen.cc.nj.us/oss/ccde.asp

Mid-Atlantic Postsecondary Center for Deaf & Hard of Hearing at Camden County College Director: To be announced (856) 227-7200 x 4506, (856) 228-1897 TTY; www.camdencc.edu/dhoh

Converting Electronic Text into MP3 Files

Adaptive Technology Center for New Jersey Colleges

The ability to access print material in audio formals is a powerful tool for students who have reading difficulties. This resource sheet provides stepby-step instructions on how to convert electronic text into MP3 files that can be listened to on iPods and other portable MP3 players.

Converting Electronic Text into Audio Formats

TextAloud is text-to-speech software that uses voice synthesis to create spoken audio from text. You can listen to text spoken by AT&T Natural Voices directly on your PC or save text to MP3 or wave files for listening later. *TextAloud* reads text from email, web pages, Word documents and most PDF files aloud on your computer. It can convert these files into MP3 or Windows Media files ready for playback on your PC, PocketPC, or even on your TV with Tivo's Home Media Option. College students can now convert their required reading assignments into a portable audio format so they can study/read on the go. *TextAloud* can be downloaded for a 30 day demo at www.textalaud.com.

To convert lext to an audio file in *TextAloud* simply follow the steps below:

- 1. Open text in TextAloud
- 2. Click on the "To File" Button
- 3. Select location to save audio file
- 4. Enter a file name and dick "OK."

Epeak C.no T.Fie



Example of audio file created in TextAloud

To listen to audio file:

- 1. Browse to saved audio file and open using your computer's audio player.
- You may choose to burn your MP3 files to a CD, transfer them to a MP3 player (iPod, cell phone, etc.) or store them on your US8 thumb/key drive.

WYNN & Kurzweil 3000, two powerful scan-read software programs now offer options to save text files in an audio format.

To create an audio file in WYNN, follow the steps below:

- 1. Open a document using WYNN.
- 2. Select the File menu and choose the Save to Audio command.
- 3. The Save Pages dialog box appears.
- 4. Do one of the following:
 - Select the Save Current Page radio button to convert only the current page to an MP3 or WAV file.

OR

- Select the Save Page Range radio button to convert the entire document or a range of pages to an MP3 file.
- 5. Select the OK button. The Save As dialog box appears.
- 6. Enter a file name in the File name edit box, and select the Save button.

Adaptive Technology Center for NJ Colleges at The College of New Jersey P 2017

To listen to the file:

- 1. Select your WYNN file folder icon, which appears on your desktop.
- 2. Select the MP3 or WAV file.
- 3. The file opens using your default audio player.

Product information for WYNN can be found at: www.freedomscientific.com/WYNN/index.asp

To create an audio file in Kurzweil 3000, follow the steps below:

- 1. Open the text you would like to convert in Kurzweil 3000.
- 2. Select the File drop down menu, chose Audio Files then Create Audio File:
 - a. File > Audio Files > Create Audio File (see image below).
- A window will appear, prompting you to select your reading rate and voice for your audio files. Be sure to test out several different voices and rates before continuing on with the conversion process.
- Under quality select "best" (see image below).
- 5. After changing the options select "OK" and the conversion process will begin.

To listen to the audio file:

- 1. All files will be sent to the Kurzweil 3000 Pending Audio folder on your Desktop.
- After the audio files have finished converting to audio files they will be sent to the Kurzweil 3000 Output Audio folder on your Desistop.
- You may choose to burn your MP3 files to a CD, transfer them to a MP3 player (iPod, cell phone, etc.) or store them on your USB thumb/key drive.



HIGHER EDUCATION UPDATE

SPECIAL INITIATIVES UNDER 2008 SUPPLEMENTAL SPECIAL NEEDS FUNDING

In 1986 the New Jersey legislature passed N.J.S.A. 18A:72H-4 which established the Special Needs Grant Program to assist New Jersey college students who are visually impaired, deaf and hard of hearing, or who have learning disabilities. Through this program, the Commission on Higher Education annually disburses funds to eight institutions in the state to operate regional centers for students with disabilities. Two of these centers specialize in services for deaf and hard of hearing students, and five provide additional supports to students with learning disabilities. The eighth center specializes in adaptive technology and provides services to all of New Jersey's colleges and universities. (See page 7 for a list of the Regional Centers.)

Last year the legislature recognized the accomplishments of the regional centers and appropriated a one-time increase of \$500,000. These funds are being used to support two initiatives: 1) the enhancement of services already offered at each regional center, and 2) the implementation of innovative initiatives. The centers and their funded projects are listed in the charts below.

REGIONAL CENTER	PROJECT ACTIVITIES
Cumberland County College Project Assist	 Conduct a one-day conference to increase awareness and understanding of learning disabilities with keynote speaker, Jonathon Mooney. October TBD. For additional information call (856)691-8600 ext. 282 or email mvicente@cccnj.edu
Fairleigh Dickinson University Regional Center	 Identify, evaluate, and use a software series to remediate deficits in basic skills mathematics. Provide a training workshop for high school teachers and college service providers.
New Jersey City University Project Mentor	 Expand existing summer orientation program to include high school juniors. Add a peer mentoring component.
Ocean County College Project Academic Skills Support	 Offer a speaker series with three national speakers: Richard Harris: A Faculty Member and the Student with a Disability: Value of Universal Design, Thursday, May 1, 2008 at Bergen Community College and Friday, May 2, 2008 at Middlesex County College Robert Brooks - Fostering a Positive School Climate and the Importance of Resilience, Thursday, October 2, 2008 at Ocean County College and Friday, October 3, 2008, location to be announced Richard LaVoie - Turning on the Tuned Out Student, Thursday, December 4, 2008 at Ocean County College and Friday, December 5, 2008 at New Jersey City University
The College of New Jersey Adaptive Technology Center for New Jersey Colleges	 Conduct a pilot project to explore high-speed scanning of textbooks for NJ college students with disabilities. Determine the feasibility of sustaining this service beyond the funding period.

SPECIAL INITIATIVES

SERVICE ENHANCEMENT PROJECTS

REGIONAL CENTER	PROJECT ACTIVITIES
Bergen Community College Center for Collegiate Deaf Education	 Hire five professional notetakers for the spring 2008 semester. Provide special training to the notetakers to use new technology as part of the service.
Camden County College Mid-Atlantic Postsecondary Center for Deaf & Hard of Hearing	 Hire a 'student coach' to assist students with personal and academic concerns, act as an overall student advocate, and serve as a liaison between faculty, staff, sign language interpreters, and college administration. Purchase additional assistive listening devices.
Cumberland County College Project Assist	 To increase student success in developmental math courses: Provide workshops to students to improve study skills. Add supplemental instruction in developmental math courses. Train tutors on strategies for developmental math.
Fairleigh Dickinson University Regional Center	 Provide a speaker series on Successful Transition to College for Students with Learning Disabilities: Vincent Varrassi: Whatever Happened to My IEP? March 11, 2008. Robert Brooks: Building Resiliency in College-Bound Students with Learning Disabilities, April 15, 2008. Scott Marfilius: Assistive Technology for Success in College, May 6, 2008. For additional information call (201)692-2087 or email graceh@fdu.edu
Middlesex County College Project Connections	 Upgrade adaptive computer lab. Add five computer stations equipped with assistive technology software in student study area.
New Jersey City University Project Mentor	 Expand assistive technology inventory. Provide technology training to students, staff, faculty, and community.
Ocean County College Project Academic Skills Support	 Provide leadership training to peer tutors and mentors. Integrate tutors and mentors in Student Success and Developmental Math courses. Provide three-day training institute on diagnostic testing and accommodations. Expand use of technology in the classroom.
The College of New Jersey Adaptive Technology Center for New Jersey Colleges	 Create trouble-shooting guides for assistive technology software. Expand the inventory of the Adaptive Technology Loan Program. Disseminate the New Jersey Higher Education Disability Support Directory to all high schools in the state.

RESOURCES

BOOKSHARE.ORG PROVIDES FREE ACCESSIBLE BOOKS

by Ann Harrison

Bookshare.org, the largest online digital library of accessible books in the United States, offers more than 36,000 books, magazines and newspapers in digital files that can be converted to alternate formats such as large print, Braille, synthesized speech, CD, DVD and MP3 digital audio. Bookshare.org now supports more than 18,000useraccountsthatserveprintdisabled readers, teachers and organizations. In New Jersey 80 school districts and libraries, in addition to 700 residents, are enrolled as members. format for use by print-disabled people without requiring permission from publishers.

Bookshare.org provides members with free, PC-based DAISY book reader software that reads books aloud on a personal computer. 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.

Among the Bookshare.org titles are bestselling popular books including the current New York Times bestseller list and multi-modalapproachthatpermitsstudents to see the words as they listen along. This combination of viewing and listening to digital texts can allow special education studentstoreadtextbooks, fiction and other assigned reading at their own grade level.

\$32 Million Grant to Expand Collection and Membership

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 U.S. print-disabled students of any age free access to the service. Teachers of disabled

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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 lets readers navigate quickly from one part of a book to another.

The Bookshare.org Collection

The Bookshare.org collection is selected 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 encourage students to register for individual Bookshare.org memberships. A special provision in U.S. copyright law gives qualified nonprofit organizations, such as Benetech, the ability to distribute copyrighted materials in a specialized

A sample "members" screen that provides information for downloading a popular middle school literature book.

theHarryPotterseries.Over150newspapers and magazines are also available daily through Bookshare.org in partnership with the National Federation of the Blind through its NFB-NEWSLINE® service. To complywithcopyrightlawandagreements with publishers and authors, Bookshare. org members must provide proof of a print disability, such as blindness, low vision, a reading disability, or a mobility impairment that makes it difficult or impossible to read standard print.

Students Benefit from Reading Books in Electonic Format

Teachers of students with learning disabilities say that combining onscreen digital texts with an audio program offers a

community of readers who have formed book clubs for fans of mysteries, science fiction, romance and other popular genres. The Friends of Bookshare volunteer group reports that literature and fiction are the top category of books in the Bookshare.org library. Members of the group encourage volunteers to scan and submit books to the collection and maintain a wish list of books they cannot wait to read.

org has attracted a lively

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 print disabled students. Bookshare.org is currently adding 150 to 200 new books each week to its online library.Ithaspermissiontodistribute about 3,000 copyrighted titles to people with print disabilities worldwide and offerstexts in both English and Spanish. Bookshare. org is expanding its partnerships with publishers and has established agreements with technology book publisher O'Reilly Media and other leading publishers.

Bookshare.org accepts books provided by publishers in RTF, XML, or the National Instructional Materials Accessibility Standard (NIMAS) format, and converts them into DAISY digital talking book and digital Braille formats. In an effort to make educational booksaccessible to all students with print disabilities in the U.S., Benetech is also working with technology companies such as Adobe, Microsoft and Google to gain access to digital content.

NIMAS Validator Will Ease Editing Problems

In January 2008, Bookshare.org released a free beta version of its NIMAS Validator software that locates errors in digital books produced under the NIMAS Standard. Bookshare.org's NIMAS Validator helps replace the laborious process of human validation by automatically checking key formatting criteria in NIMAS files such as the correct sequence of page numbers and missing images. The NIMAS format is especially important to students with disabilities since recent changes to federal law made NIMAS the standard accessible format for all K-12 textbooks.

The NIMAS Validator is intended for use by organizations creating NIMAS files, such as schools and publishers, who want to verify the accuracy of their digital books beforesubmittingthemtoBookshare.orgor the National Instructional Materials Access Center (NIMAC), a central repository for NIMAS files.

"This application fills an important niche because it's the first NIMAS validator tool that is freely available to people producing digital books," says Reuben Firmin, lead engineer for Bookshare.org. "We are planningtomakemuchofourBookshare.org softwarecodeavailable to the public within the next six to nine months. We welcome support from the open source community to help us improve the algorithms for these validators and converters."

A Partnership to Benefit Students

Bookshare.org and Don Johnston, Inc. have announced a partnership to provide qualified print disabled students with a free text reader to access electronic books from the Bookshare.org library. Beginning at the start of the 2008-09 school year, qualified students will have the opportunity to use Don Johnston's Read:OutLoud Bookshare.org Edition text reader (Windows Version) to access the books, magazines and newspapers in the Bookshare.org library. The text reader offers embedded reading comprehension strategies and instructional supports that align with state educational standards, such as audio feedback, electronic highlighting and note-taking features that allows tudents to effectively capture ideas. A Mac version will follow in 2009.

Ann Harrison is the Communication Director of the Benetech Initiative.

Resources from http://adaptivetech.tcnj.edu

- Links to the NJ Regional Centers
- Downloadable copy of the NJ Higher Education Disability Support Directory
- Assistive Technology Resource Sheets
 - Converting Electronic Text into Audio Format
 - Technology Tools for Students with Learning Disabilities
 - Technology Tools for Students Who are Blind or Visually Impaired
 - Technology Tools for Students Who are Deaf or Hard of Hearing
 - Electronic Text Internet Sites: A Resource Guide
 - Internet Resources to Support Students with Disabilities Through the Use of Technology
 - Accessible Web Page Design Guidelines
 - Assistive Technology Tools for Transition from High School to College
- Online copies of TECH-NJ
- Links to useful assistive technology websites.

Upcoming Events in New Jersey (2008)

Apr 9 at Cumberland County College. Math and Processing Deficits and Math Study Skills/Test Anxiety presented by Dr. Paul Nolting and Kim Nolting, (call 856-691-8600 ext. 282).

Apr 14 at Cumberland County College. Technology and Math presented by Judy Sweeney, (call 856-691-8600 ext. 282).

Apr 15 at Fairleigh Dickinson University. Building Resiliency in College-Bound Students with Learning Disabilities, (see p. 11).

May 1 at Bergen County College. A Faculty Member and the Student with a Disability: Value of Universal Design, (see p. 10).

May 2 at Middlesex County College. A Faculty Member and the Student with a Disability: Value of Universal Design, (see p. 10).

May 6 at Fairleigh Dickinson University. Assistive Technology for Success in College, (see p. 11).

June 5 & 6 at The College of New Jersey. AHEAD E-Text Institute,(see p. 7).

Oct 2 at Ocean County College and Oct 3 (TBD). Fostering a Positive School Climate and the Importance of Resilience, (see p. 10).

Oct (TBD) at Cumberland County College. One-day conference on increasingawarenessand understanding of learning disabilities, (see p. 10).

Dec 4 at New Jersey City University. Turning on the Tuned Out Student, (see p. 10).

Dec 5 at New Jersey City University. NJ Higher Education Opportunities for Students with Learning Disabilities Conference, (call 201-200-2091).

NEW PRODUCTS

ClassMate Reader by HumanWare

The ClassMate Reader is a portable reading system that supports K-12 students who have reading difficulties. It offers many of the same features as the Kurzweil 3000 and WYNN scan/read systems, but in size and design it looks more like a portable gaming system with an LCD screen. Students can listen to an audio version of their textbooks and study materials while following the highlighted text on the screen. Features of the ClassMate Reader include text-to-speech, highlighting, a talking dictionary, text and vocal notes, and easy-to-use audio book navigation. The study features are designed to assist students who have learning disabilities to retrieve information through the use of bookmarks, highlighting tools, text notes, and voice notes.

The ClassMate Reader works with several electronic book formats including the new NIMAS (National Instructional Material Accessible Standard) format, DAISY, Bookshare.org, Audible.com, text, wav, MP3 and audio files. For books in text format, such as those from Bookshare.org, the player provides integrated text-to-speech for reading. It uses a removable SD flash memory card or USB memory stick to store books and electronic texts. It easily transfers files from a computer with a standard USB connection.

Teachers can use the ClassMate Reader to promote independent reading in their students, and the text-to-speech feature provides an appropriate accommodation for classified students during test taking.

For more information or to purchase (\$439) the ClassMate Reader go to www.humanware.com or www.donjohnston.com.









VictorReader Stream by HumanWare



photo courtesy of HumanWare

Developed with the National Federation of the Blind (NFB), the *VictorReader Stream* is a hand-held DAISY/MP3 player for users who are blind/visually impaired. It is about the size of a deck of cards and weighs only six ounces. It uses removable SD flash memory cards to store books, music and electronic text, and a USB port allows for easy transfer of files. Features of the *VictorReader Stream* include the ability to set bookmarks, an integrated microphone for recording voice notes, and easy navigation by chapter, section, page, and bookmarks. Rechargeable batteries provide 15 hours of playtime.

The VictorReader Stream is available for \$329 from HumanWare. For more information go to www.humanware.com.

Kindle from Amazon.com

Amazon Kindle is a new, portable reading device that allows users to wirelessly download books, blogs, magazines, and newspapers. The Kindle is about size of a paperbook and weighs only 10.3 ounces. The 256 MB internal memory can store hundreds of books, and an available SD memory slot provides unlimited storage possibilities. Its "electronic paper display technology" provides a sharp, non-glare screen. The black and white screen uses digital ink and resembles the printed paper of a book. It can be viewed easily at any angle.

Books are downloaded using Amazon's wireless delivery system, Whispernet. No computer or syncing is necessary, and there is no monthly wireless fee. Kindle owners can download books anywhere, instantly, and they can sample the beginning of the book before actually agreeing to its purchase. Newspaper subscriptions are delivered electronically every morning, and magazines are often delivered before they hit the newsstand.









A copy of every book purchased is backed up online in "Your Media Library." This backup library allows Kindle users to free memory on their device and to download books onto their computers for USB transfer to the device in areas where wireless service is unavailable.

Other handy features include a Search option. Users can enter text or articles that they want to access, and Kindle will search their entire library. Users can add annotations to text, similar to writing in the margins of a book; they can also edit, delete, and export notes, highlight and clip key passages, and bookmark pages for future use. A built-in dictionary lets readers look up unfamiliar words as they read. Text size can be adjusted to meet individual comfort needs.

TECH-NJ staff tested the Kindle and tried all of these features and was very favorably impressed with its ease of use, comfort, and convenience. If only it offered text-to-speech for struggling readers! Adding text-to speech to this commercial device would open up the world of reading for pleasure to millions of people with print disabilities.

The Kindle costs \$399 and can be purchased at www.amazon.com.

New Video Magnifiers from Clarity

The Clarity Lynx is a portable, self-contained video magnifying system that can be used for distance viewing as well as desktop magnification. It weighs only 8 pounds, has a 10 inch viewing screen, and provides 5 hours of battery life. With an adjustable camera arm, the main camera lets users read and write, view pictures and objects, and see things in the distance. It also comes with a mouse camera for total reading control. Viewing modes include color, positive or negative text, or yellow on blue. The Lynx is a good solution for users who need a portable unit that provides more magnification and a larger viewing area than handheld magnifiers.

Similar to the Lynx but smaller and without the distance viewing option, the Clarity Rio is a portable, ultra-lightweight video magnifier. It weighs only 1.5 pounds, has a 7 inch screen, and provides 5 hours of battery life. For ease of storage and portability, it folds down into a 6" x 7" compact design. The screen has 5 viewing modes including color, black and white, inverse, yellow on blue, and black on yellow. A step-zoom mode and a viewing mouse give users control over their reading matter. For more information about Clarity's line of video magnifiers, visit their website at www.clarityusa.com.



Clarity Lynx





Assistive Technology in the Classroom: Enhancing the School Experiences of Students with Disabilities a new textbook available from Pearson/Merrill/Prentice Hall

Written by Amy G. Dell and Jerry G. Petroff from The College of New Jersey and Deborah A. Newton from Southern Connecticut State University (previously at The College of New Jersey), the book emphasizes the integration of assistive technology into the curriculum -- how assistive technology can be used in schools to enhance the teaching and learning of students with disabilities. The link between technology and teaching and learning drives the book's organization as well as its content. It is organized by school-related tasks that students must perform on a daily basis to be successful - reading, writing, practicing academic skills, and communicating with their teachers and peers - and presents descriptions of technology-based solutions to the obstacles students with disabilities face in completing these tasks.

Since being able to access computers is a significant barrier, the text features a section on making computers accessible to students with a wide range of disabilities. Another section focuses on augmentative communication and the teacher's role in integrating augmentative communication into classroom activities and routines. The final section addresses issues in implementation of assistive technology in P-12 and post-school environments. Each chapter concludes with a list of suggested activities for students and a list of web sites that provide up-to-date information on specific product names, vendors, and important resources. The book is available from www.amazon.com.

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